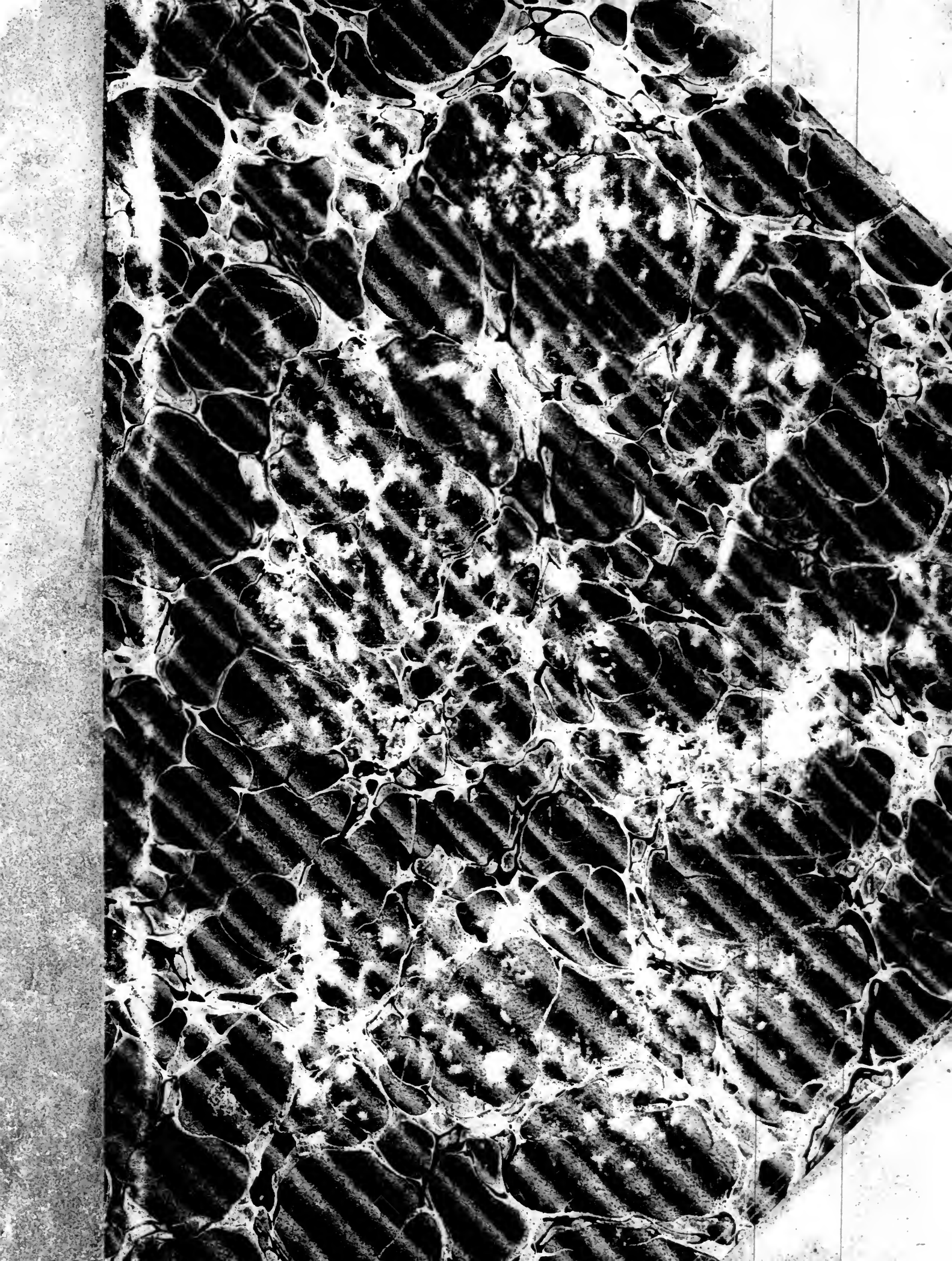


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GEN. CHAS. T. JAMES, *For Manufactures and the
Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & Co., 136 NASSAU ST.

Saturday, January 4, 1851.

European and North American R.R.

No project ever put forth upon this continent has made such progress in so short a time after its inception, as the "plan for shortening the time of passage between New York and London." No one has ever been received with such unquestioned favor, in both Europe and America, from all parties, and from classes of people including the most influential presses of Great Britain and Ireland. Our foreign exchanges have given it more attention than any American scheme that has transpired.

Herapath's Railway Journal, the leading paper devoted to the railway interest in England, published entire the plan as set forth in the Petition to the Legislature of Maine, with the names of the committee who signed it, and fullest endorsement of the scheme has appeared in all the leading London journals.

There has been but one question raised, tending in any degree to call in question the correctness of

he propositions laid down in the original plan—that in regard to the Packet Station on the coast of Ireland. Cork, Valencia, Berehaven, Crookhaven, and the Shannon, have started in the race of competition with Galway to secure this boon, and a commission has been ordered by the British government to examine and report upon the best harbor on the Irish coast as the station for the American packet ships.

The *London Illustrated News*, in giving an account of the scheme, published the resolutions adopted at the Portland Convention, and furnished an engraving, giving a view of Louisburgh harbor, and strongly urging Louisburgh as the station for the ocean terminus on the American side.

The British government can never be expected to do any thing directly in aid of the scheme, but the indications are favorable for valuable grants in the way of permanent mail contracts, and for assistance in aid of emigration. All British North America is aroused to action in aid of the scheme. The Board of Works of Canada have issued a map illustrating their own public works, as relating to the course of trade, from the same idea as that shown in the original plan alluded to, and from the public press of Canada there is a general and hearty support of the scheme. In Nova Scotia and New Brunswick the question of the railway is the absorbing topic, and the meeting of their Parliaments is only wanting, for some definite action on the part of each.

In the State of Maine, the measure begins to assume a shape, of active confidence, on the part of the people generally. Measures are already far advanced toward maturity that shall secure the completion of the line from Portland to Bangor—leaving 90 miles only, on the part of Maine, to be built. Those who know anything of the enterprise of that State, will be certain that she will not be behind hand in the work of carrying it forward to the boundary of New Brunswick. We have alluded to this matter in another part of our paper in connection with the Bangor and Waterville road.

The difficulty in carrying out the plan of this work is, the vast extent of country under different loyalties, over which it must pass, and the necessary labor in keeping all parts of the plan in subjection to the great idea lying at the bottom of the whole. To have awakened and kept in active co-operation such vast and remote interests as this scheme has exerted, requires a bold and compre-

hensive outline, and an incessant attention to details.

The only fear as to the success of the scheme is to be found in the peculiar circumstances of the Lower Provinces. If New Brunswick and Nova Scotia will follow the example of Maine, and give the parties in management a free and liberal charter, the road can be built without aid from either government, and in spite of all the indifference the home government, or that of the colonies, may entertain.

We advise the friends of the measure to ask for nothing but a charter from Nova Scotia or New Brunswick at the outset. Let the markets of New York and of London be tried at the right time, and in the right way. Let both the British and American public be first appealed to, and the necessary contracts for carrying the mails, and for the transportation of emigrants, be secured, before lands or guarantees from the Provincial governments are asked. If there is anything in railway statistics susceptible of mathematical demonstration, it is the fact, that a railway on the shortest route, in point of time, between Europe and America, must hereafter be THE GREAT MONOPOLY of the world.

Mahe.

Penobscot and Kennebec Railroad.—We learn that at the meeting of the directors of the Penobscot and Kennebec railroad, held at Waterville on the 29th ult., there was a very full attendance on the part of the friends of the road throughout the State. In our paper of the 21st of December, we spoke of the importance of this line, and pointed out the striking advantages of its position. The event has fully justified our predictions. The Atlantic and St. Lawrence, the Androscoggin and Kennebec, and the Kennebec and Portland railway companies were represented at this meeting by influential committees of their respective boards of directors. There was also a large attendance of the friends of the respective rival routes between Bangor and the Kennebec river. Arguments were made by the several parties interested, and tenders of stock—of the right of way were made, and various guarantees proffered by the different companies likely to be affected by the decision of the board of directors. The decision of the directors was made on the 26th ult., after full discussion of all the points raised.

The line of the road was located from point

near the Commercial Hotel in Bangor, through Carmel, Newport and the Sebasticook valley, crossing the Kennebec river at the Collee Narrows in Waterville, to a point of easy connection with the Androscoggin and Kennebec railway, and from thence to Augusta, on the west side of the Kennebec river, to a point near the proposed depot of the Kennebec and Portland railway. The distance from Bangor to Waterville upon this line is 55 miles, and from Waterville to Augusta, a fraction short of 20 miles further. This location gives the Penobscot and Kennebec railway company the chance to connect with either or both of the above named roads at their option.

It is a great point for the people of Bangor to secure over their road an uninterrupted line from that city to Portland. To do this by way of the Lewiston and Waterville road, requires an arrangement with two companies, but by the way of Augusta with but one. In order to place themselves on equal terms, the roads on the broad gauge propose to unite and take lease of the Bangor road jointly, as intimated by us as a probable consequence of their position. A proposition from the Kennebec and Portland railroad to join in this arrangement may yet lead to an union of interests, heretofore in opposition.

Such a consummation among the friends of the railway interest in Maine would at once give great power and a fresh impulse to all the interests of the State, and secure at an early day the completion of the European and North American railway on the part of Maine. It seems to us that the position of railway affairs in Maine at the present time is one of far greater promise than at any former period.

The State of Maine is by far the most interesting field for railway enterprise in New England, if not equal to any Northern State. The extension of the proposed line from the Kennebec river to the borders of New Brunswick will give a great trunk line across the entire breadth of the State, a distance of 280 miles from the State-line of New Hampshire. The influence of such a line of railway, passing through many of the principal towns, and bringing Portland and Bangor within five hours of each other, will give a fresh impulse to every branch of enterprise—awaken new agencies now dormant and overlooked in the valleys of the hundred streams which it must cross, from Kittery to Calais, and unite with it, on either side contributions from innumerable branch lines of railway yet to be built.

It is to be hoped that the parties now holding the power will so arrange all the pending questions in issue, as to contribute as far as possible to such a result. An abiding and even an increasing interest in whatever concerns the prospects of our native State, and some acquaintance with the leading parties engaged in the public enterprises of Maine, induce us to speak with so much boldness and freedom.

An advance of credit on the part of the other roads by a lease of the line as fast as built, paying 6 per cent upon its cost, is virtually advancing this amount of capital in aid of the line. A stock, or the company's bonds on fifteen years, guaranteed by six times the amount of capital required to build it, upon a line that will never suffer from competition, will make the stock or bonds of the Penobscot and Kennebec railway company of equal credit as the best securities in New England. Such a stock as that, will command money in any of the large markets.

Commerce of the United States.
The following table sets forth the number and class of vessels built, and the tonnage thereof, in each State and territory of the United States, for the year ending June 30, 1850.

STATES.	Class of vessels.					Total tonnage.
	Ships.	Brigs.	Schooners.	Sloops and canal boats.	Steamers.	
Maine.....	127	75	115	3	6	326
New Hampshire.....	8		2		10	6,914
Vermont.....					1	77
Massachusetts.....	51	19	46	3	2	121
Rhode Island.....	5		5	3	1	14
Connecticut.....	3	7	27	9	1	47
New York.....	26	4	50	112	32	224
New Jersey.....	1	1	35	17	3	57
Pennsylvania.....	7	1	39	107	31	185
Delaware.....			12	3	1	16
Maryland.....	16	5	125		4	150
Dist. Columbia.....				8		288
Virginia.....	1	1	27		5	34
North Carolina.....	1	2	23	2	5	33
South Carolina.....						2,651
Georgia.....			2		3	5
Florida.....						683
Alabama.....			3			79
Mississippi.....						3
Louisiana.....	1		16	3	4	24
Tennessee.....						1,592
Kentucky.....				34	34	6,460
Missouri.....				5	5	1,353
Illinois.....		2	7	3	1	13
Ohio.....			4	11	16	31
Michigan.....			5	6	3	14
Texas.....				1	1	105
Oregon.....			2			2
Total.....	247	117	547	290	159	1360

The following table exhibits a condensed view of the tonnage of the several districts of the United States on the 30th of June, 1850.

MAINE.			
Regist'd tonnage.	Enrol'd & licenc'd tonnage of each district.	Total tonnage.	
Passamaquoddy.....	10,530 73	9,454 73	19,985 51
Machias.....	2,267 65	19,050 67	21,318 37
Frenchman's Bay.....	1,643 21	30,525 27	32,168 48
Penobscot.....	5,713 40	31,237 38	36,950 78
Belfast.....	13,869 79	31,725 48	45,595 32
Bangor.....	9,362 31	15,906 49	25,268 80
Waldoborough.....	38,483 13	57,847 25	96,330 38
Wiscasset.....	6,024 41	12,217 08	18,241 49
Bath.....	76,608 65	27,017 25	103,625 90
Portland.....	60,304 43	26,197 86	86,502 34
Saco.....	1,570 00	1,153 30	2,723 30
Kennebunk.....	9,101 34	2,247 82	11,349 21
York.....		1,361 45	1,361 45
Portsmouth.....	14,978 92	8,117 41	23,096 38
NEW HAMPSHIRE.			
Burlington.....	4,530 32		4,530 32
VERMONT.			
Newburyport.....	16,213 57	7,048 29	23,261 86
Ipswich.....		578 39	578 39
Gloucester.....	2,873 08	19,601 00	22,474 08
Salem.....	20,316 74	8,599 34	28,916 13
Beverly.....		3,173 04	3,173 04
Marblehead.....	1,249 11	5,493 31	6,742 42
Boston.....	270,510 09	50,177 17	320,687 26
Plymouth.....		3,966 88	6,755 31
Fall River.....	2,251 08	10,850 76	13,101 84
New Bedford.....	119,026 45	8,933 69	127,960 09
Barnstable.....	5,520 32	85,581 67	91,102 04
Edgartown.....	5,464 26	2,145 28	7,609 54
Nantucket.....	25,837 80	3,174 83	29,012 68
RHODE ISLAND.			
Providence.....	9,177 14	7,534 64	16,711 78
Bristol.....	11,247 12	1,951 27	13,198 39
Newport.....	5,644 33	4,934 21	10,578 54

CONNECTICUT.			
Middletown.....	95 55	12,033 72	12,129 32
New London.....	23,364 23	17,120 02	40,484 25
Stonington.....	13,188 47	6,724 03	19,912 50
New Haven.....	4,994 65	10,736 70	15,731 40
Fairfield.....	868 35	12,960 27	24,828 62
NEW YORK.			
Champlain.....		2,745 74	2,745 74
Sacket's Harbor.....		8,123 57	8,123 57
Oswego.....		22,404 78	22,404 78
Niagara.....		732 73	732 73
Genesee.....		1,036 74	1,036 74
Oswegatchie.....		1,985 34	1,985 34
Buffalo Creek.....		39,679 00	39,679 00
Sag Harbor.....	10,953 68	4,211 69	15,165 42
Greenport.....	4,236 29	4,319 46	8,555 75
New York.....	441,336 76	394,230 80	835,567 61
Cape Vincent.....		2,496 92	2,496 92
Cold Spring.....	2,376 40	1,478 90	3,855 35
NEW JERSEY.			
Perth Amboy.....	133 60	21,950 82	22,084 56
Bridgetown.....		14,472 24	14,472 24
Burlington.....		7,578 67	7,578 67
Camden.....		9,569 32	9,569 32
Newark.....	77 58	6,551 05	6,628 63
Little Egg Harbor.....		6,182 75	6,182 75
Great Egg Harbor.....		14,084 14	14,084 14
PENNSYLVANIA.			
Philadelphia.....	64,205 10	142,293 72	206,497 82
Presque Island.....		7,870 31	7,870 31
Pittsburgh.....		44,571 30	44,571 30
DELAWARE.			
Wilmington.....	1,651 68	7,808 70	9,460 43
New Castle.....		7,259 14	7,259 14
MARYLAND.			
Baltimore.....	90,669 82	58,349 51	149,019 38
Oxford.....		12,343 46	12,343 46
Vienna.....		15,478 01	15,478 01
Snow Hill.....		9,511 51	9,511 51
St. Mary's.....		2,184 91	2,184 91
Town Creek.....		2,226 81	2,226 81
Annapolis.....		2,323 17	2,323 17
DIST. OF COLUMBIA.			
Georgetown.....	2,796 19	14,214 42	17,010 61
VIRGINIA.			
Alexandria.....	2,687 31	5,850 49	8,537 80
Norfolk.....	10,542 10	13,592 79	24,134 89
Petersburgh.....	948 76	1,759 27	2,708 08
Richmond.....	3,160 80	5,297 40	8,458 25
Yorktown.....		4,806 70	4,806 70
Rappahannock.....	503 26	5,320 93	5,824 24
Accomac, C. H.....		4,082 75	4,082 75
East river.....		4,868 61	4,868 61
Yeocomico.....		3,283 90	3,283 90
Cherrystone.....		1,232 08	1,232 08
Wheeling.....		5,933 70	5,933 70
NORTH CAROLINA.			
Wilmington.....	9,123 51	6,074 76	15,198 32
Newbern.....	1,518 32	3,689 25	5,207 57
Washington.....	1,097 61	4,605 49	5,703 15
Edenton.....	127 07	1,018 09	1,145 16
Camden.....	1,269 11	10,768 88	11,948 04
Beaufort.....	613 69	1,645 79	2,259 53
Plymouth.....	1,183 88	1,144 54	3,328 47
Ocracoke.....		1,428 15	1,428 15
SOUTH CAROLINA.			
Charleston.....	15,377 48	17,915 10	33,292 58
Georgetown.....	1,749 19	1,030 31	2,779 50
Beaufort.....			
GEORGIA.			
Savannah.....	10,437 16	9,293 67	19,730 83
Sunbury.....			
Brunswick.....		533 81	533 81
Hardwick.....			
St. Mary's.....	491 48	933 87	1,425 40
FLORIDA.			
Pensacola.....	1,221 11	572 63	1,793 74
St. Augustine.....			
St. Mark's.....		353 07	353 07
St. John's.....		309 72	309 72
Apalachicola.....		2,050 36	2,050 36
Key West.....	4,415 46	2,350 09	6,765 55
ALABAMA.			
Mobile.....	7,403 67	16,763 88	24,167 60

MISSISSIPPI.			
Pearl river.....	1,367 34	1,367 34	
Vicksburg.....	460 28	460 28	
LOUISIANA.			
New Orleans.....	83,668 55	165,040 49	248,709 09
Teche.....	1,380 71	1,380 71	
TENNESSEE.			
Nashville.....	3,776 05	3,776 05	
KENTUCKY.			
Louisville.....	14,820 19	14,820 19	
MISSOURI.			
St. Louis.....	28,907 47	28,907 47	
ILLINOIS.			
Chicago.....	21,242 17	21,242 17	
OHIO.			
Cuyahoga.....	35,315 84	35,315 84	
Sandusky.....	7,328 49	7,328 49	
Cincinnati.....	17,183 80	17,183 80	
Miami.....	2,629 20	2,629 20	
MICHIGAN.			
Detroit.....	36,893 89	36,893 89	
Michilmackinac.....	1,250 55	1,250 55	
TEXAS.			
Galveston.....	415 92	2,892 88	3,308 85
Seluria.....		588 52	588 52
OREGON.			
Astoria.....	1,063 43		1,063 43
CALIFORNIA.			
San Francisco.....	15,285 12	2,306 65	17,591 77
TEXAS.			
Point Isabel.....	401 35	274 23	675 63
Total.....	1,585,711 2 2	1,949,743 3	535,454 23

ON THE INCrustATION WHICH FORMS IN THE BOILERS OF STEAM ENGINES, IN A LETTER ADDRESSED TO DR. G. WILSON, F.R.S.E. BY DR. J. DAVY.

On entering on this enquiry, which I did after my return from the West Indies, in December, 1848, and after communicating a short paper to the Royal Society "On Carbonate of Lime in Sea-water," it appeared to me desirable to collect as many specimens as possible of incrustation from the boilers of steam vessels, now so widely employed in home and distant navigation. By application to companies and to friends in our seaports, as Dundee, Hull, Southampton, Hayle, Liverpool, Whitehaven, I have succeeded in procuring specimens of incrustation formed by depositions in voyages from port to port, in the British and Irish Channels and the North Sea, between Southampton and Gibraltar, in the Mediterranean and the Black Sea, and in the Atlantic Ocean, between Liverpool and North America, and between Southampton and the West Indies. I am promised specimens from the Red Sea and the Indian Ocean—but these I have not received. The character and composition of the incrustation, whether formed from decomposition from water of narrow seas or of the ocean, I have found very similar—with few exceptions, composed chiefly of sulphate lime; so much so, indeed, that unless chemically viewed, the other ingredients may be held to be of little moment, rarely amounting to five per cent. of the whole. From two specimens of incrustation from the boilers of steamers crossing the Atlantic, one of which you sent me, in which you had detected a notable portion of fluorine, judging from its etching effect on glass,—I also procured it, it was in combination with silica; and procured it also so combined from two obtained from steamers navigating our own seas, one between Dundee and London, the other between Whitehaven and Liverpool. Of this I had proof, by covering with a portion of glass or platinum foil a leaden vessel charged with about 200 grains of the incrustation mixed with sulphuric acid, and by keeping the glass cool by evaporation of water from its surface, and by supplying moisture for the condensation of the silicated gas by a wet band round the mouth of the vessel. After about twenty-four hours under this process, a slight but distinct decomposition was found to have taken place, corresponding to the margin of the vessel,—a decomposition such as that produced by silicated fluoric acid gas under the same circumstances. Thus it was not dissipated

ed by heat nor dissolved by water, and yet admitted of removal by abrasion, either entirely or in great part; the former in the instance of the platinum foil, the latter in that of the glass. Besides the ingredients above mentioned, I may add that, in many instances, oxide of iron, the black magnetic oxide, was found to form a part of this incrusting deposit, collected in one or more thin layers, and further, that in some, especially of steamers navigating the narrower and least clear part of the British Channel, the decompositions presented a brownish discoloration produced by the admixture of a small quantity of muddy sediment. Incrustations so discolored, I may remark, are reported to be most difficult to detach. I have said that the incrustations, with few exceptions, were similar in their structure, and that that was crystalline;—it was not unlike the fibrous variety of gypsum of the mineralogists. The specimens received, as might have been expected, varied very much in thickness, viz. from one line and less to half an inch. I have endeavored, by a set of queries which I have distributed, to obtain information respecting the exact time in which the incrustations were formed, and under what circumstances; but with partial success only, owing, it may be inferred, to a want of exact observation. In one instance, that of the North American mail ship Europa, which arrived at Liverpool on the 15th of November, at 4 P. M., having left Boston on the 7th of the same month at 9 A. M., and incrustation was found in her boiler of about one-fifth of an inch in thickness; and it is stated that an incrustation of about the same thickness was found on her outward voyage. This example may aid in giving some idea of the degree of rapidity with which the incrustation is produced, at least in the Atlantic, with the precaution of "blowing off" every three hours, and with the "brine pumps" kept in constant work. In other seas, especially contiguous to shores, and more especially of shores formed by volcanic eruptions, it is probable *ceteris paribus*, the rate of the deposition of the incrusting sulphate of lime will be more rapid. The result of the trials of several portions of sea water taken up on the voyage from the West Indies to England noticed in the paper of mine already referred to, are in favor of this conclusion. To endeavor to prevent the deposition of the incrusting matter or to mitigate the evil, various methods, it would appear, have been had recourse to,—some of a chemical kind, as the addition of muriate of ammonia and sulphate of ammonia to the water in the boiler, without success, as might be expected; others, of a mechanical kind, with partial success, as the introduction of a certain quantity of sawdust into the boiler, or the application of tallow, or of a mixture of tallow and plumbago to its inside, to prevent close adhesion, and the more easy separation of the incrusting matter either by percussion, using a chisel-like hammer, or by contraction and unequal expansion, by means of flame kindled with oakum, after emptying the boiler and drying it. Of all the methods hitherto used, that of "blowing off," that is, the discharging by an inferior stop-cock a certain quantity of the concentrated water of the boiler by the pressure of steam, after the admission above of an equivalent quantity of sea water of ordinary density, appears to be, from the reports made, the most easy in practice, the least unsuccessful, and the most to be relied on. But, as in the instance given of the North American steamer, it can be viewed only as a palliation. Considering the composition of the incrusting matter and the properties of its principal ingredient—the sulphate of lime, a compound soluble in water and in sea water, and deposited only when the water containing it is concentrated to a certain degree, there appears to be no difficulty theoretically in naming a preventive. The certain preventive would be the substitution of distilled or rain water in the boiler for sea water. Of this we have proof in efficacy of Hall's condenser, which returns the water used as steam, condensed, after having been so used: but, unfortunately for its practical success, the apparatus is described as being too complicated and expensive for common adoption. Further proof is afforded in the fact, that the boilers of steamers navigating lakes and rivers in the waters of which there is little or no sulphate of lime, month after month in continued use, remain free from incrustation. This I am assured is the case

with the steamers that have been plying several summers successively on the lake of Windermere. And it may be inferred, that in sea-going steamers in which sea water is used in the boiler,—or, indeed, any water containing sulphate of lime, the prevention of deposition may be effected with no less certainty by keeping the water at that degree of dilution at which the sulphate of lime is not separated from the water in which dissolved. From the few trials I have made, I may remark, that sulphate of lime appears to be hardly less soluble, if at all less, in water saturated with common salt than in perfectly fresh water. This seems to be a fortunate circumstance in relation to the inquiry as to the means of prevention, and likely to simplify the problem. If these principles be sound, their application under different circumstances, with knowledge and judgment on the part of the directing engineer, will probably not be difficult. His great object will be in sea-going steamers to economise the escape of water in the form of steam, and thereby also economise heat and fuel; also, when fresh water is available to use it as much as possible; and further, to avoid using sea water as much as possible near coasts and in parts of seas where sulphate of lime is most abundant. From the incrustation on the boilers of sea-going steamers, the attention can hardly fail to be directed to that which often forms, to their no small detriment, in the boilers of locomotive railway engines, and of engines employed in mines and in the multifarious works to which steam power is now applied. These incrustations will of necessity be very variable, both in quantity and quality, according to the kind of ingredients held in solution in the water used for generating the steam. Hitherto I have examined two specimens only of incrustations taken from the boilers of locomotive engines, and a single one only from the boiler of a steam engine employed on a mine—a mine in the west of Cornwall. The latter was fibrous, about half an inch thick, and consisted chiefly of sulphate of lime, with a little silica and peroxide of iron, and a trace of fluorine. The former was from one-tenth of an inch in thickness to one inch. They were laminated, of a grey color, and had much the appearance of volcanic tufa; they consisted principally of carbonate and sulphate of lime with a little magnesia, protoxide of iron, silica, and carbonaceous matter—the last two, the silica and carbonaceous matter, probably chiefly derived from the smoke of the engine and the dust in the air. From the engineer's report it would appear that the thinnest—the incrustation of about one-tenth of an inch, had formed in, about a week, during which time the locomotive had run about 436 miles and consumed about 10,900 gallons of water.—*London Athenaeum*, for August, 1850.

Mr. Banton's Bill for a Railroad to the Pacific.

Be it enacted, by the Senate and House of Representatives of the United States of America, in Congress assembled. That a district of territory one hundred miles wide, and extending from the western frontier of Missouri to the Pacific ocean, and corresponding as nearly as may be to the central latitudes of the United States, together with the revenue from lands and customs in California, Oregon, New Mexico and Utah so far as not required for expenditures herein, shall be set apart and reserved for opening communications with California, Oregon, New Mexico, and Utah, by means of a central national highway from St. Louis to the bay of San Francisco, to connect with ocean navigation to that bay, with a branch of said highway to Santa Fe, in New Mexico, and a branch to the tide-water region of the Columbia river, so as to connect with ocean navigation at that point, and also a branch to the city of the Great Salt Lake, if said central highway should not in its proper course pass that city, and a breadth of fifty miles shall be set apart and reserved for the location and construction of said branch roads respectively.

Sec. 2. And be it further enacted, that the said central national highway shall consist of a system of parallel roads adapted to different modes of travel and transportation, and a margin for lines of electro-telegraph wires, whereof one common road and one iron railroad shall be immediately opened and constructed, and such other roads shall be

hereafter opened and constructed as congress, from time to time may authorize; and in order that the said national central highway may be constructed on a scale commensurate to its importance, and adapted to the wants of present and future time, and in order to allow a convenient space for all the parallel lines of road and commerce may require thereon, a breadth of one mile shall be allowed through a reserve of one hundred miles, and the said branch roads shall equally consist of a common road and a railway, and such other roads as Congress may from time to time authorize and direct, with a margin for a line of electro-telegraph wires, and a breadth of one thousand feet shall be allowed through the reserve of fifty miles for such branch roads, each respectively; and each track for a road shall be entitled to a space of one hundred feet wide, and the telegraph line, to a space of one hundred feet wide, and when finished the said iron railway or ways, shall never be subject to any toll or tax beyond that which may be necessary to provide repairs; and the said common roads shall be forever free from toll or tax, and shall be kept in travelling order by the care and expense of the federal government or the local government if surrendered to them.

Sec. 3 And be it further enacted, that the President be authorized and requested to cause all the authentic information in possession of the government, or in its power to procure, necessary to shew the practicability of a route for said central highway, to be collected and digested into brief memoirs illustrated by topographical and profile maps, to be laid before congress as soon as possible, also, that he be authorized and requested to cause further surveys and examinations to be made, and the results laid before congress as soon possible; and for that purpose to employ as many citizen civil engineers as may be necessary.

Sec. 4. And be it further enacted, that as soon as Congress shall fix upon the route for said central highway and branches, the President shall be and is hereby authorized and requested to cause the Indian title to be extinguished upon a breadth of one hundred miles, to cover the route of said central highway, and also to extinguish the Indian title upon suitable breadths covering the said branch roads; and the location and construction of the central highway shall immediately be commenced, both for the common road and the railway, and with a force calculated to finish the common road in one year, so as to be possible for wagons and carriages, and the railway in ten years.

Sec. 5. And be it further enacted, That as soon as the said common road is finished the same shall be a post road, and a daily mail carried thereon in wagons or coaches, or sleighs when necessary, at the rate of at least one hundred miles in twenty-four hours; and a daily horse mail for light letters and printed slips at the rate of at least two hundred miles in twenty-four hours.

Sec. 6. And be it further enacted, That as soon as said railway, or any sufficient part thereof shall be completed and fit for use, the use thereof, shall be granted for a limited time, to such individuals or companies, as shall, by contract with the government, agree to transport persons, mails, munitions of war, and freight of all kinds, public and private in vehicles furnished by themselves, over the same at such reasonable rates as shall be agreed upon, Provided, That if other roads shall hereafter become constructed on the grounds reserved for roads by this act, the same company or persons shall not be allowed to have contract for transportation or any interest, in more than one road at the same time.

Sec. 7. And be it further enacted, That military stations shall be established on the line of the central highway and its branches, at such places as the President shall direct.

Sec. 8. And be it further enacted, That donations of land, to the extent of one hundred and sixty acres, shall be made to each head of a family widow, or single man, over eighteen years of age who shall be settled on the line of the said central highway and branches, and within the bounds of the Indian claim within twelve months after the time of such extinction of title, and pre-emption rights, to the same extent, shall be allowed to all similar settlers after twelve months, and the residue of said reserved districts, except gold mines

and placers; and private claims or donations of pre-emption rights, shall be sold, and the proceeds applied to the construction of the road.

Sec. 9. And be it further enacted, That the sum of three hundred thousand dollars, out of any money in the treasury not otherwise appropriated, shall be, and the same is hereby appropriated, and placed at the disposition of the President, to defray the expenses of carrying into effect the third and fourth sections of this act, for the collection and preparation of information and the extinction of Indian titles necessary to the selection and location of the route, for said national central highway and branches.

Sec. 10. And be it further enacted, That it shall and may be lawful for the President of the United States to contract with the Mississippi and Pacific Railroad Company for their interest in so much of said road as shall be within the State of Missouri, and to purchase the same at a price not exceeding their actual expenditures, the said purchase to be subject to the ratification of Congress.

Population of Wisconsin.

Counties.	Dec. 1847.	June, 1850.
Brown.....	2,914	6,215
Calumet.....	1,066	1,745
Manitowoc.....	1,285	3,702
Columbia.....	3,791	9,559
Crawford.....	1,409	3,113
Chippewa.....	1,674	624
St. Croix.....	367	489
La Pointe.....	10,935	16,628
Dane.....	14,906	19,140
Dodge.....	7,409	14,512
Fond du Lac.....	11,720	16,169
Grant.....	6,487	8,577
Green.....	7,963	9,532
Iowa.....	1,574	483
Richland.....	9,335	15,323
Jefferson.....	2,261	11,538
La Fayette.....	22,791	8,642
Marquette.....	1,504	31,117
Milwaukee.....	19,539	1,758
Portage.....	14,729	14,971
Racine.....	2,178	10,734
Kenosha.....	5,580	20,759
Rock.....	15,036	4,556
Sauk.....	15,866	8,486
Sheboygan.....	15,547	17,864
Walworth.....	2,787	19,344
Waukesha.....	210,546	19,485
Washington.....	305,121	10,167
Winnebago.....		

Total.....210,546 305,121
Increase in two years and a half.....94,575

The only county which shows a decrease since 1847, is St. Croix. Error in the last or the present census, will doubtless account for this.

The following table shows the population of Wisconsin in each of the years named:

Year.	Population.	Year.	Population.
1840.....	30,945	1847[Dec.]....	210,546
1812.....	44,478	1850[June]....	305,121
1846[June]....	155,277		

The principle element in the rapid increase of our population [immigration from abroad] operates in each year from May to November. Hence, through the interval between the census of 1850 and that of 1847, is two years and a half, while that between 1846, and 1847 is but one and a half years each of these last returns for [1847 and 1850] shows substantially the effect of the two preceding years immigration. For the last two years the increase in the population of our State has been at the rate of 40,000 per annum.—*Milwaukee Sentinel*.

Illinois.

Atlantic and Mississippi.—The survey of Mississippi and Atlantic Railroad from the state line opposite Terre Haute, on the Wabash, to Illinois town on the Mississippi, opposite St. Louis, was completed on Tuesday, the 3rd instant.

This survey has been very thoroughly made by able and scientific engineers.—William H. Morrison, of Indiana, chief engineer, S. W. Hartwell, J. Lawrence, and J. Cruse, assistant engineers. The survey was accompanied through out by one of the Directors, J. V. Hedges, Esq., of Clark county, who was very successful in procuring the right of way.

The confidence in this useful enterprise is now general, and its speedy construction no longer doubted. From Terre Haute to the state line where our road is to unite with that of Indiana, the survey was under the supervision of Chauncy Rose, Rose, Esq., President of the Terre Haute and Richmond railroad.

A full report of the survey will be made to the Board of Directors, at an early date. We understand that the route is even more favorable than was anticipated, and for directness and eligibility probably not surpassed in the United States.—*Greenville Jour.*

CENSUS OF NEW YORK CITY.

Comparative Population of the City of New York by U. S. Census of 1850, and State Census of 1845.

Ward.	1845.	1850.
First.....	12,230	19,775
Second.....	6,962	6,616
Third.....	11,900	12,250
Fourth.....	21,000	23,424
Fifth.....	20,362	22,691
Sixth.....	19,343	24,691
Seventh.....	20,556	32,695
Eighth.....	30,900	34,531
Ninth.....	30,907	40,675
Tenth.....	20,953	23,316
Eleventh.....	27,595	43,772
Thirteenth.....	22,411	28,038
Fourteenth.....	21,103	25,366
Fifteenth.....	19,422	22,547
Seventeenth.....	27,144	43,780
Sixteenth.....	40,350	52,887
Eighteenth.....		31,567
Twelfth.....	13,378	10,796
Nineteenth.....		18,452

Total.....371,223 517,849
Increase in five years, 146,626, or nearly forty per cent.

METALS OF THE UNITED STATES.

Iron is the most abundant metallic mineral our country affords. Its value is ten times the value of gold and silver, and one-half the value of all the metals produced in the United States. Iron is found in every state in the Union.

The most valuable mine is one in Salisbury, Conn., which yields 3000 tons annually. The mines in Duchess and Columbia counties, in the state of New York, produces annually, 20,000 tons of ore; Essex county 1500 tons; Clinton 3000; Franklin 600; St. Lawrence 2000; amounting in all to more than \$500,000. The value of the iron produced in the United States in 1835, was \$5,000,000; in 1837, \$7,700,000. In Ohio 1200 square miles are underlaid with iron. A region explored in 1838 would furnish iron sixty-one miles long and six miles wide; a square mile would yield 3,000,000 tons of pig iron, so that this district would contain 1,080,000,000 tons. By taking from this region 400,000 tons annually, a larger quantity than England produced previous to 1829, it would last 2700 years! as long a distance certainly as man looks ahead! The states of Kentucky, Tennessee, Indiana, Illinois, Maryland and Virginia possess inexhaustible quantities of iron ore. In Tennessee, 100,000 tons are annually manufactured. Notwithstanding our great iron resources, more than one half of our cutlery, hardware, railroad iron, etc., is still imported from Great Britain.

It is supposed by geologists that the weekly supply of gold from our own mines will be equal to the demand, and that our own mines will yet be more profitable than the mines of Brazil and Columbia.

The most extensive lead mines in the world are in Missouri, where the lead region is seventy miles long by fifty wide. These mines, in 1826, produced 7,500,000 lbs, and the whole produce of the United States was 8,332,105.

It has been estimated that the quantity of iron required in England for railroads, &c., for the current year, will be about 1,260,000 tons, which it is supposed, will be equal to all that country will produce.

The quantity of lead manufactured in the United

States in 1828, was 12,311,730 pounds; in 1830, 8,332,105; and in 1832, 4,281,867 pounds.

The copper trade, until within a year or two, has not been of much importance, as the result of the efforts made were not such as to justify any great operations. But now it appears to be attracting a good deal of attention. Whether the demand for copper stock is a fair index to the value of the copper regions, remains to be seen.

It is estimated that the quantity of iron produced in the United States in 1845, was 919,100 tons, valued at \$33,940,500.

New York.

Auburn and Ithaca Railroad.—A corps of engineers during the last week or two surveyed a route for a railroad from Auburn, to meet the Cayuga and Susquehanna railroad, at a point some miles east of this village. The same company of engineers have since proceeded to survey a connecting route to Little Sodus Bay.

We learn from a gentleman connected with the Cayuga and Susquehanna railroad, that there is every prospect of the immediate construction of the road from Auburn to Ithaca, and a connection of the two routes in this village.—*Ithaca Journal*.

Pennsylvania.

Population of Pittsburg.

City of Pittsburg, including Allegheny and suburbs..... 83,954
(Population of the same districts in 1840, according to the official returns, 31,204.)
Remainder in Allegheny county..... 52,709

Total population..... 136,663
(Population in Allegheny county in 1840, 81,225.)

Georgia.

Southwestern Railroad.—The people in the south west will doubtless be gratified to learn that the work on the above road is rapidly progressing to completion. The grading is nearly finished—about two-thirds of the superstructure has been placed upon the track, and the work of laying the iron is now being pressed with all possible dispatch. The iron for the entire road to Oglethorpe is at the depot in this city. Several miles of it has been placed upon the track, and an engine is now duly employed in conveying it along the line. The bridges are nearly completed and the depots and water stations on a part of the route are in a fine state of forwardness.

We understand that it is the intention of those having charge of the work to open the road to Fort Valley by the first of June, and to Oglethorpe early in July. The high prices of labor and provisions have doubtless contributed materially to delay the progress of the work. We trust, however, that it may be pressed forward with the least possible delay, as the road is greatly needed, not only to facilitate the mail transportation in the southwest, but for the convenience of the planting and travelling public.—*Savannah Republican*.

Eric Canal.

Lockage at Rochester.—The whole number of eastern bound boats weighed at the Rochester Weigh Lock during the past season, was 6,983, the average freight of which was 149,391 pounds, and the total weight 1,047,412,275 pounds. The number of cargoes re-weighed passing westward, was 64; and the number of empty boats weighed, 137. There were 1,645 cargoes wholly of lumber.

The following table shows the heaviest cargoes, and the number of boats, in each year from 1840 to 1850, inclusive, except 1846:

	Heaviest Cargo.	No. of Boats.
1840.....	173,700	4,071
1841.....	174,300	4,146
1842.....	198,300	3,449
1843.....	217,712	4,356
1844.....	221,400	5,242
1845.....	225,752	5,451
1847.....	245,600	8,141
1848.....	233,400	6,344
1849.....	240,800	7,262
1850 (on new scales).....	318,000	7,184

The following is the number of boats weighed for 1849 and 1850, average weight, &c.:

	1849.	1850.
Eastern bound boats,	7,205	6,983
Average freight, lbs.	145,617	149,994
Total weight,	1,049,884,683	1,047,412,275
Western cargoes re-weighed,.....	57	64
Empty boats, re-weighed,.....	126	137
Cargoes of lumber,...	1,337	1,645

During the past four months the new weigh lock scale built by Messrs. Duryce, Forsyth & Co., has been in use. Many tests of its accuracy have been made, from which I am fully convinced that it will indicate the true and precise weight of whatever bodies it may be necessary to place upon it. The heaviest boat and cargo yet placed upon it weighed 318,000 lbs., and while under this enormous pressure, it moved with perfect ease and freedom, showing its admirable mechanism, and its perfect adaptation to the purposes for which it was designed. With the old scale, it required about fifteen minutes to weigh a boat, the most of which was consumed in getting in and out of the lock. With the new lock and scale a saving of two-thirds of the time formerly required is effected.—*Rochester Democrat*.

COMMERCE OF OSWEGO.

We copy the following statement from the Oswego Journal:

	Tolls.
1850.....	\$310,135 37
1849.....	280,680 04
Increase.....	\$26,455 33
Flour, wheat and lumber cleared.	

	1850.	1849.
Wheat, bush.....	1,552,000	1,063,490
Lumber, ft.....	70,173,000	48,316,000
Flour, bbls.....	804,746	808,307

Tennessee.

Memphis and Charleston Railroad.—The Memphis Eagle say: We understand from good authority that the preliminary surveys for this important work are nearly completed, and that the various routes surveyed have proved more favorable than was anticipated after the first reconnaissance made by the engineers. A meeting of the directors will take place in January, to decide upon the most eligible route for the road; the time and place for the meeting will be advertised in due time.

All this is wanting to ensure the earliest practicable construction of the road, is for the public to feel and manifest a proper interest in it.

State of the Cotton Manufacture.

We copy from the Transcript the following table, showing the number of spindles in the cotton mills in New England, and the number that is now idle from the depressed state of the business:

	Now stopped.....
Maine.....	142,700
New Hampshire.....	373,000
Massach's.....	1,220,000
R. Island.....	500,000
Connecticut.....	250,000
	2,485,700
	715,300

Finances of Pennsylvania.

The receipts into the treasury of this State for the year ending Dec. 1st, 1850, have been as follows:—

Tax on real and personal estate.....	\$1,317,821 55
Canal and railroad tolls.....	1,713,848 16
Loans.....	270,000 00
Balance in the treasury December 1, 1849.....	926,207 24
Miscellaneous.....	1,416,461 80

\$5,644,338 75

Expenditures.

Public improvements.....	\$1,488,799 74
Sinking fund.....	318,864 03
Interest on loans.....	2,004,714 51
Balance Dec. 1, 1850.....	754,252 81
Miscellaneous.....	1,077,707 66

\$5,644,338 75

The Tour of Europe.

During the past year the readers of the Railroad Journal have been favored with a series of letters from Europe, containing very full information in regard to the railways of England and the continent, and abounding in valuable suggestions applicable to our own country.

The writer of these letters, John M. Adams, Esq., of Portland, enjoyed unusual facilities for acquiring information; and the value of his letters may be inferred from the fact that they were copied more or less extensively in different parts of the country, and the statistics of the French, German and Belgian railways were copied into the Merchants' Magazine and the leading journals of the country. A thorough acquaintance with the French, and a competent knowledge of the Italian and German languages enabled Mr. Adams to acquire, in a briefer period than was commonly sufficient for this purpose, a tolerable knowledge of the countries through which he passed. In company with a friend, on a tour of observation and pleasure like himself, with the command of every requirement which the most ample means could secure, the period of a few months under such circumstances, would give to an active mind advantages beyond what are common to ordinary travellers.

It is with pleasure we can state, therefore, that we have the assurance that during the coming year our readers will receive further communications from the pen of Mr. Adams, leisurely drawn out from notes, taken down at the time.

In sitting down to write this, however, our purpose was to note the changes which within a few past years have occurred, in the facilities of European travel. One-fourth of the time only is now required to accomplish a tour of Europe, such as was common before the introduction of railways—and in Lord Chesterfield's time, one hundred years ago, the fashionable tourist was content with seeing Paris and the Rhine.

In recounting with Mr. Adams, the incident of travel, we were surprised to learn how much an active mind can achieve, in a seven months' time, as our readers may see from the simple narration which follows.

Mr. Adams sailed from Boston in the Europa on the 7th of November, 1849, and reached Liverpool after a passage of 10½ days. The severity of the winter led our friends to hasten towards Paris and the south of Europe. Three days spent in Liverpool enabled them to see something of the city, and fourteen days in London, gave them time to deliver letters and arrange plans for the winter.

Passing the Straits of Dover via Folkestone to Boulogne, the cars take them to Paris in about nine

hours time. A fortnight spent in Paris gave them time to do much in the way of sight seeing, and they proceeded southward towards Lyons by the railway which was then extended to Tournay.—Two days are spent in Lyons—two in Marseilles, where our travellers take an English steamer from thence to Malta, passing in sight of Corsica and Elba. A fortnight was well employed at Malta, and passing through the Straits of Messina, no longer the terrible Scylla and Charybdis, they spend sixteen days in Naples, ascending Vesuvius, visiting among other localities Herculaneum and Pompeii. Three weeks were required to see the eternal city, its remains of former grandeur and its present works of art. Rome would repay a still longer sojournment, but our travellers hastened on to Florence, spending five days in that city, one at Leghorn, two at Genoa, two at Turin two at Milan, one at Vienna, and five days at Venice. One day is spent at Trieste, one at Laybach, where they take the rail to Vienna. Three days are spent in Vienna, now connected by railway with the whole continent of Europe. This is enough to see the manners of the Austrians. One day at Prague, two at Dresden, two at Berlin, two at Hanover, one at Brunswick, one at Dusseldorf, two at Cologne, one at Aix la Chappelle, one at Brussels, passing the field of Waterloo by the way of Valenciennes, they reach again from the north the city of Paris.

A month in Paris gives them an opportunity to hear the debates in the French Assembly, and the arguments in the courts of law, besides learning many of the peculiarities of the French metropolis. Returning to London by the way of Calais and Dover, a fortnight is attended upon the law courts and upon the sittings of Parliament at the most busy period of the session, gives one the means of contrasting the doings of the English Parliament with those of the Congress of the United States. Mr. Adams was present when Lord Campbell took his seat as Chief Justice of the King's Bench, after the retirement of Lord Denman.

Returning to Liverpool again, after a few days they attend the Chester races, proceed to Holyhead, passing through the Britannia Tubular Bridge, crossing the St. George's Channel to Dublin, and after spending two days in Dublin, take the railway to Cork, visit the Lakes of Killarney, and after spending some days there, pass on to Mallow, thence to Dublin, thence to Belfast, visiting the Giant's Causeway, Portrush and Castle Blarney, when they embark at Belfast for Glasgow, there spending two days; they ascend the valley of the Clyde to Edinburgh. After three days in Edinburgh and vicinity, they proceed to Manchester, a second time to Chester, and thence to Liverpool. After seeing all that was worthy of attention at Liverpool, they re-embark on board the Europa for New York, and reach this city on the 27th of May, 1850.

We have thus sketched the route and the time employed in this lengthened tour of Europe. We think it is without a parallel. It seems as if space was practically annihilated, and that the Danube and the Rhine were in as convenient proximity as the Tennessee and the Wabash.

The vast collection of facts and observations, as well as the selections of works concerning the geography and the literature of the countries visited, will enable Mr. Adams to give us at his leisure notes and observations of the highest value. Few men who possess the peculiar quality for a travel-

ler have the means or facilities requisite for acquiring information. From the ample store so well collected, we hope to distribute something of it during the present year to the readers of the Journal.

The Stock and Money Market.

The present year opens with a very boyaunt state of the stock market. This is partly owing to an abundance of money, affording the means of speculation, and partly to the largely increased receipts from railroads over the past year. Speculation too, is stimulated by the general prosperity which prevails, which encourages people to incur new obligations, and to trust to the continued abundance of money, when they shall mature. With the exception of an excess of importations, every branch of our industry is in the main prosperous. Production is ahead of consumption in almost every pursuit, and with the steady demand for our credits abroad, there appears to be no immediate apprehension of a change.

Fancy stocks are the thermometers of the money market, because the prices which they command indicate the "feeling" which exists in business, and have but little relation to their true value. This value is a matter of opinion, and when opinion runs in their favor, they command a price far above their real worth. When this is adverse, they sink as far below the true standard. A stock, on the other hand, which pays a stated per centage, and holds out sufficient evidence that it can do this under all circumstances, is very little affected by any change in the money market. A stock of known and admitted value will always find purchasers about as readily when money is scarce as when it is abundant, because when the former is the case, the risk of lending is greater. The panic which a year or two since carried down the Massachusetts stocks all the way from 1 to 50 cents on the dollar, scarcely affecting the Boston and Lowell stocks, neither has the recent rise which has carried so many of these stocks back to their former position. As soon as a road satisfies the public that it can pay under all circumstances 6 per cent., it is taken at once from the hands of the speculators and brokers, and bought up for permanent investment. The favorite foot-balls in the stock market, are these whose value is *problematical*. In this case the ingenuity of the two great opposing parties have plenty of scope; the one in exercising their imagination in inventing plausible reasons to convince people of its value, and the other, to show that it is utterly worthless. So long as its capacities remain a matter of conjecture any, thing may be predicated of it. Just in proportion as a road begins to work out its true character, as soon as order breaks in upon chaos, it ceases to be available as *fancy*. As soon as its real worth is demonstrated by its *traffic table*, and it can no longer be affected by the schemes, the stories, or contrivances of the jobbers. "Othello's occupation is gone."

The very rapid advance for the few past months, in a large number of our stocks, is due in part to a general and uniform increased receipts, and partly to the cause to which we have adverted. The "cornering" process lies at the bottom of the advance in others. This is hardly ever attempted, and can scarcely succeed with a sound stock, as the value of such remain unaffected by any of the efforts of speculation.

The following are the prices of some of the leading New England stocks, at sales in Boston, January 2:

Shares Eastern railroad.....	100½
do Ogdensburg railroad.....	39½
do Old Colony railroad.....	66½
do Vermont central railroad.....	37½
do do.....	3. b 30 d 38
do do.....	b 90 d 38½
do do.....	b 45 d 38
do Western railroad.....	102½ a 102½
do Boston and Worcester railroad.....	101½ a 101½
do Cheshire railroad.....	64
do Concord railroad.....	54½ a 54½
do Vermont and Mass. railroad.....	31 a 30½
do Michigan central railroad.....	96
do Boston and Maine railroad.....	103½
do Northern railroad.....	75
do South shore railroad.....	13
do Rutland railroad.....	b 4 m 60
\$1000 Vermont and Mass railroad bonds.....	89
\$2000 Portland, Saco, and Portsmouth railroad bonds.....	100
\$4000 Rutland railroad bonds, 1853.....	90 a 90½
\$1000 do 1855.....	89
\$500 Ogdensburg railroad bonds.....	99
Fitchburg railroad.....	108½
Grand junction.....	70
Connecticut river.....	81
Vermont Central railroad bonds, 1850.....	91
Boston, Concord, and Montreal railroad bonds.....	86½

The following dividends were declared on some of the leading Massachusetts stocks, payable on the 1st instant:

RAILWAY SHARES.			
	Capital.	Dividend.	Amount.
Western railroad.....	5,500,000..	4 per ct.	200,000
Fitchburg.....	3,320,000..	4 "	132,800
Boston and Lowell.....	830,000..	4 "	73,200
Boston & Providence.....	3,160,000..	3 "	94,800
Boston & Worcester.....	4,500,000..	3½ "	157,500
Taunton branch.....	250,000..	4 "	10,000
Pittsfield & N. Adams.....	450,000..	3 "	13,500
Eastern, Mass.....	2,850,000..	4 "	114,000
Eastern, N. H.....	492,500..	4 "	19,700
P. Saco and Portsmouth.....	1,200,000..	3 "	36,000
Manchester & Lawrence in preferred stock.....	250,000..	4 "	10,000
Passumpsic.....	1,090,000..	3 "	32,700
Boston and Maine.....	4,155,700..	2 "	83,114
Michigan central.....	2,561,600..	9 "	230,554
Vermont and Canada Int.....		.8 "	6,000
Worcester & Nashua Shs 12,678 \$2½ "			28,525
Total.....			\$1,248,393

RAILWAY BONDS.	
Providence.....	\$ 6,000
Cheshire.....	31,437
Vermont central.....	23,800
Vermont and Massachusetts.....	28,000
Boston and Worcester.....	12,750
Boston and Providence.....	6,000
Sullivan.....	15,000
Grand junction.....	10,500
Old Colony.....	10,000
Dorchester and Milton.....	4,000
Michigan central.....	25,000
Rutland and Burlington.....	20,000
Total.....	\$192,487

MANUFACTURING SHARES.		
	Dividend.	
Nashua.....	3.....	30,000
Jackson.....	3.....	14,400
Appleton.....	3.....	18,000
Hamilton.....	3.....	36,000
Manchester mills.....	4.....	48,000
Cocheco.....	\$21.....	42,000
Middlesex.....	3.....	30,000
Dwight.....	3.....	21,000
Cabot.....	3.....	15,000
New England Worsted.....	4.....	18,000
Naumkeag st mills.....	3.....	20,100
Sandwich Glass Company.....	3.....	9,000

Boston and Worcester Railroad Company.—The earnings and expenditures of this company for the year ending November 30th, 1850, are as annexed:—

From passengers.....	\$393,000 00
Freight.....	332 000 00
Rents.....	10,000 00
Mails.....	10,000 00
Reserved incomes of 1849.....	8,000 00

The running expenses were..... \$753,000 00
371,452 00

Balance for dividends and reserved fund..... \$381,552 00

A semi-annual dividend of three and one half per cent has been declared, which, with the dividend of three per cent declared last July, on their capital stock of \$4,500,000, paying the interest on their bonds issued, and deducting \$10,500 for the difference between two light and old engines sold, and two new first class ones to be substituted, and providing for the renewal of twenty-two new freight cars and two platform cars, leaves a reserved income of \$57,000. The construction account will also be reduced by the sale of lands and other stock about \$40,000 on the main road, and increased about 15,000 on the Framingham branch. The accounts show an increase of over \$5,200 per month over that of last year, or a total of \$62,600 on passengers alone, with a slight increase on freight. This is over \$60,000 above the highest passenger receipts of any one year.

The Boston and Maine Railroad has just issued their report for the year ending December 1, 1850. The entire cost of the road and equipment is \$4,021,606 59—the gross receipts for the year \$594,963 45, against \$522,335, 51 for the previous year—the gross amount charged to expenses \$309,906 34 against \$329,090 61 in 1849. In 1849 the extraordinary expenses included in the foregoing, were \$53,491 19—in 1850, \$30,428 32. With this allowance, the current expenses of 1850 exceed those of 1849 by about \$13,000, while the gross receipts are more than those of 1849 by nearly \$73,000. Including ordinary and extraordinary expenses of both years, and allowing the interest paid in 1849 and charged to expenses, the net gain of 1850 is \$67,336 04. Thus the net profits of 1850 are a trifle more than 7 per cent. The loss by the fire is considered 1½ per cent, and the January dividend would have been injured by that percentage only, had it not been necessary to provide for old losses, growing out of the burning of the Dover depot, and the car shops at Lowell, and of the great collision at Medford. But two per cent was divided, for the semi-annual dividend. The loss by the late fire was \$67,151.

Below will be found a table of the number of foreign arrivals for the year ending January, 1851, together with the amount of duty paid on foreign merchandise for each year, with the exception of the last quarter of 1850, which is not yet ascertained:—

Year.	Arrivals.	Amount of Duties.
1840.....	1628.....	\$2,456,926 22
1841.....	1790.....	3,226,441 47
1842.....	1738.....	2,780,186 04
1843.....	1716.....	4,491,019 82
1844.....	2174.....	5,934,945 14
1845.....	2305.....	5,213,634 00
1846.....	2090.....	4,872,570 16
1847.....	2739.....	5,448,361 82
1848.....	3009.....	4,908,827 20
1849.....	3111.....	5,037,310 84
1850.....	2885.....	9 months 4,655,413 01

Total.....\$48,225,635 72

The amount collected will average for the past 11 years about \$4,500,000 per annum. This year, as will be seen, allowing an average estimate for the last quarter, the revenue will reach nearly six millions.

The Connecticut and Passumpsic rivers railroad company pay a dividend on the 1st January of 3 per cent., amounting to \$32,700, and notwithstanding the expenditure of about \$7,000 occasioned by the freshest last spring, they have a surplus left.

The road is now in full operation to St. Johnsbury.

The following synopsis is from the report of the Lowell railroad company:—

The receipts of the year ending Nov. 30th, were.....\$406,421 00
Expenses.....256 508 13

Net earnings.....\$149,912 87

Expended as follows:—

Dividends July and January.....\$146,400 00
Balance of interest acc't. 1,375 90
147,775 90

Surplus.....\$ 2,136 97

The balance to credit and transportation November 30, 1849, was.....159,852 81

Add surplus as above.....2,136 97

\$161,989 78

From which deduct the dividend of 4

per cent., payable January 1, 1851.. 73,200 00

Surplus.....\$ 88,789 78

As compared with the previous year, the receipts show a decrease of \$10,067. The diminution is in the receipts from merchandise generally, and from such passengers as have been carried in connection with other railroads. The loss upon the latter is attributed to the diversion of travel consequent upon the opening of the new lines, and that upon merchandise may be accounted for principally by the state of business in the several manufacturing establishments on the line of the road. The running expenses have been diminished \$4,395 54.

Sales of stocks in New York:—

U S '67 Loan.....	116½	Erie railroad.....	93½
Ill Mort Bds '47....	66	Hud Riv railroad....	85
Ind Canal, pfd.....	38	Reading railroad opg	76
Rdg Mt Bds, '70....	79	K I railroad.....	17
Rdg Bonds.....	83	Harlem railroad....	81½
Penn 5s.....	93½	Stonington railroad	56½
Erie 7s, '59.....	106½	Nor and Wor. rail-	
Erie Income.....	99	road, opg.....	68½
Erie 7s, '68.....	108½	Morris Canal.....	23½
City 5s, '70.....	106½	Albany & Schy....	97
Del & Hud Canal..	140½		

The following are the sales of the Hudson River 7 per cent bonds made to-day. They are 7 per cent., and have ten years to run, and are secured by a second mortgage:—

Bonds Sold.	Price.	Net Product.
\$214,000.....	96.....	\$205,440 00
791,000.....	96½.....	760,238 89
343,000.....	96½.....	330,137 50
52,000.....	97.....	50,440 00
80,000.....	97½.....	78,000 00
57,000.....	98½.....	55,831 25
10,000.....	98.....	9,900 00
25,000.....	98½.....	24,562 50

\$1,572,000 \$1,514,450 14

The tendency of this market is decidedly upwards, though the advance is chiefly confined to the securities of our own roads; those of companies at a distance are favorably affected (through sympathy with this movement,) but to a less extent. The rates of the first sales of western securities depend upon circumstances which have little connection with their real value. This depends very much upon the manner in which it is introduced into the market. Capital always follows public sentiment, and if a security that is favorably brought forward, happens to make a good hit, goes to the top of the ladder at a bound; while

an equally good one, for the want of same management, keeps a position from 5 to 10 per cent lower. The Ohio and Pennsylvania bonds are a good illustration of what we have said. Recent sales of these bonds have been made at 94.

The average of sales of what may be termed country securities range from 85 to 90, without deducting commissions, etc. The present is a remarkably favorable time for their negotiation, as good probably as will be seen for many years to come.

New York.

The Hudson River Railroad Company have purchased, at a cost of \$20,000, a site for a depot opposite Albany, generally known as Gibbon's Dock.

Mr. Whitney's Railroad.

An editorial notice of the article upon Whitney's railroad, by "a Western Man," is crowded out of this week's paper.

Improved Railroad Frog.

The ordinary frog on a railroad is one of the most constant sources of expense and trouble in the maintenance of way, and some of the great causes of accidents to the machinery passing over it. Wherever they occur, a violent concussion is produced, which very soon knocks off the point, and which must be replaced by a new one. Every concussion has a tendency to weaken the strength of iron; a given number being adequate to destroy its texture altogether. Every time, therefore, that a wheel or axle receives a violent blow, it becomes less able to bear the burden previously imposed upon it. In passing the frog now in common use, in addition to these evils, the flange of the wheel takes which load, and a violent strain on the axle, and wheel is produced, which eventually shows itself in the breaking of one or the other, or both. Accidents often occur, which can be traced to no immediate cause; this being spread out over a long period, and only showing itself when it has been a long time in operation.

To remedy these evils a very simple contrivance has been invented, which may be readily understood by reference to the cut annexed to the advertisement on another page. It is made by drawing out the ends of the rails, and bringing them up to the side of the frog; the extreme points of these being turned back, so as to allow the flange of the wheel to enter between them and the frog, and to shove them back, when the trains pass along. The rails being moveable the ends opposite the frog being held simply by a pin which allows lateral movement. The rails are kept in place by a spring, either of steel or India-rubber, or by a weight. They are prevented from spreading too far by a pin cast into the bed piece.

The improvement completely protects the point of the frog, which is made to last as long as the rail. It secures a continuous bearing, so with its use it is impossible to tell, from any change in the motion of the train, when the frog is passed. These great desiderata it completely secures. It is extremely simple, and has been in use nearly a year and a half on the Pennsylvania railroad, and works admirably in all weather, and under all circumstances, and has received the universal commendation of all who have witnessed its operation.

It has recently been placed on the New Jersey roads, where we have had good opportunities of seeing it tested. It is as cheap in the outset as the old frog, and we feel fully convinced that it is one

of the most valuable improvements of the day, and should be in use upon every road in the country.

AMERICAN RAILROAD JOURNAL.

Saturday, January 4, 1851.

Improved Railroad Frog.

THE Patentee of the Improved Frog now offers to Railroad Companies the use of his patent Frogs. It is now proved after eighteen months' trial to be the only perfect crossing plate in use—its operation entirely imperceptible to passengers in the cars, thereby proving the ease which it affords to the machinery—receiving no jolt, and imparting none. Its original cost is less than the steel plated clab frog, now generally used, and having the point of the V, or angle of crossing, substantially protected with a wrought iron running surface, its wear under all circumstances is as durable as the rail itself. Engineers and Superintendents of Railroads are referred to the following certificates. The Patentee is willing to repair to any railroad, and superintend the making and putting down of one or two of these Frogs as required. For further information apply to HENRY A. LANDRY, No. 3 North Front st., Philadelphia, or to S. B. Higgins, Postoffice, N. Y.

Wilmington, June 15th, 1850.

Mr. Henry A. Landry has contrived an apparatus for Frogs of a self-acting nature, which I feel great confidence will prove useful. We have laid it down on our road, and so far it answers every expectation. I would recommend its use on all important roads.

J. R. TRIMBLE.

General Sup't Philad., Wilm. & Balt. Railroad.

Philadelphia, Jan. 24th, 1850.

I have examined the Patent Safety Frog of Henry A. Landry, laid down on the Philad. and Columbia railway in September last, and now in use about four months. Its operation is simple and effective, and no perceptible wear or derangement can be discovered in the daily (if not hourly) use to which it has been subjected. I consider it a decided improvement upon the Frog Casting heretofore used, and believing that the saving in wear and tear of machinery upon a railway, will soon pay for the increased cost of the Safety Frog. I take pleasure in recommending it to the favorable notice of Engineers and Superintendents of railroads generally.

EDWARD F. GAY,
Civil Engineer.

Office of the Philad., Germantown and Norristown }
Railroad Co., Philad., June 15th, 1850. }

Mr. Henry A. Landry,

The Improved Railroad Frog put down by you upon our road some five weeks since, has thus far operated to our entire satisfaction. The cars pass over the same without the least shock or jar. It is my intention to continue their use upon the road, being persuaded their introduction generally will prove highly advantageous. Yours, etc.

WM. E. MORRIS, President.

Superintendent's Office, Philad. & Columbia R.R. }
Parkersburg, Chester Co., June 6th, 1850. }

To whom it may concern,

Mr. Henry A. Landry having put into use on the Philad. and Columbia Railroad at this place, his patent self-acting Frog, and the same having been in practical operation for nearly nine months, I take pleasure in stating that it seems to answer all the purposes for which it is designed, viz: to give an even running surface to the tread of the wheel, thus obviating the concussion incident to the Cast Iron Frog, and the necessity of running on the flange of the wheel in crossing such frogs. WM. ENGLISH,
Sup't Philad. & Columbia Railway.

Office of the N. Jersey R.R. & Transp. Co., }
November 7th, 1850. }

The Directors of the N. J. R. R. & Transp. Co., on the recommendation of the Superintendent and other officers of the company, after a sufficient trial of the Improved Patent Frog, have purchased from Henry A. Landry the right to make and use the said patent Frogs on their roads, and can recommend them to all other railroads.

J. P. JACKSON,
Vice President & Sup't N. J. R. R. & Transp. Co.

To Iron Masters.

WANTED—A Person to take charge of a Blast Furnace for Smelting Iron, for further information apply to
COLLINS, VOSE & CO.,
74 South street.

To Contractors.

BOYDTON & PETERSBURG PLANK ROAD OFFICE, }
Petersburg, Va., January 1st, 1851.

PROPOSALS will be received for the grading and planking of the Boydton and Petersburg Plank Road.

The road will be about 77 miles in length. Communications can be addressed either to myself at Sturgeonsville P. O., Brunswick County, Va., or to Mr. C. O. Sanford, the Engineer of the Company, residing in Petersburg.

The proposals will be considered at Ebenezer Academy, in Brunswick, on the 28th inst., at Jones' Tavern, in Mecklenburg, on the 30th inst., and in the city of Petersburg on the 4th of February next.

RICHARD W. FIELD, President.

The Baltimore American, Railroad Journal, N. York, Philadelphia Ledger, the Lynchburg Virginian will please copy one month.

1851.

Every person feels that the commencement of each new year is the appropriate season of retrospect. At such a time he is involuntarily forced to a review of his condition and progress in life during the period that has just elapsed, and, as a necessary consequence, of the prospects for the future.

The Journalist looks upon the year in its relation to society, and passes its events in order before him, for the purpose of determining its proper position among those which make up the great cycle of the past. At the close of those longer periods, made by the lapse of a century, or a half century, he seizes the occasion to take a broader and more general view of the period that has just closed.—In looking at the year, he sees phenomena only.—In looking back over a half century, he is able to discover their law. In the year, we place an importance upon events, somewhat in proportion to their apparent magnitude. In the retrospect of 50 years, the real only remains, the accidental has disappeared; and, removed from the excitement which attended them, we then can see the law by which they appeared and passed away. The knowledge which we thus gain of the past, we are enabled to apply to some extent to the future, and measure passing events with a greater degree of accuracy than before.

At the commencement of every preceding half century, the present may be said to have been but a copy of the past, differing only in the change resulting from the slow progress of society in the same direction. The difference has been only in degree. The same instruments and agencies were used, with a little higher degree of perfection.—The same ideas, laws and customs, prevailed, meliorated and softened, from age to age, by the gradual, but slow, progress of the race.

How is it with 1851? Is the next half century to be a copy simply of all that have preceded it, differing only in degree, and not in kind, or is it to possess features peculiar to itself, the result of new agencies and principles now in operation?

Up to the commencement of the present century, the great reason for the general uniformity to which we have adverted, was the fact, that the forces or powers which mankind made use of in the economy of life, were the same, viz: the muscular power of man and animals. The two great natural agents which had been made use of, water and air, depend in their use upon laws beyond our control. We must accommodate ourselves to them, or we cannot avail ourselves of their aid. But with steam power, the case is entirely different. Here man has a power vastly greater than that of the air or water. This power is entirely under his control. He presides at its birth. It carries to him wherever he will, with a speed exceeding that of

the swiftest bird. In its uses, it not only includes all other powers, but vastly more. Here, then, is a new power at work; and the results of the future must correspond with the magnitude of this new element. We have seen something of its influence within the past 20 years, during which time more progress has been made in the arts of life than during centuries of earlier date. But we have yet only taken the first step; we are but in the infancy of this great new movement.

Mankind has thus far lived the sport of natural laws, and has regarded with fear and awe their manifestations. The earthquake and the lightning struck terror into his soul; the former, as the consequences of impious crimes, and the other as the expression of an offended Deity. Man has now turned upon the pursuer. He has seized upon the very principles which struck him with such fear, and made them the most subservient ministers for his good. The former gives him the power of moving at the highest speed consistent with safety, the other gives him the faculty almost of omnipresence. Encouraged by these he is pressing forward to new discoveries, and his mission for the coming age seems to be to unfold the modes by which all natural laws may become the instruments of his good.

ENLARGEMENT.

The present number commences the nineteenth year and the twenty-fourth volume of the AMERICAN RAILROAD JOURNAL; and with it we add 8 pages to its former size. This addition is made necessary by the increased amount of railroad matter which crowds in upon us, from the rapidly increasing number of these works; and is justified, we are happy to say, by the increased patronage with which we have been favored.

Our increased space we shall devote to the publication of the doings of railroad companies—to the new enterprises, either in progress or projected—and to the diffusion of such information as may be useful to those engaged in their prosecution. We shall in future give a carefully prepared monetary article, giving the current prices of railroad securities—a matter in which all companies, however remote they may be from the commercial centres, are deeply interested; as almost every company is obliged to resort to loans to carry out their works. We shall not only give our opinion as to the true value of securities, but we shall in all cases endeavor to give their prices, whether disposed of at public or private sale. Most of the eastern securities are represented in our cities by parties interested in them, or in the works upon which they are based. It is an easy matter therefore to convince our capitalists of their value. But the case is different with western securities. These are as good as far as safety is concerned, as those made in Massachusetts or New York. If a particular credit sells high, this is an important fact toward creating a confidence in them. If sold far below their value the publication of this will be sure to turn public attention as to its cause; and this inquiry cannot fail to do good, as it will show in nine cases in ten that they were sold much too low.

What western securities need, is that public attention should be called to them. As soon as this can be done they will reach that relative position to which their real value entitles them.

With our increased size we hope to add materially to the usefulness of our paper. We also hope to receive equal encouragement in an increased amount of patronage.

Railroads in 1851.

As railroads are the product of the present age, and the great fact of modern times, the close of the first half of the present century suggests itself as a proper time to take a brief review of their first introduction, their progress, and the extent to which their construction has been carried. In doing this, our space will not allow us to go beyond the limits of statistical information, though this is by far the least interesting part of their history.

England, as might be expected, from her superior wealth and experience, preceded us a few years in the construction of railroads; and as our works were not commenced until experiments there had enabled that country to obtain some degree of perfection, and had given to these enterprises the same general features which now distinguish them at the present day, a brief notice of the first steps in relation to this great movement in England, will enable us better to understand and trace their progress in the United States.

The idea of a railroad was taken from the rude tram roads, (which consisted chiefly of longitudinal wooden sleepers,) and were used to convey coal from the pit's mouths to the place of shipment.—The saving effected by these over the ordinary road led to their more extensive use. To protect the wood, these were sometimes covered with flat pieces or bars of iron; these were for a long time confined to the transportation of coal, and were used only in the neighborhood of New Castle, and were exclusively worked by horses.

The first iron railway ever laid down, to the extent of twenty-five miles, was the Stockton and Darlington line, which was opened on the 27th of September, 1825. It was worked by locomotives, stationary engines, and horses. Owing to the inefficient condition of the locomotive power, the company had all but determined to abandon steam in favor of horses, when the superintendent of the road, Timothy Hackworth, offered to construct an engine adapted to the business of the line; this offer was accepted, and the engine built, the boiler of which was a plain cylinder, 13 feet in length, and 4 feet 4 inches in diameter. The heating surface was obtained from a double tube of malleable iron, in the form of the letter U, traversing the whole length of the boiler. One side of this tube was made available for the fire grate; and the heated vapor being passed through it, was returned by the opposite one to the chimney, which was actually a vertical continuation of this end. With this contrivance the engine had a heating surface double that of any other engine of its time. She was carried on six 4-foot wheels, four of them being spring mounted, and was the earliest of the six-wheel coupled class. The cylinders, 11 inches diameter, and 20 inches stroke, were placed vertically at what is now the smoke box end of the engine, and worked directly upon the first pair of wheels. At the same end was attached a malleable iron cistern, into which the water passed from the tank, previous to being introduced into the boiler, the driver having the power of regulating the supply; and a pipe from the steam exhaust was led into the cistern, for the purpose of admitting steam at pleasure, to heat the water. Another pipe was provided for the purpose of leading off a steam jet from the exhaust pipe at the chimney end, for discharge beneath the grate, the intention being to facilitate combustion.

In addition to its being the original of a class of engines now so universal, this engine was the first which had a blast pipe fitted to it, the whole of the exhaust steam—excepting only such a portion as

was required for the purposes before alluded to—being conveyed into the centre of the chimney, and there thrown out in a jet from a conical pipe. She commenced working in October, 1827.

The cost of this engine was £425; number of tons conveyed by her in one year [1828] 22,442 tons over twenty miles; cost of conveyance, 4d per ton per mile, or, including all repairs and maintenance, showing a difference of £532 in favor of this engine, over animal power.

These results at once decided the point against the use of horses, which up to that time were regarded as cheapest. This engine was the first ever constructed that proved the decided superiority of steam over animal power as a motive force, and may properly be regarded as the germ of, though in appearance it bore but slight resemblance to the highly finished machines now in use; the results of the use of this engine, proving its superiority over animal power, were by no means regarded as superior to all other contrivances for moving railroad trains. It narrowed the question however to the only two modes left; locomotive and stationary power being the only systems available for use.

In the early part of the year 1829, the Liverpool and Manchester railroad approached its completion, and the directors feeling themselves called upon to determine the kind of power they would make use of, appointed two engineers, Mr. Rastrick and Mr. Walker, to visit the Stockton and Darlington railroad, and report to them the most suitable power to be used. These men, after making a full investigation of the matter, reported in favor of stationary engines. This report, as is well known, was unsatisfactory to the company, and they came to the conclusion to offer a premium of £500 for the construction of an engine that would fulfil certain conditions. Four engines were entered for the prize, the "Novelty," by Braithwaite & Ericsson; the "Rocket," by George Stephenson, the "Sanspareil," by Timothy Hackworth, and the "Perseverance," by Mr. Burstall. The results were highly satisfactory, and were far superior to anything that had yet been realized; the company at once determined in favor of locomotive engines, and from that period they were universally used except upon inclined planes. From that time the whole problem of the efficiency and usefulness of railroads was considered as settled, and their subsequent construction has gone forward in every civilized country as fast as means could be obtained, or as people could be made to realize their great value. England at once embarked in their construction with great zeal and energy, and she now presents the greatest extent of line of any country in the world, and by far the most splendid and magnificent public works in connection with them.

The first railroads constructed in the United States were the Quincy railroad in Massachusetts, designed for the transportation of granite, and the Mauch Chunk railroad in Pennsylvania, a coal road. Both of these were opened in 1827, and they bore pretty much the same relation to the railroad system of this country as did the tram roads of which we have spoken, to the English railroads.—The first roads of any considerable magnitude opened in this country was the Baltimore and Ohio, which was chartered in 1827, commenced July 4th, 1828, and opened for a short distance in 1830. In December, 1831, it was opened for a distance of 60 miles; and the only roads in addition to the above in operation on the first day of January, 1832, were the Charleston and Hamburg railroad, (as it was

then called) for a distance of twenty miles, the Albany and Schenectady for a distance of 12 miles, making the whole extent in use 18 years ago 107 miles. To show the whole extent of line in operation, in progress, and in project on the first day of January, 1832, we copy the following from the Railroad Journal bearing date January 2, 1832:—

Baltimore and Ohio—whole length 250 miles—60 miles completed and in use.
Albany and Schenectady—16 miles in length—12 miles in use.
Charleston and Hamburg—135 miles in length—about 20 miles completed, upon which the U. S. mail is carried.
Mauch Chunk, completed and in use, 9 miles.
Quincy, near Boston, now in use, 6 miles.
Ithaca and Oswego, 25 miles.
Lexington and Ohio, 73 miles.
Camden and Amboy, 50 miles.
Lackawanna, 16 miles.

Lines in Progress.

Massachusetts, from Boston to Hudson river... 200
Ithaca to Catskill..... 167
Boston to Brattleboro..... 114
Columbia, from Philadelphia to Little York... 96
Baltimore and Susquehanna..... 48
Boston and Providence..... 43
Frankston and Johnston on the Alleghany..... 40
Baltimore and Washington City..... 38
Hudson and Berkshire..... 25
Frenchtown and Newcastle..... 16
Harlem..... 6
Richmond and Chesterfield..... 12
New Orleans..... 6
York and Maryland, distance not known.
Tusculum, "
Philadelphia and Norristown "
" and Chester, "
" and Delaware, "
Elizabethtown and Somerville railroad in New Jersey.

These projects were followed by a very large number in every part of the country; the success of the few first attempts, at once aroused the attention of the whole people to their importance, and a great number of lines were commenced, some of which are still unfinished, and many of them abandoned, after the expenditure large sums of money. Without having space at this time to present a detailed account of the progress of the several roads, we have prepared the following table, showing the extent to which these had been multiplied from the first commencement up to the year 1840, with the date of their openings; these are compiled from sources which were regarded as fully reliable at that time. It will be seen, however, that many lines which were then stated to be in operation have since been abandoned.

RAILROADS COMPLETED AND IN PROGRESS IN THE STATE OF PENNSYLVANIA.

Name of railroad.	Opened.	Miles.	Total length of road.
Philadelphia & Columbia.....	1834	82	82
Alleghany Portage.....	1834	36½	36½
West Chester.....	1834	9	9
Valley.....			20½
Phild'a., Germantown and Norristown.....	1837	20½	20½
Philadelphia & Reading.....	1839	54½	102
Philadelphia & Trenton.....	1833	30	30
Philad. & Wilmington.....		28	28
Harrisburgh & Lancaster.....	1837	36	36
Cumberland Valley.....		46	46
Franklin.....	1839	10½	24
York and Wrightsville.....			13
Mauch Chunk.....	1827	9	9
Room Run.....	1833	5	5
Beaver Meadow.....	1836	26	26
Hazleton Branch.....	1838	10	10
Sugar Loaf Summit.....	1839	2	4
Buck Mountain to Lehigh.....			4½
Susquehanna & Lehigh.....			20½

Little Schuylkill.....	1831	23	29
Little Schuyl. and Sus.....			39
Beaver Meadow Extension.....			12
Schuylkill Valley.....	1830	10	10
Mill Creek.....	1830	6	6
Branches to both.....		12	12
Mount Carbon.....	1831	7	7
West Branch.....	1831	18	18
Pottsville and Danville.....	1838	29½	42½
Williamsport & Elmira.....	1839	25	67
Blossburgh & Corning.....			25½
Carbondale.....	1829	16½	16½
Pine Grove.....	1830	4	4
Lykens Valley.....	1830	16½	16½
Bear Creek			
to Coal Mines.....			4
West Philadelphia			
to river Schuylkill.....			10
Philadelphia.....		6	6

RAILROADS COMPLETED AND IN PROGRESS IN VIRGINIA, NORTH AND SOUTH CAROLINA, GEORGIA AND FLORIDA.

Name of railroad.	Opened.	Miles.	Total length of road.
Richmond, Fredericksburg, and Potomac.....	1837	61½	75½
Richmond and Petersburg.....	1838	22½	22½
Louisa.....	1838	35	49
Richmond and Coal Mines.....		12	12
Chesterfield.....	1831	13	13
Petersburg and Roanoke.....	1833	60	60
City Point.....	1838	9	9
Greensville and Roanoke.....	1838	17½	17½
Portsmouth and Roanoke.....	1837	78½	78½
Winchester and Potomac.....	1836	32	32
Experimental.....	1833	1½	1½
Raleigh and Gaston.....	1840	84½	84½
Wilmington and Raleigh.....	1840	161½	161½
Charleston and Hamburg.....	1833	136	136
Louisville, Cincinnati, and Charleston.....			66
Georgia.....	1839	87½	211½
Central.....	1840	100½	193
Monroe.....	1839	24	96
Western and Atlantic.....			140
Tallahassee.....	1837	22	24
St. Joseph & Lake Wimico.....	1836	8	8
St. Joseph and Iola.....	1839	28	28
Alabama, Florida, and Ga.....			56½
Total.....		994	1675½

† These distances stated as opened was completed in 1840.

RAILROADS COMPLETED AND IN PROGRESS IN THE EASTERN STATES.

Name of railroad.	Opened.	Miles.	Total length of road.
Bangor and Orono.....	1836	10	10
Nashua and Lowell.....	1838	14½	14½
Boston and Lowell.....	1835	26	26
Charlestown Branch.....	1839	1½	1½
Boston and Portland.....	1839	34½	34½
Quincy.....	1827	4	4
Eastern (in Mass.).....	1839	25	37½
Eastern (in N. H.).....			15
Marblehead Branch.....	1839	3	3
Boston and Worcester.....	1835	44½	44½
Milbury Branch.....		3½	3½
Western.....	1839	54½	117
Boston and Providence.....	1835	42	42
Dedham Branch.....		3	3
Taunton Branch.....	1836	11	11
N. Bedford and Taunton.....			20
N. Y. Prov. and Boston.....	1837	47½	47½
Norwich and Worcester.....	1839	59	59
Hartford and N. Haven.....	1838	18	38
Housatonic.....	1839	35	73
Total.....		436	604

RAILROADS COMPLETED AND IN PROGRESS IN ALABAMA, LOUISIANA, MISSISSIPPI, TENNESSEE, AND KENTUCKY.

Name of railroad.	Opened.	Miles.	Total length of road.
Montgomery & West Point.....			85
Wetumpka and Coosa.....			56
Selma and Tennessee.....			170

Cahawha and Marion.....			27
Linden and Demopolis.....			22
Mobile and Cedar Point.....	1837	5	26½
Tusculum, Courtland, and Decatur.....		46	46
Pontchartrain.....	1831	4½	4½
N. Orleans and Nashville.....	1839	22½	88½
Bath.....	1837	1½	6
Carrollton.....	1837	7½	7½
Orleans Street.....		1½	1½
Lake Borgne.....	1838	5	23
Alexandria and Chenerville.....	1839	6	30
Baton Rouge and Clinton.....			30
Clinton and Port Hudson.....	1839	14	28
West Feliciana *.....			28
Mississippi.....	1839	25	140
Vicksburg and Jackson.....	1839	25	45
Jackson and Brandon.....			12
Raymond.....			6
Grand Gulf and Ft. Gibson.....			7½
Hiwassee.....			97
Lagrange and Memphis.....			50
Somerville Branch.....			13½
Lexington and Ohio.....	1835	30½	94½
Portage.....	1837	1½	1½
Total.....		195	1148½

* 7 1-2 miles of this railroad are in the State of Mississippi.

RAILROADS COMPLETED AND IN PROGRESS IN THE STATES OF OHIO, INDIANA, MICHIGAN, AND ILLINOIS.

Name of railroad.	Opened.	Miles.	Total length of road.
Mad River and Lake Erie.....	1835	15	130
Little Miami.....			85
Monroeville and Sandusky.....	1838	15	15
Cleveland & Newburg city.....	1838	6	6
Fairport and Painesville.....	1838	3	3
Ohio.....			177
Madison and Indianapolis.....	1839	20	90
Buffalo and Mississippi.....			156
Erie and Kalamazoo *.....	1836	33	33
Palmyra and Jacksonburg.....	1838	11	46
River Raisin and Lake Erie.....	1838	4	4
Detroit and Pontiac.....	1839	18	25
Shelby and Detroit.....	1839	10	17
Ypsilanti and Tecumseh.....			24
Detroit and Maumee.....			3
Central †.....	1839	36	196
Southern †.....			189
Northern †.....			101½
Central.....			450
Northern Cross.....	1839	16	230
Peoria and Warsaw.....			116
Bloomington and Mackinaw.....			36½
Southern Cross.....			147
Alton and Shawneetown.....			145
Alton and Shelbyville.....			108
Central Branch.....			71½
Rushville and Erie.....			10
New Pittsburg and Miss.....	1835	7	7
Galena and Chicago Union†			100
Total.....		196	2821½

RAILROADS COMPLETED OR IN PROGRESS IN NEW JERSEY, DELAWARE, AND MARYLAND.

Name of railroad.	Opened.	Miles.	Total length of road.
New Jersey.....	1836	34	34
Paterson and Hudson.....	1834	14	14
Morris and Essex.....	1837	23	23
Elizabeth and Somerville.....	1840	22	26
Camden and Amboy.....	1835	61	61
Camden and Amboy Branch.....	1839	31	30
Camden and Woodbury.....	1833	7	7
Newcastle and Frenchtown.....	1832	16	16
Wilmington and Susq.....	1837	34	34
Baltimore and Port Deposit.....	1837	36	36
Baltimore and Ohio.....	1834	85	435
Washington Branch.....	1835	30½	30½
Baltimore and Susq.....	1838	58	58
Westminster Branch.....	1832	10	18
Baltimore and Annapolis.....	1840	19½	19½
Eastern shore.....			118
Total.....		480½	961½

Name of State.	No. of railroads.	No. of miles in operation.	Total length of railroads.
Maine.....	1	10	10
New Hamp. 1		14½	29½
Mass.....	14	270½	365½
R. Island... 1		47½	47½
Connecticut. 3		94	159
New York... 28		453½	1317½
Pennsylvania. 38		576½	850½
New Jersey. 7		192	196
Delaware... 1		16	16
Maryland... 8		273½	749½
Virginia... 10		341	369
N. Carolina. 3		247	247
S. Carolina. 2		136	202
Georgia..... 4		211½	640½
Florida..... 4		58½	217
Alabama... 7		51	432½
Louisiana... 10		62	248½
Mississippi. 5		50	210½
Tennessee... 3		0	160½
Kentucky... 2		32	96
Ohio..... 6		39	416
Indiana..... 2		20	246
Michigan... 10		114	738½
Illinois..... 11		23	1421
Total, 181		3332½	9378½

To be continued.

S. M. FELTON, Esq., has accepted the appointment of President of the Philadelphia Wilmington and Baltimore Railroad, with a salary of \$5,000 per annum, and resigned the charge of the Fitchburg Railroad. L. Tilton, Esq., present Superintendent of the Cheshire, succeeds Mr. Felton on the Fitchburg.

Railroad Iron for Sale.

THE Mansfield and Sandusky City Railroad Co. have on hand from twelve to fifteen hundred tons of American Flat Bar Railroad Iron, weighing 38 lbs. to the lineal yard, which they offer for sale at reasonable rates.

The iron has been in use about four years, and is sound and in good condition. It is 2½ by ½.

It will be ready for delivery at short intervals between the opening of navigation in the spring and the 1st September next.

For further particulars inquire at the office of the company at Sandusky City, Ohio.

C. G. FORBES, President.
December 24, 1850.

Railroad to the Pacific.

Sir—I have read in your Journal of Dec. 14, the communication on the subject of a railroad to the Pacific by a "Subscriber" dated at St. Louis, Dec. 1, 1850.

I should not notice his remarks, or ask you to give place in your valuable journal to what I shall write, had I not devoted much time, and with all the sources of information before me, to a thorough examination of the whole subject, as I think in all its bearings, and were it not obvious that your "Subscriber" does not understand the subject on which he writes, at least so far as relates to Mr. Whitney's particular plan, and although such may not be his object, he is nevertheless leading the public mind into a cloud of darkness which can have no result, or tendency even, but to defeat any and every plan for a railroad to the Pacific.

First, it is not a fact that Mr. Whitney, for himself nor his many friends for him, have ever claimed "a patent right to enrichment by it"—On the contrary, Mr. Whitney claims no "patent right" and has so declared all over the country. He has tendered his whole efforts of body and mind to his country for the accomplishment of this great work, and he has done so at his own expense and own risk; he claims nothing for it and has published to the world "that if he accomplishes the work the country may give him anything or nothing;" he asks only to be the instrument and he has further published to the world that,

"My plan has become the foundation for others to attempt to build upon; but all the supposed improvements, yes, and more too, have been examined by me, and discussed with others, long ago, and thought to be not feasible.

I have but one motive, or object, and that is, to see this great work successfully accomplished, which would be a sufficient reward for my labors; and if there can be found a better plan, or a man whom the nation may think better qualified, then I am ready to support that plan, or sustain that man with my efforts, and all the information which my seven years' labors have gathered together, and the reward will be sufficient in believing that I have been the instrument in bringing this great subject to the favorable consideration of my fellow-citizens.

ASA WHITNEY."

New York, May 1, 1849.

And is this claiming "a patent right to enrichment?"

But there has been no other plan submitted which on examination by Committees in Congress has been found to be feasible, or which could obtain its sanction. Your "Subscriber" admits this, and should this fact not be considered conclusive evidence in favor of Mr. Whitney's plan?

Mr. Whitney has devoted the very best part of his life to bringing this great subject before, and urging it upon, the consideration of the people. He commenced it alone and has brought it to its present position alone. He has submitted to the scoffs and sneers of the many very wise persons who are now seeking to find some mode to evade his plan, defraud him of his just deserts, and benefit themselves, always too on the very principles upon which his plan was founded in its origin.

Secondly, your subscriber does not deny that Mr. Whitney is "the father of the project." But the man who had the capacity of mind to originate the project, the industry and patience to mature it in all its details, the boldness and character to bring it before the world, and the perseverance and energy to withstand and overthrow the doubts and fears as well as the scoffs and ridicule of, I may say, the world,—the man who has examined in person a large distance of the country through which his great work will pass, has ascertained himself where the streams can all be bridged, and also ascertained where materials, timber, &c., can be had as well for the road as for the necessary wants for settlements, where they do not exist—the man who has visited all the most important commercial parts and places of the Globe to ascertain the position and condition of the people with their commercial capacities and statistics, who has arranged a geographical, political and commercial division of the Globe, which exhibits the position, condition and wants of the entire human family, connected with and upon which is based the conception of his great project, the grand object of which is to change the condition, as his arrangement shows the relative position, of the entire human family: but no, this is not the man to execute his own great designs!

Thirdly, if your "Subscriber" had read the bill reported by the Committees of each House of Congress, he might have saved himself much trouble, as he would there have seen that it is fully "explained in detail in regard to the sale of the lands." They are sold to Mr. Whitney by the Government, under such enactments and restrictions as will secure the payment of the sums stipulated, and also guarantee the construction of the road by him as an individual enterprise, he vending the lands to actual settlers who receive their titles directly from the Government and not from him, after he shall have completed sections of the road in advance—

that is, as he shall complete sections of ten miles each, for 800 miles he is permitted to sell (not to take) one half of the land on the line of each section so completed say 5 miles by 60, from which his expenditures for the ten miles of road before completed would be reimbursed, but the other half would be reserved as a fund to meet his outlay after the first 800 miles and when the lands may be too poor for settlement. Thus the lands are sold to him by the Government and when after conforming to the conditions of the bill he will re-sell them to reimburse for his outlay. The ten miles of road to be constructed as the bill stipulates will cost \$20,000 per mile or \$200,000; the 5 miles by 60 of land which he can thus sell would be 192,000 acres, for which, as the lands are now being disposed of, the treasury would receive no benefit, and can now be purchased in soldiers bounties to the amount of millions of acres for 65 cents per acre, would amount to but \$124,800. But Mr. Whitney takes upon himself the risk with his own efforts and means, in building the road in advance, to raise the value of this 192,000 acres from what it can now be purchased for, say \$124,800, to his outlay of \$200,000, and if he cannot enhance its value to beyond that sum then it is clear that he cannot gain anything by the enterprise. But he may gain something, and the plan may succeed, and stupendous results may be accomplished, worth hundreds of millions of dollars to our nation and of vast benefits to all mankind. Here seems to be the grand difficulty, not that the plan will not, but that it may succeed, and an individual, a single individual, who can never under any circumstances have but one vote in the affairs of the nation, and no more political power or influence than the humblest individual in all the land, devotes the best energies of body and mind at his own expense, offers to take upon himself the entire risk of success, asks not a dollar from the treasury, and promises to accomplish for the nation a work in its magnitude far before that of any other age, and in its results far beyond the power of human calculation to estimate.—But he may gain wealth or popularity by its success. No, no, it will never do: it must not be said that there is no man in all the land wise enough to make a better plan, and if there is no such man, as Mr. Whitney has already given us the grand principle to work upon, we must divide it up into a stock-jobbing concern; decidedly better to not have the road than that Mr. Whitney should gain so much by it! But six years have rolled away since the plan was first presented to Congress and Mr. Whitney is stronger and stronger every day, because no plan has been found that can supersede his.

Fourthly, it is obvious that your "Subscriber" does not understand what he is writing about, for he talks of "the distribution of stock," &c.—Now it is a well known fact that Mr. Whitney's plan does not propose any stock and his road is not to earn any dividends. It is to be a free road for the commerce of all the world, with no charges except for the necessary expenses of operation and repairs, and here is no doubt another grand cause for objections, and the reason why "business men and railroad men have generally gone against it." Yes, and others may be added. stock jobbers and speculators, as there is to be no stock and no dividends it is not the field for them, but arrange it so as to put a hundred millions of stock into the market, with the lands, or the Government pledged for the interest and its redemption, and that would be the popular scheme in certain quarters. If Mr.

Whitney would form his plan to this "course he might obtain what he has not now, the confidence and support of the railroad interests." But Mr. Whitney is not seeking to propitiate such interests particularly; it is other and far more important interests he is laboring for. His aim is to make a great highway for the laboring man, and means of cheap transport for the products of his labor to the markets of the world, and return assure and ample reward for the labor—to give him a home and plenty, and elevate his condition.

Mr. Whitney's plan offers no inducement to the speculator, he seeks no subscribers to stock, and is not compelled to satisfy the capitalist that his subscription would be a profitable investment. His is to be the poor man's road to comfort and affluence—it will create its own means for its construction, and add so much capital to the nation as the work may cost, therefore, is no "withdrawal from other business," and here again your "Subscriber" does not understand Mr. Whitney's plan.

Fifthly, Your "Subscriber" is in error again, else he attempts to mislead the public mind, for it is a well known fact all over the country that legislators have gone for Mr. Whitney's "particular mode of accomplishing it," and their resolutions expressly so declare and in most cases condemning other plans. Their resolutions, which were adopted by a unanimity without a parallel in legislative bodies, are now in the possession of the committees to whom referred in each House of Congress, and have been published with their reports.

Sixthly, your "Subscriber" is again in error in supposing that "Mr. Whitney's scheme leaves the public too much in the dark." No subject has ever before been so generally and so strongly recommended to the speedy action of Congress, by Legislative bodies, by public meetings, and by the Press. I now have before me the leading and standard periodicals of the country, "Hunt's Merchants Magazine," the "Whig Review," "De Bow's Southern Review," and "the Democratic Review," all urging the adoption of Mr. Whitney's as the only feasible plan, and so with the Press almost universally. But there are sections of the country who "are in the dark to Mr. Whitney's scheme" because his proposed starting point does not suit their particular interests. There are St. Louis, Memphis and Illinois all desiring to control it and make all east tributary to them, and subject to transshipments and ferrage besides, which would defeat the great object of the work. But neither of them can have their way except from a direct appropriation from the treasury for a Government work, which the committees would not recommend, nor would Congress adopt it, and this again puts an end to the whole matter and brings it all back upon Mr. Whitney's as the only plan which can be sanctioned either by a committee or by Congress. St. Louis has had her convention, Memphis has also had hers, and Illinois has spoken out, and what is the result? Why they must each look to the Government—to the public treasury—a forlorn hope.—But what say the people of that great basin? The press of Tennessee say, that Mr. Whitney's is the only feasible and constitutional plan, and the people publicly assembled at Louisville, at Cincinnati, at Indianapolis, at Dayton, at Columbus, and at Zanesville, all say, "there is no plan but that of Mr. Whitney which is feasible or which they can sanction." And all this immediately following the two conventions at St. Louis and Memphis. Will your "Subscriber" say there

is a cloud over all these people? Your "Subscriber" writes from St. Louis, and may it not be that he may be looking from under a cloud? He says, "if the road should be commenced as proposed by Mr. Whitney the citizens of Missouri will claim the privilege of making a branch to it." And he may rest assured that nobody will deny to them what cannot be prevented. Mr. Whitney's will be a *free road* and all sections of the country can build branches to it, and as many as they may please and have the free use of it besides. If your "Subscriber" did not look from under a cloud he might have already seen that Baltimore, Philadelphia, New York, and Boston are pushing on as fast as possible to Galena with which they will each have a direct railroad communication within two years, and from Galena to the point where Mr. Whitney proposes to bridge the Mississippi is about forty miles. And when your "Subscriber" comes out into the light, he may see that Baltimore even with a railroad as far as Galena on her direct route to the Pacific, would not be likely to go South and out of her way 300 miles, and besides pay transshipments and ferriage, expressly to accommodate St. Louis. No, St. Louis must do as all east will do, build to Mr. Whitney's road, and then receive her full share of its vast benefits. She ought not to expect or ask more.

And finally, your "Subscriber" admits that it is necessary to have a railroad built to the Pacific—that it must and will be done—that it is feasible and will pay, and proposes the lands as a basis for means, so much of, and for Mr. Whitney's plan, but the lands must be a security for a stock, which would not only secure the stockholder from loss but make for him a circulating medium on which he would no doubt receive interest besides dividends from the earnings of the road. This would be truly a magnificent scheme and a good foundation for a National Bank. The stock could be both capital and circulation, and if Congress will give him a Charter he will no doubt be ready for operations on a large scale!

A WESTERN MAN.

Maryland.

Baltimore and Ohio Railroad.—We copied not long since from the Baltimore Patriot a minute description of the above work from Cumberland and Savage River; we now continue this account of the line from that point to Wheeling.

At the Savage River the railroad has reached a distance of 30 miles from Cumberland, and an elevation of about 1000 feet above Baltimore tidewater. The Potomac valley (which has been availed of to this point,) is obviously thus far the route indicated by nature for this work—for the longest water-course (where the direction serves) almost invariably affords the greatest facilities for penetrating a succession of mountain ridges. So also, in the Glade country above it is apparent that the location of a railroad line is a matter of ready determination. The problem then is to cross the Alleghany Backbone ridge, and to connect the location of two lines over an intermediate space of 15 miles, opposing a difference of elevation of 1600 feet; and this by a grade of ascent and limit of curvature not beyond what the successful working of a railroad requires.

As far back as 1837, an instrumental survey of this section of the route had been made under the direction of Mr. Latrobe, then engineer of location and construction, and now chief engineer of the company. The grade then used was 66 feet per mile, but the line was very circuitous crooked and expensive. In 1843 further examinations of the ground were made by the same gentleman, and a direct line up the Savage and Crabtree valleys recommended by him, upon which line, when instrumentally surveyed in 1847, a grade averaging

116 feet per mile for 11 miles, and about 100 feet per mile for 4 miles, was found to be necessary. By this line a saving of 10 miles of distance and a heavy amount of expense in construction was saved, in comparison of the route of 1837, and upon the fullest consideration, after an extensive system of additional surveys of various other lines with grades of 80 feet per mile, the engineers called into consultation with Mr. Latrobe concurred in recommending the line suggested by him and upon which the road is now being made.

It will be observed that in the years 1836, & '39 a thorough set of surveys of routes crossing the Alleghany mountains in the direction of Pittsburgh had been made, under Mr. Latrobe's direction, by the several parties of engineers commanded by Messrs. Swann, Hazlehurst, Morris, Steele and Lee, assistant engineers. These routes were of necessity abandoned, for reasons which need not be detailed.

In leaving the Potomac, which it here crosses from Virginia into Maryland, the road is carried along a spur of the Great Backbone mountain, and in one half mile of light work is running parallel with the course of Savage river and at a level about 10 feet above its water. The road is here upon the North East flank of the spur of the mountain, just mentioned and ascends with an average of rise 2 1/5 feet in the 100, varying slightly according as the line lies, in curve or tangent—a grade practicable to locomotives at any season and under all contingencies, as has been fully tested, upon the heavier grades of one of the railroads from the vicinity of Frostburgh to Cumberland. The graduation as far as Crabtree, with the exception of one tunnel and a few small thorough cuts, is hillside cutting, the excavated material making the embankment. The tunnel referred to is upon the 32nd section, through a secondary spur jutting out at right angles from the main spur.

This tunnel, though a short one the tunnel excavation but 300 feet and the cuts leading to it 400 more, is noticeable on account of its going through, the hill—the road upon a curve of 600 feet radius than which there are none more abrupt upon the line. It is also an example of the frequent demand in the prosecution of work of this magnitude, upon all the resources of engineering knowledge. At the offset, the only insight the engineer has of what he is to encounter, is a geological surmise that his rock work is to be in the secondary sandstone, which immediately underlies the lower coal measures—for he has perceived indications of such a ledge for several miles below rising with a pitch about that of the grade. But the first cutting discloses the fact that this road enters the hill a little below the upper surface of this ledge, and that the body of the tunnel chamber is to run through an easily excavated stratum of indurated fire clay, surmounted by a vein of coal, and that again by a second ledge of apparently compact sandstone. The original dimensions of the tunnel were 24 feet width and 22 height to the crown; but with the prospect of a natural roof, at from 36 to 30 feet above the road, the height first designated is changed to correspond. The excavation continued, untowardly discloses the fact that his roof is not perfectly sound, seams running traversely across so as to threaten the security of the work. Upon very careful personal inspection of the place, he again changes his plans, directing the arching of the tunnel; and there being an excess of height, and as he desires to economize both excavation and masonry, he decides upon a parabolic section for the vaulting walls; and still unwilling not to avail himself, in some way, of the natural roof, hits upon the expedient of notching his two segments into the ledge above, converting the rock into one continuous key-stone. But uncertain as yet, as to whether the upper ledge runs on at the proper pitch, and with sufficient soundness to answer the proposed end, he orders an experiment drift (or gallery) to be at once pushed through the hill, to determine his final course. This is done but the result shows that the ledge rises beyond anticipation, and at the western end, has reached a height and is in a condition to present serious obstacles to keying into the rock. The whole plan is again changed; and the tunnel is to receive throughout a gothic arch of rubble masonry, starting from a bench of solid rock, seven feet above grade. Such is the present design;—and this tunnel, with its responsibilities, is but one of

several of the line. Notwithstanding the variety of delays alluded to, the work is being pushed on by a day and night force, under the supervision of Mr. S. T. Shipley, resident engineer, at a rate to insure its being prepared by spring for the passage of cars.

A few hundred yards above the tunnel, the road will probably receive a track from the valuable coal lands on the opposite side of Savage owned by the George's Creek Mining Company. This track is to run down the mountain side, and crossing the river ascend again to the Baltimore and Ohio railroad, a reconnaissance having determined that both the ascent and descent may be accomplished in three miles with a 200 feet grade. A particular mention is made of this case to show with what facility, in spite of the roughness of the country, connections may be made, with almost any point, with the main trunk.—This track together with the locomotive track projected by the same company from their works at Lonaconing, eight miles up George's Creek to intersect the Baltimore and Ohio railroad at Westernpoint, is in charge of Mr. Wm. H. Smith, engineer and superintendent of the company, and an *cleve* of the Baltimore and Ohio engineer corps.

From the tunnel onwards, the lines of stratification rise faster than the road grade, throwing out two miles on, a rock formation, styled by the workmen "bastard limestone"—probably an imperfect limestone, still of the secondary series, though low down. In the whole of the hill-side excavation, there is exposed to the geological examination a profile of one of the most interesting mineral regions on the continent. And considering the extent of country traversed from Baltimore to Wheeling, and the different formations touched upon—from the primary on the Patapsco and the secondary in the mountains, to the alluvial deposits beyond, a scientific exploration along the road would be an analysis of the geology of the region.

A few hundred yards on the road reaches the junction of Crabtree Creek with the Savage River and here about 175 feet above the river—the road having gained in five miles more than 100 feet over the rise of the bed of the stream. The scenery in this vicinity growing wilder as the road penetrates the fastnesses of mountains, has at this point reached the acme of picturesque beauty which transcends the power of pencil and canvass to convey to the eye a realizing impression of what is elsewhere. It would defy the combined excellence of Rosa and Gaspard Poussin—the one in his "savage wildness," the other with his exquisite arrangement of landscape details—to portray, after months labor in artificial composition the view which here greets an instant's *coup d'œil*. Enclosed itself by its mountain walls, the Savage valley diverges into three prongs—recesses they seem, until retreating back the indentations merge themselves imperceptibly into the mountain mass behind—to the Northward, still the Savage winding its lonely way down from above Frostburgh; then a little west, the valley of Monroe's Run, and then due west, and much the most distinctly marked, that of Crabtree. Climbing now, [and a tug it is,] the point of the Great Savage mountain, which comes down from the north-eastward—ascending this to a height not less than 1000 feet above the stream, you may meet a long barrier of rock itself 50 feet high perpendicularly; and clambering up this again, you are rewarded with a view of surpassing splendor. Looking over to south east, as your eye peers above the ledge, you have glimpses of the Potomac gorge as far down as New Creek, bounded in the distance by the serrated line of Knobly; fairly on the rock and turning to the south, the vision returns to the retina a sea of mountains upon mountains, undulating like billows and like them still distinguishable from one another in nothing but the greater or less depth of their cerulean tints as the approach or fade away into the azure of the horizon. To the westward you recognize in the Great Backbone, the continuation of the mountain in which you stand; then to the right of the Crabtree valley on to the summit gap through which the railroad passes, and still further the Glade hills. Lastly, to the north and west, across Crabtree and Savage, there are the knobs of the little Backbone, and beyond, the dark relief of the tall Meadow Mountain. The first of

these ranges reunites with the Great Savage a few miles over the Pennsylvania line, where the main chain continues its north-easterly course though at a less altitude. The highest point of the Maryland Alleghanies may be assumed at least from 3200 to 3300 feet above the sea; for the railroad levels have been carried up to a point at the Ryan's Glade Summit 3098 feet, and from this point there are in sight knobs 150 to 200 feet higher.

The axis of direction of the Backbone crosses Savage River [which, by the by is a river rather by courtesy than fact,] at the mouth of Crabtree; and this line would seem to be the western limit of the coal basin, for few if any traces of coal are detected beyond. Here also if our geologists are not at fault, the Savage River, (in ages past, no doubt, when the "oldest inhabitant" existed not to gain-say the fact) broke through the mountain barrier.—Whatever be the foundation of this bold hypothesis there are indisputable marks of the violent action of the water all along the mountainsides: huge masses of sandstone rock torn up and strewn around in strange confusion, boulders which seem to have been brought from a distance and here deposited, and other signs which carry the conviction that something has occurred sometime much out of the ordinary run of occurrences. The Crabtree country is still in a primitive state. Some half a dozen families in twice that number of miles have had the hardihood to make a few small southside clearings; but the general aspect of the country is still that of the days of backwoods-men and their Indian predecessors.—Deer turkeys and pheasants, "use" in the more unfrequented parts; and it is but a few years past, that panthers and wolves have ceased to run. When the completion of the road makes the region of easy access, your Baltimore sporting gentry will know of few choicer resorts for the indulgence of their gun-powder propensities than their Alleghany hunting boxes, Back River and Maxwell's Point not excepted.—Although the country may be valueless for coal the hillsides have fine growth for timber—pine, maple, cherry, chestnut and the usual mountain oaks; of the last, the chestnut oak in such quantities as to afford unusual facilities for tanning mills. The owner of a large tract of these lands was recently on the ground preparing for a saw-mill and tram track; and the lands generally in the same locality, it is thought are of sufficient value, to justify similar improvements.

Along the Crabtree sections, the character of the work changes. The hillside cutting gives place to an alternation of thorough cuts through short spurs of the mountain and embankments in the hollows between. On the 38th Section, there is a very heavy cut, where a tunnel was originally contemplated, but which from the nature of the rock and considerations of economy, has since been abandoned. The cut is 600 feet in length, 108 at the greatest perpendicular depth, and 147 at the slope—which is believed to exceed any cutting in the United States, and also, the maximum cut which one set of levels [barometric perhaps,] has assigned for the Nicaragua ship canal. About two miles on, the road leaving the Great Backbone crosses Crabtree on to what is known as Little Backbone, but which is actually the main or dividing ridge. A bridge was first intended for this point, but there has been substituted as preferable, a heavy rock embankment [67 feet the greatest fill] through the interstices of which the stream makes its way without at all displacing the embankment material. Crabtree, when full, is the beau ideal of a noisy little mountain torrent—tumbling down through a "darksome dell" with an average fall of about 150 feet to the mile. From where the railroad first crosses up its source, the creek is treated as a trifling obstacle, and is passed and repassed, as either bank presents the better ground. The bridges at these crossings are to be iron, resting upon substantial stone abutments, whose wing walls are parallel with the line; or flaring according to their relative positions with reference to the stream. Of these bridges, seven in number, the largest is upon the 40th section, it is 23 feet in height, and 25 feet span, and crossed upon a skew of 45°. The material as in all the rest, is sandstone, laid in range work and in large blocks; the wing walls at the ends are stepped up in offsets.

Five miles further, the road finally reaches

the summit which divides the Atlantic waters from those of the Mississippi valley; and at a height a little over 2600 feet above the sea, and through a cut 31 feet at the greatest depth, passes on into the Glades. A view is of course expected here, and at the proper point, a hill to the north of the summit cut, the expectation is not belied. The view is westward down the glade, bordering on the little Youghiogheny, over a country, rolling gently up from the stream [here a mere run] on one side to the ridge dividing off the adjoining glade, and on the other to the Backbone slopes—the glade meandering along with the stream until both are lost in the distance. The writer of this first saw the glade green in its early spring verdure, and radiant in the last beams of one of our glorious sunsets; a few rounded hillocks on the glade margin, a few trees, gracefully grouped in groves, clumps of shrubbery around the deer licks, herds of cattle, grazing upon the rich pasture, and other like objects, all call to mind the idea of a highly favored agricultural district; but the total absence of every thing indicating habitation—not a house not even a shed—dispelled the idea as soon as conceived. Another occasion was on an August night, some two hours after midnight and by moonlight when on riding along the road which leads for a short distance on the high ground over the glade, the party saw the glade submerged as it were by a dense volume of mist, which at this season usually settles down after night fall, upon the wet lands in the centre. As strange and beautiful as this view was to one sense, there was no want to another of a convincing proof that this appearance was no mirage, from the moisture, which as one rode down into the mist, struck through an ordinary garment like rain. The body of the Maryland glade lands lie to the northward of this, the Yough Glade, chiefly along the streams which run into the Youghiogheny;—and it is from the excellent pasture farms distributed through them, that you have your noted glade butter,—but even among these the farm buildings, with hardly an exception, are log cabins, and they, are few and far between. The glades, as you are well aware, are the abode of health. The purity and invigorating properties of the atmosphere have not been too highly extolled. A hearty constitution, with the ever present temptation to active exercise, presented in the game, especially the fine pheasant shooting, of the region might bid defiance to disease.

Seven miles more of light work upon a descending grade along the little Youghiogheny brings the railroad to Oaklands, a pretty little village, which has sprung up on the roadside, upon the prospective advantages of the depo. This depot from its proximity to the north-western turnpike, [from Winchester, Va., to Parkersburg, on the Ohio,] which here is but ten miles off, as well as from the heavy live-stock transportation looked for in the vicinity at the proper season, will be a station of considerable importance. The local passenger travel will also be of account, as Oaklands is without doubt to be much frequented during the summer by invalids and others, seeking the peculiar pleasure or sense of relief, in exchanging the confinement of the city for the real luxuries of a country life and sports, and excellent country fare. The time will come, as your city advances in its rapid course of wealth and prosperity when a glade villa will be considered an indispensable accessory to a fashionable establishment, and certainly a common sense one.

Two miles from Oaklands, the railroad is upon the bank of the "Big Yough," or main Youghiogheny, it was deemed expedient in the location of this portion of the line to strike the river above the fork of the little Yough. To avoid two bridges, one over each stream, the Little Yough is to be turned from its present channel into an old branch channel which comes into the Big Yough above the site selected for the railroad bridge. This bridge crosses the river with a single span of 180 feet; the masonry of the bridge consists of two sandstone abutments, 44 feet face and 21 feet high, with two wing walls running back at right angles 26 feet; and upon each of these abutments stand four pillars ascending from a base 4 feet square, with a slight batter to a height of 18 feet. A single stone forms each course of the pillar, and the last slightly projecting is the cap-stone—these stones

are to be doweled upon the top of each of these pillars and extending to the opposite one, will rest a large "solid built beam," the top stretcher of the bridge. The suspension chains four to each rib, passing through the ends of these beams, swing down in a catenary curve, and running through iron castings set between the scantling pieces forming the queen-posts, [which at short intervals drop from the top stretcher to the floor timbers,] make each casting a point of support for each panel. At the lower end of the queen-posts, a line of horizontal struts runs from abutment to abutment, each strut being firmly joined at the ends to each post; and just above on the inside of the post, are fastened the sleepers, which pass across connecting the two ribs and supplying the flooring timbers and on which lie the string timbers for the rails. The structure is further finished by diagonal—or panel, braces between the posts. As there are to be four pillars, and four beams and sets of chains, there will in fact be two distinct bridges [accommodating a double track] which placed in juxtaposition will mutually contribute to the firmness and security of the whole structure. From this description, necessarily meagre—it will be observed, that the plan is novel, at least in this country, and presents a beautiful application of the suspension principle to railroad bridges. The second bridge for the second track will not be immediately erected—but hereafter when required.

Eight miles below this bridge [to the north,] the Youghiogheny passes over a ledge of rocks, in a cascade 20 feet perpendicular depth, called the "Swallow Falls," some two hundred yards below Muddy Creek comes in from the west with a fall of 60 feet; and lower down still, there is Deep Creek, from the eastward, with a descent of 200 feet, in the last 2,500. The striking beauty of the scenery around will give this attractive spot a prominent place in the tourist's note-book.

Crossing the Youghiogheny, the road takes the left bank of that river for two miles, and passes over into the Snowy Creek Glade. Four miles on, and about 60 miles from Cumberland, the state line is passed; and a quarter of a mile further Snowy Creek. The road is now in Virginia and is rising upon an easy grade to the Cranberry summit, at a height of 2,550 feet above the tide-water, divides the Youghiogheny waters from those of the Cheat river. It is at the end of the second division of the railroad, and the point where the road commences its descent to Cheat river.

The whole work of which mention is made in this communication, comprises the second division and as such is in the hands of Mr. George Hoffman, assistant under Mr. M. M. Latrobe, the engineer in chief.—The subordinate corps is distributed among five residencies:—Mr. S. T. Shipley, resident engineer, upon the 1st, and Mr. W. M. Owens, assistant, Mr. John Dale, on the second, and Messrs. J. B. Bordly and J. C. Cook, assistants Mr. Geo. W. Smith, on the 3rd, Mr. E. M. O'Donnell assistant, Mr. Eisteldt, on the 4th, and Messrs. McCarthy and Goldsborough, assistants, and Mr. C. D. Hollins upon the 5th, and Messrs. Nickerson and Dorsey, assistants. The work upon this division, though in the main heavy, is well advanced. Several of the Savage and Crabtree sections are already finished, the ballast for the track delivered, and the cross-ties being cut. Of the more important bridges, the masonry is either done or nearly so; and the iron superstructure work, it is understood is in the course of preparation at the company's shops in Baltimore. At the Youghiogheny bridge, the abutments are finished and the pillars well under way; and the timber work progressing at the same pace. It is the intention of the chief engineer that the road shall be opened if practicable to the glades by the close of next summer, and there appears a fair prospect that this may be done.

Upon the first division the work has been pressed on with energy. The force upon the unfinished sections have been largely increased under recent measures adopted with that view, the more effectually to secure the completion of the road to Savage river by the time appointed; the viaduct at Cumberland your paper has already announced as finished; the bridge over the Potomac, on the 21st section is advancing as fast as a full complement of men and favorable weather [for the season] can do

for work of the kind; and together with the viaduct over the same river on the 30th section, will certainly be in readiness for the track when it reaches them.

In regard to the progress of the work, west of the Cranberry summit, there are gratifying accounts. The 3rd division, [from the summit to Valley River,] which was commenced eighteen months since and upon which there are several of the heaviest sections on the line has been advancing quite as fast and in portions faster than could have been anticipated. The rest of the work from the Valley river to Wheeling, upon the 4th, 5th and 6th divisions, is now all under contract. The final guaranty for the completion of the Baltimore and Ohio Railroad is thus given. The time of completion alone remains the question; and in the face of the various obstacles which have been presented to the uniform prosecution of the work in its entire length, and in a measure unforeseen, when the chief engineer first suggested "1852" the great desideratum may yet be accomplished in the course of that year. "M."

Additional Returns of New York Railroads. NEW YORK AND ERIE RAILROAD.

The following report of the New York and Erie Railroad embraces a period of nine months, ending Sept. 30, 1850.

Capital stock as by charter.....	\$10,500,000 00
Amount of stock subscribed.....	6,031,100 00
Amount paid in as by last report....	5,778,891 00
Total amount now paid in of capital stock.....	5,801,285 29
Funded debt as by last report.....	5,839,918 90
Total amount now of funded debt....	9,856,568 90
The amount now of floating debt....	2,475,864 64
Floating debt as per last report.....	2,481,747 41
Total amount now of funded and floating debt.....	12,332,433 54
Average rate of interest on funded debt 7 per ct.	
Cost of graduation and masonry to present time.....	7,180,422 51
Cost of superstructure including iron to present time.....	3,612,435 92
Cost of passenger and freight stations, buildings, and fixtures to present time.....	377,453 46
Cost of land, land damages & fences	742,492 44
Cost of locomotives & fixtures snow plows.....	667,312 64
Cost of passenger and baggage cars	108,458 21
Cost of freight and other cars.....	489,718 98
Cost of engineering and agencies...	374,200 21

Total cost of road and equipment	\$20,323,581 03
Length of road 464 miles, length of road laid 337 miles; length of branches 19 miles; weight of rail 56 and 60 lbs per yard. The company own 12 engine houses and shops, 65 engines, 38 passenger & 5 emigrant cars, 17 baggage, and 784 freight cars. Miles run by passenger trains 01,156, by freight trains 299,456. Passengers, carried over roads 414,727; freight 131,311 tons.	
Expenses of repairs of road-bed and railway, excepting iron.....	\$110,389 11
Repairs of buildings and bridges...	11,676 76
Taxes on real estate.....	5,080 26

Total expense of maintaining road..	\$127,146 13
Expenses of repairing engines & tenders	25,909 84
Expense of repairs of passenger and baggage cars.....	12,078 81
Expenses of repairs of freight cars..	9,202 72
Expenses of repairs of tools and machinery in shop.....	3,741 01
Incidental expenses, including oil, fuel, clerks, watchmen etc.,.....	4,881 26

Total expense of repairs of machinery	\$55,813 64
Offices, expenses, stationery, etc.,	11,611 56
Expenses of agents, land clerks, etc.	39,546 71
Expenses of labor loading and unloading freight.....	45,615 88
Rent of Chemung branch.....	25,500 00
Wood and water, station attendance	2,444 56
Conductors baggage and breakmen,	67,609 39
Engineer and firemen.....	40,936 14
Fuel cost and labor preparing.....	42,120 46
Oil and mastic for engines and cars,	32,121 98
Damages for injuries to persons,	

fire, etc.....	16,737 99
Contingencies.....	11,208 92
Total expenses of operating the road	\$335,452 89
Earnings from passengers and mails, including 1,529 63 for rent.	541,114 50
Earnings from freight.....	522,835 71

Receipts from passengers and mails including rent as above.....	\$1,063,950 27
Receipts from freight.....	541,114 56
	520,019 86

Total receipts.....	\$1,064,134 42
Payments for transportation expenses	518,412 66
Payments for interest on bonds etc.	421,751 34
Payment two of interest on stock, Jan. 1 and July 1.....	339,855 37
Earnings in addition to the above by ferry from passengers.....	33,565 90
Earnings from freight.....	41,859 29

Total earnings by ferry.....	\$75,425 19
Receipts in addition to above by ferry from passengers.....	33,565 90
Receipts in addition to the above by ferry from freight.....	41,859 29

Total receipts by ferry.....	\$75,425 19
Payments for H. River ferry steamboats, etc.....	\$105,535 40

UTICA AND SCHENECTADY RAILROAD.

Capital stock as by charter and subscribed.....	\$3,360,000 00
Total amount paid in.....	3,494,010 00
Total amount now of funded debt....	102,500 00
Total amount now of funded and floating debt.....	102,500 00

Average rate on funded debt, 7 per ct. per annum.	
Cost of road and equipment.....	4,143,918 00
Length of road 78 miles including sliding and double track 88. Weight of rail 65 lbs per yard; the company own 4 engine houses and shops, 19 engines, and 200 freight cars. Miles run by passenger trains, 229,940, by freight 93,580. Passengers carried over road 370,983, freight 98,695 tons.	
Expense of maintaining road.....	\$72,750 26
Expense of repairs of machinery.....	71,307 32
Expense of operating road.....	164,116 28

Total expenses of road.....	308,183 76
Earnings from passengers.....	595,472 27
Earnings from freight.....	255,668 47
Earnings from other sources including sale of old iron, etc.....	72,285 25

Total earnings.....	\$923,425 99
Receipts from passengers.....	595,472 27
Receipts from freight.....	235,718 10
Receipts from other sources including sale of engine, and old iron.....	72,285 25

Total receipts.....	\$903,505 71
Payments for transportation expenses	308,183 76
Payments for interest.....	3,657 50
Payments for dividends.....	356,000 00

Total payments.....	\$667,761 26
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NORTHERN RAILROAD.

The information contained in the following report must necessarily be meager and unsatisfactory so far as it relates to the "working of the road," from the fact that but 44 miles of the road from Rouse's Point to Chateaugay, was put in operation from the first of June to the first of October, 1850. The receipts, however were larger than was anticipated, as this portion of the road passes for more than half the distance through the Chateaugay woods. The entire road was opened on the 1st October.

Capital stk. as by charter subscribed	\$2,000,000 00
Amount paid in as by last report....	1,329,517 50
Total amount now paid in of stock..	1,334,612 91
Funded debt as by last report.....	388,100 00
Total amount of funded debt.....	1,081,232 50
Floating debt as per last report.....	313,957 03
Amount now of floating debt.....	547,650 04
Total amount now of funded and floating debt.....	1,627,685 54

Average rate of interest on debt 7 per ct per ann.	
Cost of road and equipment.....	\$2,979,937 31
Length of road 118 miles. Weight of rail 58 to 61 lbs per yard. The company own 6 engine houses and shops, 6 first and two second class cars; 2 baggage 2 freight and a number of gravel cars, &c.—Miles run by passenger trains 10,332; passengers carried 5,922, freight carried 12,073 tons.	
Expense of maintaining road.....	\$2,347 59
Expense of repairs of machinery....	3,181 36
Expense of operating the road, etc..	6,788 71

Total expense.....	\$11,317 66
Earnings from passengers.....	6,623 16
Earnings from freight. Individuals	
11,187 90, Co. 9,606.....	58,20,794 27
Earnings from other sources.....	347 69

Total earnings.....	\$27,765 15
Total receipts.....	\$16,876 70
Payments for transportation expenses	11,317 66

CANADAWA AND CORNING RAILROAD.

Amount of capital as by charter.....	\$1600,000 00
Amount of stock subscribed.....	445,800 00
Amount of capital paid in.....	64,457 62
Amount expended for graduation and masonry.....	21,686 08
Amount expended for bridges.....	56 700
Amount expended for land and land damages.....	18,699 86
Amount expended for engineering...	4,075 61
Amount expended for contingent charges.....	226 19

Total amount expended.....	\$45,254 73
The length of the road is about 46 miles. No part of the road is completed.	

BUFFALO AND STATE LINE RAILROAD.

Amount of capital stk. as by charter	\$1,000,000 00
Amount of capital subscribed.....	1,000,000 00
Amount of stock now paid in.....	31,932 45
Amount expended in grading and masonry.....	18,365 45
Amount expended for bridges.....	1,656 00
Amount expended for land, land damages and fences.....	5,589 37
Amount expended for engineering and agencies.....	6,502 22

Total amount expended.....	\$32,120 15
Length of road 67 miles. Received for interest, \$283 81.	

SACKETT'S HARBOR & ELLISBURGH RAILROAD.

No part of this road is in operation.	
Capital stk. as by charter subscribed	\$1,500,000 06
Capital stock paid in.....	24,778 28
Amount expended for graduation and masonry.....	18,639 66
Amount expended for superstructure.	286 65
Amount expended in fencing.....	427 72
Amount expended for engineering...	2,567 79
Amount expended for contingent expenses.....	957 15

Total expended.....	\$32,888 97
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BUFFALO AND NIAGARA FALLS RAILROAD.

Capital stk. as by charter subscribed	\$393,750 00
Amount paid in as by last report....	256,255 00
Total amount now paid in of capital stock.....	367,796 00
Funded debt as by last report.....	46,670 00
Total amount now of funded debt....	21,670 00
Floating debt as per last report.....	25,886 00
Total amount now of floating debt....	12,495 00
Total amount now of funded and floating debt.....	34,165 00

Average rate of interest on funded debt 7 per cent.	
Cost of road and equipment.....	428,251 34
Length of road 22 miles. Weight of rail 57 lbs. lds per yard. The company own two engine house and shops; 5 engines, 6 first class, 5 emigrant, 3 baggage and 7 freight cars; miles run by passenger trains, 104 miles. Number of emigrants carried 124,683.	
Freight not given.	

Expense of maintaining road.....	\$1,480 89
Expense of repairs of machinery.....	5,215 83
Expense of operating the road etc....	10,521 94

Total expense.....	\$17,218 66
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Earnings from passengers.....	67,979 49
Earnings from freight.....	4,316 58
Earnings from other sources.....	1,003 00

Total earnings..... \$73,296 07

The receipts from passengers and freight are reported the same as given in earnings, but "from other sources," they are put down at \$31,937 10, which is supposed to be a part of the construction item.

No transportation expenses are given, but payments for interest is put at \$2,963, and Dividends \$25,421.

English Institution of Mechanical Engineers.

OCTOBER 23, 1850.

J. E. McCONNELL, Esq., Vice-President, in the Chair.

"On the form of Railway Axles," by Mr. Thos. Thornycroft, of Wolverhampton.

Since the reading of the paper on the form of railway axles, the author has had his attention specially directed to some of those points which it was the object of the paper to introduce and support.

In that paper, as well as in others on the same subject, a parallel had been drawn between the railway axle and the girder, as being somewhat alike in principle. Admitting the correctness of this opinion, the question would arise, why is the principle upon which every girder is made departed from in the case of the axle? If it is pleaded that the close proximity of the prop and load, and these acting at the extreme ends of the axle, has justified this departure from the girder principle, then it might be expected that girders loaded under very similar circumstances would, in like manner, be reduced in the middle; but not so. As a case in point, reference might be made to the girders which suspended those parts of the Britannia tubes which pass through the towers, where the prop and load are at the extreme ends of the girder, and within a few inches of each other; yet these girders are parallel, although for a distance equal to the width of the tube there is no load whatever.

The principal reason which has been assigned for reducing axles in the middle is the supposition that, when parallel, the effect of the forces from lateral and vertical percussion, tends to break the axle behind the wheel—that being the point where the greatest amount of fractures have taken place. The author is however of opinion, that the simple and only cause of the fracture of axles at that particular point is the shoulder, which it has been the practice to leave on the axle as a stop to the wheel. Some of the experiments now before the Institution, prove at least that where a shoulder exists the strength of the axle is reduced more than one-half, which affords presumptive proof that there are other causes in constant operation (beside the arrestment of the wave of vibration), inducing fracture at that particular point.

It has now become the opinion of some engineers, that in every case of collision, or other derangements of a train when in motion, that axles reduced smaller in the middle are unable to keep their form, and that such axles exposed to violent lateral blows are easily sent beyond the limit of their elasticity; the consequence is, the wheels leave the rails, and contribute directly to greater damage than would ensue were the train to keep the line.

A short time ago, some disarrangement of a train took place on the Shrewsbury and Birmingham Railway, in which case three or four carriages were nearly broken to pieces; the axles of these carriages were all reduced in the middle, and nearly all of them were more or less bent, while some of the carriages in the same train with parallel axles suffered little or no damage, and there was not one parallel axle bent in the slightest degree. Such a result might have been anticipated, when it is remembered that the resistance which the middle of an axle offers to a bending force is as the cube of its diameter. Hence, if we take the diameter of the centre of a reduced axle at $2\frac{1}{2}$ inches, the cube of which is 15.625, and then take the diameter of a parallel axle of the same weight, which would be $3\frac{1}{2}$ inches, the cube of which is 42.875, we find that, with the same quantity of material, the parallel axle has the advantage of the reduced one, to resist all the forces to which axles are subject by

90 per cent. So early as 1842, the Mechanical Section of the British Association had the subject of the fracture of railway axles fully discussed, after a number of excellent remarks from Mr. Nasmyth on the different causes which tended to destroy the fibre of iron, and render it brittle. He observed, that simply nicking iron to the extent of 1-100th of the area took away 1-10th of its strength. Mr. Fairbairn at the same time expressed his opinion, that the two chief causes of the breakage of railway axles were bending and percussion, these changed the fibrous to the crystalline structure. In a paper read by Mr. J. O. York before the Institution of Civil Engineers in 1843, reference was made to the fluting bars of iron used as levers for turning the large screws for forcing forward the shield in the Thames Tunnel, that they never lasted longer than three or four weeks, although very strong, and made from the best materials; and that, when fracture took place, they exhibited a bright crystallized appearance, clearly showing that oft-repeated bending without any concussion, had destroyed the fibre of the iron and rendered it quite brittle.

A mass of evidence might be adduced to prove, that the internal structure of the iron undergoes no change, unless there be a change of form; and that simple jarring or vibration will not destroy the fibres of iron, whereas bending it, if long continued, will change the most fibrous iron into crystalline, —therefore the author would fully subscribe to the opinion of one of the railway commissioners, who has stated, "that it was of importance to avoid deflection on railway axles, as deflection was almost as fatal as fracture in causing accidents."

From the Merchant's Magazine.

Internal Improvements of the State of New York.

A SKETCH OF THE RISE, PROGRESS, AND PRESENT CONDITION OF INTERNAL IMPROVEMENTS IN THE STATE OF NEW YORK.

Continued from page 806 of Vol. 23.

Wm. L. Marcy was chosen Governor in 1832, and in his first message, in January, 1833, he laid down a rule, which, if fairly carried out by the Legislature, was well calculated to preserve a proper equilibrium between the progress of internal improvements, and a wholesome condition of the finances. He said:—"In my judgment, the first object of inquiry should be, to ascertain the amount of expenditure a proposed work would involve; and the next, the amount of revenue that may be derived from it. If the revenue promises to be sufficient to keep it in repair when finished, to defray the expenses of superintendence, and the collection of tolls, and meet the claims for interest on the capital expended, sound policy requires that it should be constructed." "Should the proposed work be connected with those now in operation, the effect it might have on the productiveness of them should also be regarded, and to a reasonable extent, influence your decision." In reference to the Chenango Canal, he stated that it passed through an "interesting section of the State," commended it to the favorable notice of the Legislature, and expressed a strong desire that its merits, if brought within the rules laid down, might induce them to authorize its construction. Mr. Stillwell, chairman of the canal committee, made a favorable report in favor of the Chenango Canal, and an act passed the House for its construction, by a vote of 77 to 11, and the Senate by a vote of 17 to 10.

In regard to the general fund the Governor said: "At the period when the State tax was discontinued, I had the charge of the financial department of the government. Disapproving of the policy of impairing the general fund, I recommended the continuance of the tax; and in subsequent years I deemed it my duty to urge a return to it. It would be useless to attempt now to determine whether the policy thus recommended, and I believe every year since urged upon the Legislature by the head of that department, and for the three last years by the executive, was preferable to the course which has been pursued. We are now brought to a condition in which the expedient heretofore used for meeting the demands of the Treasury can no longer be resorted to, and a new system of revenue must be devised." The expedient referred to, was

the act of using up the capital of the general fund to meet the annual expense of the Treasury, and that capital, at the time of making the mortgage, was nearly exhausted.

The message referred to the movement commenced in the preceding year, for releasing the auction and salt duties from the canal fund by an amendment of the constitution, and restoring them to the general fund; and urged the justice of reimbursing the Treasury for all advances made to it from the canals, as soon as the canal debt should be paid.

Acts were passed at this session incorporating six railroads, three of which have been constructed or commenced, viz:—Buffalo and Black Rock, Utica and Schenectady, and Whitehall and Rutland.

A resolution was passed confirming an amendment of the constitution proposed in the preceding year, for reducing the tax on salt manufactured in the western district, from 12 to 6 cents per bushel.

An act passed for an additional canal commissioner, and Michael Hoffman was appointed by the Legislature. At the same session A. C. Flagg was chosen Controller, in place of Silas Wright, who was elected Senator, and John A. Dix, was appointed Secretary of State.

Gov. Marcy, in his annual message in 1834, after alluding to the rapid increase of the trade of the lakes and canals, adds:—"It has already become quite evident that the capacity of the Erie Canal will not much longer be adequate to the exigency of the business on it. The improvements which soon will be required are double locks, to facilitate the passage of boats, and the enlargement of the canal in its width and depth."

The canal commissioners made a special communication to the Assembly on the 29th of January, in favor of doubling the locks east of Syracuse and re-building the locks at Rochester. An act passed (chap. 312) authorizing the canal commissioners "to construct a second set of lift locks, of such dimensions as they shall deem proper, on the Erie Canal, from Albany to Syracuse." Preparations were made in the summer of 1834 to carry this act into effect, but at the session of 1835, an act passed for enlarging the Erie Canal in its whole extent, and the act of 1834 was suspended. Also, to reconstruct the aqueduct across the Genesee river, at Rochester, with forty feet water-way. Another act was passed authorizing the Governor to appoint an engineer to survey a route for a railroad from New York through the southern tier of counties to Lake Erie, and appropriated \$15,000 to be paid from the Treasury. Acts were also passed incorporating ten railroads, five of which have been constructed, viz:—Auburn and Syracuse, Buffalo and Niagara Falls, Long Island, Lockport and Niagara Falls, and Saratoga and Washington. Acts were passed for the survey of a ship canal from Greenbush to New Baltimore, on the plan of E. C. Genet; also a canal from the High Falls of the Black River to the Erie Canal; from Rochester to Olean; and a branch to Dansville; and a resolution for the survey of the inlet from the head of Cayuga Lake to Ithaca.

In the first annual report made by A. C. Flagg as Controller, in 1834, he recommended a settlement of the account between the Erie and Champlain Canal Fund and the general fund. The report said:—"The canal fund has actually received from auction and salt duties, from the year 1817, to the 30th September, 1833, the sum of \$4,736,017 27. If the canals had not been aided by these auxiliary funds, and money had been loaned in lieu of them at the rate of 5 per cent interest, compounded annually, it would make a total of \$6,671,554 64, as the actual amount of benefit to the Erie and Champlain Canal Fund, from the receipts of auction and salt duties." The report recommended that the canal fund should be charged with the amount it had received from the general fund, with interest, and that the constitution should be so amended as to authorize the commissioners of the canal fund to commence paying the instalments to the Treasury, as soon as a sufficient sum had been collected from the canal revenues, to pay the canal debt. The Committee on Ways and Means of the Assembly, consisting of Melancthon Wheeler, M. Myers, Amasa J. Parker, Asa Cook, Jr., and M. H. Cash, brought in a bill to carry this recommendation into effect, but it did not become a law. This bill pro-

posed to charge to the canal fund, for the benefit of the general fund, something more than \$5,500,000, with interest thereafter at the rate of 5 per cent per annum. This would have given to the general fund about the amount which is secured to it by the 7th article of the new constitution.

The Legislature, instead of adopting this course, passed a resolution to amend the constitution, so as to restore the auction and salt duties to the general fund, as soon as a sum sufficient to pay the canal debt should be collected and safely invested. This amendment was consummated in 1835, and to this extent furnished aid to the general fund, on which the deficiencies of the lateral canals were charged.

The message of Gov. Marcy, in 1835, after alluding to the act of the previous session for doubling the locks on the Erie Canal, says:—"I regret that this measure was not accompanied with another almost equally necessary, providing for the enlargement of the capacity of the canal. For I deem it important that the new locks should be made with reference to the latter improvement. As the commissioners have not yet begun to construct them, it is worthy of your consideration whether you should not now authorize this enlargement, and direct the new locks to be made in conformity thereto." Referring to the proposition to restore the auction and salt duties to the general fund, the message said:—"These sources have contributed to the canal fund \$5,000,000; and you ought now to settle the question, whether any and what part shall be returned to the Treasury. If it shall be determined that none of it shall be refunded, then, in my opinion, the levying of a general tax is inevitable, and should not be delayed."

Benjamin Wright, who had been selected by the Governor to survey the route of a railroad from the Hudson to Lake Erie, made a report, (Assembly Doc. No. 107,) in which the expense of this road, 483 miles long, was estimated to cost \$4,762,260, not including land damages.

The canal commissioners made a special report to the Assembly, (Doc. 143,) on the 30th of January, giving an estimate of \$1,167,000 for doubling the locks from Albany to Syracuse, and \$242,000 for constructing a new aqueduct at Rochester; at the same time, they recommended the simultaneous enlargement of the Erie Canal. "The settlement of these points," says the report, "decides the future utility of the canal. If in the spirit of an enlightened and liberal policy, adequate capacity shall be afforded to the canal, our western brethren will be accommodated and their comforts increased; a rich and increasing commerce will excite and reward the industry, enterprise, and skill of our citizens in agriculture, arts and commerce; and the State, by affording the utmost facility to that intercourse of trade, which improves the moral and social relations of civilized life, will at once confer on its own citizens the most lasting benefits, and on all others in the only measure in which a bountiful Providence permits states to do them good, the greatest benefits and blessings." This report was signed by S. Van Rensselaer, Michael Hoffman, S. Young, Wm. C. Bouck, and Jonas Earll, Jun.

In the Assembly the subject was referred to the canal committee, of which David Wager, of Oneida, was chairman. This committee made a report in accordance with the views of the Governor and commissioners on the 5th of March, and brought in a bill. Appended to this report are statements of John B. Jervis, and N. S. Roberts, showing the advantages of an enlarged canal over one of the present size. The committee stated that in eight years the business on the canal had nearly doubled, although it was estimated that one-seventeenth part only, of the trade on the Erie Canal in 1834, was from without the limits of the State. The report alluded to the competition of Canada, Pennsylvania, &c., and stated that of all these rivals, "Virginia might be the most powerful; for through that State, nature has traced the most direct and easy course from the far west to the Atlantic." The remedy recommended is to widen and deepen the Erie Canal, and "should the improvements now making by the British government in the St. Lawrence, tend to divert the commerce of the west, then increase the capacity of the Oswego Canal, to an extent equal to the increase of the Erie Canal."

When the subject of doubling the locks to Syracuse was under consideration in 1831, the inhabitants of Oswego sent a memorial to the Legislature in favor of a ship canal from Oswego to the Hudson, by way of the Oneida and Oswego rivers. This was referred to a committee, of which O. Robinson was chairman, who made a favorable report and introduced a bill. In February, 1835, a meeting was held in Utica, at which the Mayor presided, in relation to a ship canal from Oswego to Albany, and a memorial was prepared on the subject and sent to the Legislature, accompanied by a survey of the route from Utica to Oswego, by E. F. Johnson. This survey extended only from Oswego to Utica. Mr. Johnson proposed a canal of the depth of eight feet, and a breadth at surface of 90 feet; the banks faced with stone, and the locks 130 feet long and 30 feet wide, being double the width of the old Erie Canal locks, and designed to enable canal boats to pass them by pairs. The route proposed was to enlarge the Erie Canal from Utica to Fort Bull, sixteen and a half miles; then passing on the north side of Wood Creek ten miles to Fish Creek, and following the channel of the latter stream to Oneida Lake; thence twenty-two miles by the lake to its outlet, and by the Oneida river nineteen miles to Three Rivers Point, and from this point along the route of the Oswego Canal to Lake Ontario—whole distance from Utica to Oswego, ninety-two miles, fifty-six being lake and river navigation. The canal to be navigated by steamboats, and also to have a tow-path for using canal boats; and to avoid any transshipment, vessels which navigated the lakes and could pass the Welland Canal, were intended to pass the ship canal to the Hudson and New York. The cost of the ship canal from Utica to Oswego, was estimated at \$1,131,989.

To be continued.

Reduction of Tolls and Enlargement of the Erie Canal.

To the Comptroller of the State of New York:

The opinion is generally entertained, by those best qualified to judge of such a question, *that the trade of the Erie Canal is in danger of being diverted, to a degree that will seriously impair the revenue of the state, and greatly delay, if it does not entirely defeat, the enlargement, and the lateral canals.* Whether this opinion is justified by facts, is the question now to be considered. On its solution depends a conclusion as to the feasibility of the proposed reduction of tolls, and the plan for the early completion of the canals.

There is an aggregate carrying trade between the east and west, for which, or portions of which, the Erie Canal, the New York Central railroad, the Ogdensburg railroad, the Pennsylvania canals and railroads, and the Mississippi river, are now competing. Within two years, the great New York and Erie railway will enter the list as a competitor. The strife will be great, for the prize is valuable, and the palm of success will be awarded to *enlightened enterprise*. It requires no prophet to foretell that the *lowest charge* will win the *largest trade*. This trade is sensitive on the subject of *cost*, to such a degree that, without any limitation or exception, it will all seek that route to its destination, which offers safety and dispatch at the lowest charges. Time and risk are elements of cost. In regard to these elements, railroads, at all times, and under all circumstances, have the advantage of canals. For the purpose of ascertaining the respective advantages of these several routes, the cost of transporting a barrel of flour is considered a fair illustration of the cost of transporting all freights.

Detroit at the west, and Boston and New York at the east, are taken as the points between which the freights under consideration are supposed to be carried.

By the Erie canal route, it costs to transport a barrel of flour from Detroit to Boston, as follows:

Lake freights.....	15 cents.
Canal do. to Albany.....	25 "
do Tolls.....	31 "
Railroad charges from Albany to Boston,	
200 miles.....	28 "
Total.....	99 "

By the Ogdensburg route:—

Lake freight.....	30 "
Railroad charges, 400 miles.....	60 "
Total.....	90 "

Showing 9 cents on each barrel of flour advantage of the Ogdensburg, over the canal route.

The railroad from Albany to Boston, 200 miles long, charges 30 cents per barrel. The railroad from Ogdensburg to Boston, 400 miles long, charges 60 cents—is composed of several corporations, and has a water carriage, or ferry, across Lake Champlain. The New York and Erie railroad, when complete, will be not more than 450 miles in length, has a wide track, and will doubtless carry for about 60 cents per barrel.

By the Erie canal route, it costs to transport a barrel of flour from Detroit to New York, as follows:—

Lake freight.....	15 cents.
Canal do.....	25 "
do Tolls.....	31 "
River freight.....	8 "

Total.....79
From Detroit to New York, by the New York and Erie railroad:

Lake freight.....	15 cents.
Railroad charges.....	60 "

Total.....75 "

Showing 4 cents on each barrel of flour advantage of the railroad over the canal route, besides a saving of full ten days' time, and the risk or expense of insurance.

In the face of such an unequal competition, is there not danger, great danger, that the canal will lose largely, perhaps fatally, of the trade and revenue it has hitherto enjoyed. But, fortunately, there is a remedy, safe and certain, if our financial officers have the courage and wisdom to apply it, and in time.

A reduction of the toll proposed equal to ten cents per barrel on freight passing from Lake Erie to tide water, until 1853, and after that period a reduction equal to 15 cents per barrel, will enable the canal to carry at the following prices, until 1853:—

From Detroit to New York.....	69 cents.
After that period, about.....	61 "
From Detroit to Boston.....	89 "
until 1853; after that period, about.....	85 "

per barrel. With such prices, it is submitted that the canal could retain and increase, both its trade and the revenues of the state. Nor would there be any danger of the revenue falling below the point necessary to accumulate a sufficient sinking fund to sustain the credit of the certificates issued to pay for completing the canals. Whereas, under the present rates of toll, there is no means of calculating the extent of the diversion of trade, and the consequent dilapidation of the revenue.

Diversion of trade by the Ogdensburg railroad last year, was an apprehension based upon doubtful speculation—it has become, this year, a startling fact, demonstrated by actual achievement. It would seem there is little ground for hope, that there will be found any limit to its capacity to divert trade from the canal, until its full capacity to carry freight is reached.

With canal tolls at the present rates, it may happen during the next season, (if the New England markets require so much) that one million of barrels of flour will be diverted from the canal at an expense to the treasury of over \$300,000.

Citizens of Buffalo are shipping flour by that route to Boston, and even now, products which formerly passed from Oswego on the canal to Albany and Troy, is now being received at Troy through the Northern canal, thus avoiding the payment of tolls on about one hundred and ten miles of canal.

These facts, and others equally important, will, it is hoped, admonish those having charge of the finances of the state, that bold, decisive and prompt action, guided by wisdom and prudence, is required to rescue the business and revenues of the state, from the consequences of a dangerous if not fatal diversion of trade.—*Buffalo Express.*

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STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

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ASSISTANT EDITORS,

J. T. HODGE, *For Mining and Metallurgy.*

GEN. CHAS. T. JAMES, *For Manufactures and the Mechanic Arts.*

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American Railroad Journal.

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Saturday, January 11, 1851.

Indiana.

JEFFERSONVILLE AND COLUMBUS RAILROAD.—We gave not long since the annual report of this Company, which is engaged in constructing a railroad from the flourishing city of Jeffersonville situated on the Ohio River, opposite Louisville, to the town of Columbus, on the Madison and Indianapolis railroad. The above in connection with the last named road will form an almost direct line from Louisville to the capital of Indiana. This road which was projected and which has thus far been constructed, by people along its line for the purposes of local traffic, has recently attracted more attention from the important relation it is destined to bear to the railroads in Indiana already in progress and operation, and to the great leading lines of inter-communication now in progress between the different extremes of the country. The importance of Louisville and Jeffersonville, on the

falls of the Ohio, as shipping points for the produce for a vast section of country is well known; and for this purpose, the terminus of this road at Jeffersonville, possesses remarkable facilities.

In ascending from the Ohio to the Table land of northern Indiana, this road occupies one of the most, if not the most favorable routes that can be found in the State. It is well known that a range of high hills follow the course of the lower Ohio, rendering it very difficult to reach the table lands, without very steep grades. This range of hills, are from 400 to 600 feet high. Columbus is 172 feet above the Ohio at Louisville. The route of the Jeffersonville follows a remarkable depression of this range, and passes it, at a no higher elevation than Indianapolis and at a grade of only 26 feet in going from the river, and 23 feet in the direction of traffic. This fact is very favorable both as regards the cheap construction and operation of the road, and marks it out as an appropriate great trunk line from the Ohio to the interior of Indiana, which is now being rapidly covered with a net work of railroads.

While, as we said before, this work has been carried on from considerations of local interests, recent events have given to it a much wider importance. The city of Louisville after remaining for a long time in comparative indifference in reference to railroads, has at length been aroused to a feeling of the necessity of doing something to maintain her position, and to protect herself from the encroachment of her formidable rival, Cincinnati, who, by her numerous lines of railroads, either in operation, or in progress, is seeking to monopolize the trade of Indiana and Kentucky. Louisville to save herself, feels that she must follow the example of her rival—that she must not only throw out railroads into those sections, to whose business she has a right to lay claim, but place herself on the great lines of thoroughfare, through the country.

From the progress of the works of other States, she can now accomplish all that is necessary in this respect, at a comparatively very small cost. To connect herself with the South, she has only to build a railroad to Nashville, Tenn. The Louisville and Lexington will form this connection on the east. Her great avenue to the North must be the Jeffersonville railroad. This will open to her almost every part of Indiana, and ultimately give

her a direct route to Lake Michigan and Chicago. To connect herself with the great lines of railroad running west through the central portions of Ohio and Indiana, she now proposes to aid in the extension of the above road to the Ohio State line, near Union, a distance of 90 miles, thus intersecting with all the roads running west. Such a connection would bring her on the great line of travel north and south, in addition to the increase of local business to be derived from it. For the purpose therefore of aiding the necessary extension she has, after a very careful examination of the subject recently voted the sum of \$300,000 to be applied for the above object. Previous to the action of the authorities, the matter of the subscription was referred to a committee of the city council, composed of Wm. Riddel, John I. Jacobs, and W. P. Brown, from whose report we make the following extracts:

The Jeffersonville Railroad Company were incorporated by the State of Indiana, with perpetual succession with a capital of \$1,000,000, with power to the President and Directors to increase it to the extent of another million, unrestricted as to profits or dividends, with the right to construct a railroad from Jeffersonville to Columbus, and to any other point or points within the State of Indiana.

The company has a right to intersect the road from Madison to Indianapolis at or near Columbus and to run their cars on that portion of the Madison and Indianapolis road north of Columbus upon most favorable terms.

Their road has been located most judiciously for securing cheapness of construction and permanency, combined with the greatest speed, safety and economy in running it. It has thus far been constructed to the best advantage for securing the advantages afforded in location, and it is the intention of the company to finish it upon the plan pursued; and in the opinion of your committee this work will favorably compare with the best railroads in America.

Upon the completion of this railroad to Columbus, Ia., Louisville will be in communication with Indianapolis by railroad, and, through that city, will, early in the spring of 1853, by lines of railroad either completed or in active progress of construction, present the most direct, unbroken railroad connection between the central Ohio river and Boston, New York, Philadelphia and Baltimore, on the Northern Atlantic coast, and be in direct railroad connection with Cincinnati and Pittsburgh, Detroit, Chicago, Galena and St. Louis, as early, if not earlier, than any other city in the valley of the Ohio.

And it may be remarked here, that according to the best information received by your committee, the superiority of location and construction of this

railroad, securing greater speed, safety and economy in running, makes it the best route by which trade and travel from the North seeking the Ohio, or from Kentucky and States South and West of us seeking the North and East and West, can reach their destinations. And when a railroad, well located and constructed from Louisville to Nashville, is completed, placing us in railroad connection with the great railroad system of Tennessee. Alabama, Mississippi, Georgia, South Carolina and North Carolina, in addition to the connections recited as attainable by the completion of the Jeffersonville Railroad Company's enterprise, Louisville would indeed be the great commercial centre of the Mississippi valley.

The projects of the Jeffersonville Railroad Company will not be complete with the finishing of their railroad. Already this company's engineers have surveyed the route for a proposed extension of their railroad from Columbus to Union, a distance of 90 miles, where the Indianapolis and Bellefontaine railroad is intersected by nearly 50 miles less travel than to pursue the road by Indianapolis. This route is reported as singularly favorable for the construction of a railroad at low cost, without curves, and of easy grades and intersects some of the richest and most populous counties in Indiana, all the trade of which has hitherto gone elsewhere, but whose citizens display anxiety to secure so direct a railroad connection with Louisville, and proffer liberal aid toward its construction.

If the importance of this railroad enterprise soliciting our aid may be estimated by the extent, riches and populousness of the country brought into more direct intercommunication with Louisville than any rival above or below us on the Ohio, a glance at the railroad map of Indiana will bear your committee out in claiming that no other road now in construction can compare with this.

Following the railroad from Jeffersonville to Columbus, we find it crosses the counties of Clarke, Scott, Jackson, Bartholomew, Johnson and Marion. The Shelbyville and Rushville and Knightstown roads intersect the counties of Shelby, Rush, Henry and Wayne, and the Bloomington branch runs through the counties of Monroe and Brown.

The railroad from Terre Haute to Indianapolis passes over Vigo, Clay, Putnam and Hendricks counties. The railroad from Lafayette to Indianapolis traverses Tippecanoe, Clinton and Boone counties. Indianapolis to Peru on the Wabash and Erie canal, brings into the list the counties of Miami, Howard, Tipton and Hamilton, and the Bellefontaine road adds Randolph, Delaware, Madison, and Hancock counties; and if we add to all the counties through which the proposed road from Cincinnati to Vincennes runs west of the intersection with the Columbus road, say Knox, Daviess and Lawrence, and we show thirty of the best and most populous counties of our sister State, from which Louisville can be more safely, speedily and cheaply reached by railroad than any other point on the Ohio. Deeming that we have gone far enough to show that the proposed enterprise of the Jeffersonville Railroad Company is of sufficient importance to Louisville to justify the extension of the assistance sought for, your committee will now endeavor to show that this may be done with as entire safety as can be attained in any transaction of such character.

This railroad company are authorized to negotiate loans and issue their bonds to such amount as they may deem necessary, and they are authorized to secure their bonds by pledging by deed of trust, the whole property, revenues, rights, powers, privileges, and franchises granted to the company under the charter, and its various amendments, with power to sell and convey the same (under forfeiture) to the purchaser.

It will be seen by the reports of the company, published 10th September, 1850, that the right of way for the road from Jeffersonville to Columbus has been acquired and is paid for; that about \$170,000 has been expended in construction and equipment of road; that there are uncollected subscriptions of stock for \$253,000; and stock to be issued for work under contract of \$30,000; that they hold real estate, besides road way, to the amount of \$43,000—showing the gross assets of the company to exceed \$500,000. With liabilities on the 10th September, about \$38,000—[now re-

duced to \$15,000]—leaving net assets to the amount of \$562,000—and if the opinion be correct that the unpaid subscriptions are all so far paid as to insure their payment, and if it be stipulated as a condition of the loan that the proceeds of the bonds be expended on the road from Jeffersonville to Columbus, then the security will be of the value of over \$750,000 in property producing handsome profits beyond the interest in the proposed loan, perhaps as productive as any similar property in the Union.

There are now 10 miles of the railroad completed, 6 more will be finished this season, 22 miles more is now ready for the superstructure and the remainder 28 miles is grubbed and cleared ready for grading, so that in all human probability the road may be finished and running from Jeffersonville to Columbus, before the first year's interest on the loan asked for is due, and that interest may be paid out of the earnings of the company; and ere another year's interest is paid the whole road to Union may be in operation.

Since the above report was prepared, we see by the Louisville papers that 14 miles of the road is now in operation, and actively employed by the business along the line.

With regard to the business prospects of the above road every person who will examine a map of Indiana must see that they are not excelled by any road in the country. Louisville is the appropriate mark for a large section of Indiana. To this the above must form the great line. The grades of the road are remarkably adapted to cheap transportation. From their favorable nature, the cost of the road will be only about \$12,000 per mile. Its management is in the hands of men who command not only the entire confidence of the people in Indiana interested in the road, but of the citizens of Louisville. The above company have completed an experimental survey of the line to Union. We understand that the work of construction here will soon be commenced.

From the Merchant's Magazine.

Internal Improvements of the State of New York.

A SKETCH OF THE RISE, PROGRESS, AND PRESENT CONDITION OF INTERNAL IMPROVEMENTS IN THE STATE OF NEW YORK.

Continued from page 15.

The Utica memorial, with the report of Mr. Johnson, and a resolution of the common council of the city of New York, were referred to the canal board by the Assembly on the 4th of March. The papers were submitted to three of the State engineers, John B. Jervis, Holmes Hutchinson, and Frederick C. Mills, who communicated their views to the canal board in a report dated the 23d of the same month. The canal board referred all these papers to Wm. C. Bouck and A. C. Flagg, to prepare a report for the legislature. The portion of the report which related to the enlargement of the canal was prepared by Col. Bouck, and concurred fully in the opinions expressed by the engineers, in favor of enlarging the Erie canal, in preference to constructing a steamboat or ship canal to Lake Ontario. In regard to the financial arrangements for the relief of the treasury, for the payment of the old debt, and for defraying the expenses of the enlargement without incurring a new debt, Mr. Flagg proposed to add the following paragraph:—

"In urging upon the consideration of the legislature the importance of authorizing, at the present session, such an enlargement of the Erie canal as is conceived to be necessary to adapt it to the increasing trade of the country, the canal board desire to have it distinctly understood, that they do not recommend such an expenditure of money, on this work, as will interfere with the arrangements now in progress for accumulating a sum sufficient to pay the Erie and Champlain canal debt, and for restoring the auction and salt duties to the general fund. At the close of 1837, the auction and salt duties will be restored to the general fund, if the proposed amendment to the constitution should re-

ceive the sanction of the people. After the period alluded to, the net proceeds of the canal tolls will be sufficient to meet the disbursements necessary for improving and enlarging the canal without having recourse to new loans for that purpose."

This was concurred in, and the report was signed by Wm. C. Bouck, S. Van Rensselaer, A. C. Flagg, John A. Dix, Green C. Bronson, Wm. Campbell, and Michael Hoffman.

If the recommendation in regard to the appropriation of the surplus revenues to the enlargement of the Erie canal had been strictly followed, it would have given about \$16,500,000 to that work, from 1837 to 1847, as shown by the report of the Comptroller for the latter year.

The act of the legislature, however, did not appropriate the whole of the surplus canal revenues to the enlargement, but the 9th section provided that after the year 1837, the expenditures for this object should be so limited as to leave from the canal revenues \$300,000 for the use of the treasury. In 1836 this sum was increased to \$400,000.

The act of 1835 also provided, that expenditures on the enlargement should be limited to a sum sufficient to construct the additional locks, and the works connected therewith, &c., until a sufficient sum should have been collected and invested, fully to discharge the Erie and Champlain canal debt.

When the bill was under consideration in the Assembly, Mr. Thorn of Dutchess, moved a substitute for the whole bill, providing that the canal commissioners should have detailed estimates made of the whole work and report the cost to the next legislature. This motion was rejected, and the bill passed by a vote of 86 to 16. In the Senate, Mr. Tracy of Erie, moved to strike out the 9th section, which reserved \$300,000 to the general fund. This motion failed 20 to 5. He also moved to strike out the 10th section, in relation to limiting expenditures to the construction of locks, &c., until a sum was set apart to pay the original debt. This was rejected, 14 to 11; and the bill passed the Senate by 24 affirmative votes, being all the persons present.

The act of 1835 conferred on the canal board the power of determining the dimensions of the canal and locks, and of altering the route of the canal, whenever in their opinion the public interest would be promoted by doing so.

Mr. Hoffman resigned the office of canal commissioner on the 6th of May, and Heman J. Radfield, of Genesee county, was appointed at the close of the session. He declined the office, and Gov. Marcy, in the recess, appointed John Bowman to the vacant place.

A bill passed the Assembly at this session for the construction of the Black River canal. In the Senate an adverse report was made by Levi Beardsley, on the ground that it was inexpedient to engage in new works, "until the public debt is in a measure provided for, unless funds shall be raised for such new appropriation;" adding, that "the canal committee believe the public are not prepared to submit to direct taxation in special reference to an extension of our canal system." And they suggest the propriety of completing the Chenango canal, and testing its productiveness before the State should embark in another work of a similar character, "involving a large expenditure, with an equal amount of lockage."

John F. Hubbard, of the Senate, made a report against commencing the Genesee Valley canal at that time, estimating that the annual expense would exceed the income by more than \$100,000, and adding that "in pursuing our system of internal improvement, we should be careful not so to embarrass our system of finance as to depress the credit of the State, or burden the agricultural interests."

Myndert Van Schaick, chairman of the committee on finance of the Senate, made a report (Doc. 38) in which he reviewed the whole system of finance in relation to the canal and other funds, and recommended a direct tax.

Col. Young introduced a resolution instructing the committee on finance to report a bill for a tax, which was rejected, 14 to 9.

When the act for a new loan for the Chenango canal was under consideration, in the Senate, John W. Edmonds proposed an amendment, that whenever money was required to pay interest on

the sum borrowed, or for repairing the lateral canals, the same should be paid from the treasury, "and the Comptroller shall, on the happening of such contingency, give notice to the several boards of supervisors of the sum required to be levied upon each county to pay the interest accruing annually upon the said stock, and to pay said deficiencies; and the sum required to be raised by each county shall be levied and paid into the treasury." This was rejected 15 to 8.

Previous to the legislative session of 1835, in addition to the Erie and Champlain canals, there had been completed and authorized to be constructed, the following canals:—

The Oswego canal, extending from the Erie canal at Syracuse, to Lake Ontario, 38 miles finished in 1828 at a cost of..... \$565,437 35

The Cayuga and Seneca Canal connecting Cayuga and Seneca Lakes with the Erie canal at Montezuma, 23 miles in length, finished in 1829 at a cost of..... 237,000 00

The Chemung canal, connecting the Chemung River at Elmira with the head of Seneca Lake at Havana, 53 miles, with a navigable feeder of 16 miles more to Knoxville, in all 39 miles, finished in 1833, at a cost of..... 316,000 00

The canal uniting the Crooked Lake at Penn Yan, with the Seneca Lake, at Dresden, 8 miles, finished in 1835, at a cost of..... 120,000 00

The Chenango canal, connecting the Susquehanna River at Binghamton, with the Erie canal at Utica, 96 miles, authorized in 1833 and finished in 1837, at a cost of.. 2,417,000 00

The lateral works added 204 miles to the canal navigation of the State, and more than \$3,500,000 to its debt. All these works have a navigable connection with the Erie canal, and are tributaries to its tonnage.

Having reached the period when it was deemed necessary to double the locks and enlarge the prism of the Erie canal to accommodate its increasing trade; and a period also, when the revenues set apart and pledged by the act of 1817 and the constitution of 1821, had accumulated the means necessary to cancel the original debt; it may be interesting to trace from year to year, the rapid increase of revenue derived from tolls, beginning with the navigation on the middle section of the Erie canal in the year 1820, when the sum of \$5,244 34 was received on products transported from the first of July to the close of navigation in December. Besides the above sum there was collected at "the Little Falls of the Mohawk," \$450.56 for the navigation of the works of the Western Island Lock Navigation Company, after the transfer of their rights to the States. The rates from Rome to Little Falls were charged the same per mile as on the middle section. (2d Vol. canal laws, p. 14.)

Previous to the establishment of the canal board in 1826, the canal commissioners appointed the collectors, and fixed the rate of toll to be charged on the canals. The following table shows the whole sum received for tolls during the season of navigation on the Erie canal, and the same for the Champlain canal, from 1820 to 1836, both years inclusive, and also the number of miles of these two canals which were in a navigable condition in each year. In 1820, considerable quantities of lumber, wood, staves, &c., passed from Lake Champlain to the Hudson, but owing to the imperfect navigation, no toll was charged. The amount of toll in the table from the beginning of canal navigation on the middle section of the Erie canal in 1820, to the close of the season of navigation in 1824, is taken from the annual reports of the canal commissioners, who for a portion of this time received the toll from the collectors.

From 1825 to 1836, the sums are taken from the statement of the whole amount of tolls received in each season of navigation appended to the annual reports of the commissioners of the canal fund, commencing with the report made to the legislature of 1826, which embraces the tolls for the season of 1825.

Years.	Miles.	Erie Canal tolls.
1820.....	94	\$5,244 34
1821.....	94	23,001 63
1822.....	116	60,446 89
1823.....	160	126,132 59
1824.....	280	294,546 62
1825.....	333	492,664 23
1826.....	363	777,466 75
1827.....	363	675,919 22
1828.....	363	727,650 20
1829.....	363	707,883 49
1830.....	363	943,545 35
1831.....	363	1,091,714 26
1832.....	363	1,085,612 28
1833.....	363	1,290,136 20
1834.....	363	1,179,744 97
1835.....	363	1,375,821 26
1836.....	363	1,440,539 87

Total..... \$12,297,929 02

Years.	Miles.	Champlain tolls	Total
1820.....	24	\$1,386 84	\$5,244 34
1821.....	49	3,625 41	24,388 47
1822.....	61	26,966 87	64,072 33
1823.....	64	46,214 45	153,099 46
1824.....	64	73,615 26	340,761 07
1825.....	64	84,536 83	566,279 49
1826.....	64	83,341 02	762,003 58
1827.....	64	107,757 08	859,260 24
1828.....	64	87,171 03	835,407 28
1829.....	64	89,033 78	795,054 52
1830.....	64	102,896 23	1,032,599 13
1831.....	64	110,191 95	1,194,610 49
1832.....	64	132,559 02	1,195,804 23
1833.....	64	115,211 89	1,422,695 22
1834.....	64	116,131 10	1,294,956 86
1835.....	64	115,425 24	1,491,952 36
1836.....	61		1,555,965 11

Total..... \$1,296,084 03 \$13,594,013 05

In the first 5 years after the completion of the Erie canal, from 1826 to 1830, the tolls amounted to \$3,832,469 01, averaging \$766,493 80, for each year. The tolls of 1826 being only \$89,027 05 less than the average for the whole term. From 1831 to 1835 the tolls of that canal alone amounted to \$6,023,028 97, averaging \$1,204,605 71, for each of the five years. The average of each year exceeding the amount collected in 1826, by the sum of \$527,139 04. In convention, Doc. No. 73, p. 10, the average annual increase of tolls on the Erie canal for the first ten years after its completion, is given at 9.65 per cent. The difference between the tolls of 1826 and 1835, in the preceding table, is equal to 103 per cent, showing an average annual increase of a fraction more than 10 per cent. The commissioners in 1820 paid to six collectors for their services, a total sum of \$1,062 50. Joshua Forman, author of the resolution in 1808, for a canal from the Hudson to Lake Erie, and who in 1829 furnished the plan of a safety fund for banking, was the collector at Syracuse in 1820, and received for his services \$250.

The cost of repairs and superintendence, in that year, was \$16,718 64. The Erie tolls for 1821, embrace the tolls received at Rome and Little Falls on the old canal, as well as on 94 miles of the middle section of the Erie canal. There passed Rome, in 1821, 2,731 boats, carrying 44,723 barrels of flour, 43,078 bushels of wheat, 1,061,000 feet of boards, 4,472 barrels of pot and pearl ashes, 48,983 cubic feet of timber, and 2,500 tons of merchandise.

The same year more than 9,500,000 feet of sawed stuff, 260,399 cubic feet of timber, and 142,234 staves passed the Champlain canal. The following year, 1822 the sawed lumber transported on this canal exceeded 15,000,000 feet, with 440,000 cubic feet of timber.

The Erie canal was filled with water from Rochester, 20 miles west of Brockport, on the 10th of October, 1823, and the sum of \$141 13 was received for tolls before the close of the navigation. On the 8th of October, 1823, the first boats passed from the western and northern canals through the junction canal, into the tide-waters of the Hudson at Albany.

This event was celebrated in a suitable manner at Albany. A deputation headed by Wm. Bayard, attended from the city of New York. This

gentleman, who had presided at the meeting for getting up a memorial to the legislature in 1816, made an address, which was replied to by William James on behalf of the Albany Committee. The Mayor of Albany, Charles E. Dudley, congratulated the canal commissioners on the arrival of the first boat, and Mr. Clinton replied to his address in behalf of the board of commissioners.

At the close of the navigation season in 1823 the Champlain canal, 64 miles in length, from the junction to Whitehall, was finished, and the Erie canal was navigable for 280 miles, making a total of 344 miles of canal navigation.

The Erie canal was navigable from Brockport to Lockport, 45 miles, in September, 1824, but in consequence of the condition of the roads from Lockport to the Tonawanta Creek, as stated by the commissioners in the report of 1825, all the property destined for the west left the canal at Brockport. The legislature at the fall session of 1824, appropriated \$1,000 to improve the road from Lockport west to Pendleton, so as to accommodate the canal business in the spring of 1825; with a portage of about five miles, property passed on the canal and Tonawanta Creek, into the Niagara River, at Tonawanta.

At the close of the year 1836, when the Erie and Champlain canals had been ten years in operation, and had produced about \$13,500,000 in tolls, the fund commissioners had not only paid the cost of constructing these canals, but also the sum of \$3,370,000 for the superintendence, and the following sums on account of the original debt, viz :

For interest on money borrowed... \$5,254,870 70
For principal of canal debt..... 4,423,571 40

Total sum paid on account of debt. \$9,678,442 10

And at the same time there remained in the hands of the fund commissioners, a sum more than sufficient to cancel the whole of the stock then outstanding, which constituted the balance of the original canal debt. This was the result of the ample provision made by the act of 1817 in providing auxiliary funds for the payment of interest; and the unprecedented success of the Erie and Champlain canals, in accumulating revenue from tolls, as shown in the preceding table.

To be continued.

The Rights of Railroad Companies.

In the Morris Co. [New Jersey] Circuit Court, a conductor upon the Morris and Essex Railroad was indicted for assault and battery in turning out of the cars a passenger who refused to pay the additional fare imposed upon by the company when tickets were not purchased at the office. It appeared that no violence was used by the conductor, but he requested the passenger to leave, at the same time placing his hand upon his shoulder. The Court [Judge Ogden] decided that there was no evidence before the jury upon which the Defendant could be lawfully charged with assault and battery; that railroad companies had a right to make all reasonable rules and regulations not only for the promotion and preservation of their own interests and the well ordering of their business, but for the safety, comfort and convenience of the travelling public; that the rule requiring an extra sum to be paid when tickets were not purchased at the office, was a lawful and reasonable rule, and that the company might lawfully expel any passenger who refused to comply with this rule. The Court further held, that the company were not bound to carry any passenger who thus refused to pay the additional fare the number of miles the amount paid would entitle him to be carried, according to the legal rates of the company.

Rates of Toll on the Pennsylvania State Works.

The following important table, says the Philadelphia Ledger, shows that our present efficient board of canal commissioners have made essential reductions in the rates of toll charged upon goods over the State works. This reduction amounts to about twenty-five per cent of the former tolls on "through freights" and must only tend to increase the receipts on the improvements, by inducing ship-

pers to send freights over the State works that would otherwise be drawn away to New York and the northern route.

Articles.	Canal.	Colum- bia R.	Alle- gheny P. R.R.	Max. tolls on car- go.
Toll per mile per 1000 lbs.	m.	m	c m	\$ cts
Coffee.....4	10	16	1 15	
Oil cake, ground and unground.....3	9	15	75	
Seeds—clover, timothy and all others; also, dried apples and peaches.....4	9	15	1 00	
Tobacco, not man.....3	9	15	80	
Deer, buffalo & moose skins.....4	10	16	1 00	
Feathers.....6	12	18	1 50	
Furs and peltries.....8	16	22	2 00	
Hides, dry.....4	12	18	1 30	
Leather, redressed and undressed.....6	12	18	1 20	
Wool and sheeps' pelts.....6	12	18	1 60	
Alum.....4	11	17	80	
Bale rope and bagging.....4	10	16	75	
Hemp, hempen yarn, and hog's hair.....4	10	16	75	
Drugs, medicines, gro- ceries, foreign li- quor, ropes, cordage, rice and confection- ary.....6	12	18	1 75	
Brown sugar hogs- heads going west.....6	12	18	1 00	
Dry goods and new fur- niture.....8	15	21	2 10	
Earthenware, domestic.....4	10	16	1 00	
Hats, caps, boots, shoes and bonnets.....10	17	23	3 00	
Hardware cutlery and oil cloth.....5	11	17	1 50	
Queenware and chi- naware.....5	11	17	80	
Paints, dyestuffs man- ufactured tobacco & turpentine.....5	12	18	1 50	
Tinware.....6	14	20	1 75	
Whiskey.....4	10	16	75	
Anvils and Spanish whiting.....3	8	14	65	
Coal—bituminous and anthracite.....2	7	13	22	
Railroad iron.....3	8	14	50	
Steel.....5	11	17	1 25	
Butter, cheese, lard, lard oil.....3	9	15	85	
Tallow and eggs.....3	9	15	85	
Bacon, pork and beef in bulk, dry and salted, or otherwise; sperm, adamantine candles and soap.....3	9	14	85	
Beef and pork, salted and in pickle.....3	9	15	50	
Fish, salted and fresh.....4	10	16	1 00	
Flour.....4	7	13	35	
Corn meal.....4	7	13	35	
Marble in blocks.....5	7	13	60	
do sawed.....3	8	14	70	
do manufactur- ed.....3	11	17	1 25	
Ashes—pot, pearl, ba- rytes, soda, ash crude brimstone, nitrate & sulphate of soda.....3	8	14	60	
Oil of all kinds, except castor and lard oil.....6	12	18	1 20	
Strawpaper, wrapping paper, binders' boards and slates.....3	9	15	80	
Paper—writing and printing.....7	14	20	1 75	
Tar, pitch and rosin.....2	7	13	60	
Beeswax and ginseng.....6	12	18	1 50	
Saltpetre, crude or oth- erwise.....3	8	14	1 50	

Additional Charge on Maximum Goods.

Resolved, That, upon all articles transported on the improvements of the commonwealth upon which a maximum rate of toll is paid, except coal, there shall be charged, in addition to the said maximum four mills per thousand pounds per mile on the Philadelphia and Columbia Railroad, and ten mills per one thousand pounds per mile on the Allegheny Portage railroad, which additional toll shall be paid at the office issuing the railroad clearance.

Resolved, That coal shipped at maximum rates shall be subject to only one-half of the regular car and wheel toll on the Allegheny Portage and Philadelphia and Columbia railroads, and an additional toll of one and a half mills per thousand pounds on said railroads.

Resolved, That on all coal shipped at less than maximum rates, a drawback shall be allowed of three-fourths of one mill per ton of two thousand pounds per mile. Provided that this drawback shall not be allowed unless the Delaware division of the Lehigh Navigation Company make a corresponding reduction from their rates of toll for 1850.

Toll on Emigrant Passengers.

The toll on each emigrant passenger, conveyed in freight lines over the canals and railroads of the commonwealth shall be as follows:

From Philadelphia to Pittsburgh.....\$1 50
From Columbia to Pittsburg.....1 25

The whole toll to be paid at Philadelphia and Columbia.

No toll shall be charged on the car conveying emigrant passengers over the railroads.

Ocean Mail Service.

The Ocean Mail Service of the United States, as in operation on the 1st of October, 1850, is as follows:

1st—New York, by Southampton, England, to Bremerhaven, Germany—distance 3,750 miles—once a month—contracted for by the Ocean Steam Navigation company, C. H. Sand, President, at an annual cost of \$200,000. Under contract with the Postmaster General, agreeably to an act of Congress of 3d March, 1845.

2d—Charleston, S. C., by Savannah, Ga., and Key West, Fla., to Havana, Cuba—distance 669 miles—twice a month—contracted for by M. C. Mordecai, at an annual cost of \$50,000. Under contract with the Postmaster General, agreeably to acts of Congress of March 3d, 1847, and 10th July 1848.

3d—New York, by Charleston, Savannah, and Havana—distance 1,400 miles; New York to New Orleans, La.—700 miles; and from Havana to Chagres, New Granada—1,200 miles—twice a month—contracted for by G. Law, M. O. Roberts, and B. R. McIlvaine, at an annual cost of \$290,000. Under contract with the Secretary of the Navy, agreeably to act of Congress of the 3d March, 1847.

4th—Astoria, Oregon, by San Francisco, California, Monterey, and San Diego to Panama, New Granada—distance, 4,200 miles—once a month—contracted for by W. H. Aspinwall, at an annual cost of \$190,000. Under contract with the Secretary of the Navy, agreeably to act of Congress of 3d March, 1847; semi-monthly services is performed on this route, in connection with route No. 3; the additional compensation therefore remains to be adjusted.

4th—An extension; Panama to Chagres—distance, 60 miles—twice a month—\$30 per trip for first 100 lbs. on each mail, and \$12 for each succeeding 100 lbs. Service is performed by the New Granadian government, under a treaty.

5th—New York to Liverpool, England—distance, 3,100 miles—twice a month for eight months, and once a month the residue of the year—contracted for by E. K. Collins, James Brown, and Stewart Brown, at an annual cost of \$385,000. Under contract with the Secretary of the Navy, agreeably to act of Congress of 3d March, 1847.

6th—New York, by Cowes to Havre, France—distance, 3,270 miles—once every other month—contracted for by the Ocean Steam Navigation company; Mortimer Livingston, agent, at an annual cost of \$74,000. Embraced in the Bremen contract route, No. 1, with the Postmaster General.

Commerce of Philadelphia.

NUMBER of arrivals annually at Philadelphia from 1787 to 1851.

Year.	Foreign.	Coastwise.	Total.
1787....	596	390	986
1788....	411	490	901
1789....	324	376	700
1790....	639	715	1,354
1791....	595	853	1,448
1792* * Embargo.			
1793*			
1794....	618	1,250	1,868
1795....	779	1,228	2,007
1796....	858	1,011	1,869
1797....	641	929	1,570
1798....	459	1,002	1,461
1799....	443	825	1,268
1800....	536	1,051	1,587
1801....	667	1,125	1,792
1802....	653	1,106	1,759
1803....	611	1,064	1,675
1804....	498	1,292	1,790
1805....	547	1,196	1,716
1806....	690	1,232	1,922
1807....	699	1,269	1,968
1808....	298	1,951	2,219
1809....	351	1,683	2,034
1810....	405	1,477	1,882
1811....	500	1,425	1,925
1812....	323	1,549	1,872
1813+... 74 + last war.	319		393
1814+... 43	583		626
1815....	487	1,113	1,600
1816....	538	1,101	1,639
1817....	532	1,238	1,770
1818....	576	1,101	1,677
1819....	450	1,046	1,496
1820....	479	877	1,356
1821....	441	913	1,354
1822....	494	1,212	1,706
1823....	482	1,018	1,500
1824....	501	981	1,482
1825....	484	1,195	1,677
1826....	482	1,195	1,679
1827....	469	1,320	1,789
1828....	450	1,247	1,697
1829....	374	2,210	2,584
1830....	415	3,387	3,702
1831....	396	3,262	3,658
1832....	428	2,849	3,277
1833....	474	2,573	3,047
1834....	430	2,686	3,116
1835....	429	3,573	4,002
1836....	421	3,764	4,185
1837....	409	7,476	8,185
1838....	464	10,860	11,324
1839....	521	11,188	11,709
1840....	456	9,706	10,162
1841....	504	9,246	9,750
1842....	454	7,973	8,427
1843....	372	7,659	8,031
1844....	472	7,717	8,189
1845....	387	8,029	8,416
1846....	459	6,018	6,477
1847....	657	18,069	18,726
1848....	542	23,921	24,463
1849....	585	24,594	25,169
1850....	518	27,035	27,553

Tennessee.

Nashville and Chattanooga Railroad.—The Mayor of Charleston recently visited this state, and personally inspected the entire line of the Nashville and Chattanooga railroad. On his return, he made a report to the city council of Charleston, which is published in the papers of that city, and is in the highest degree complimentary to the president and directory of the road. He gives a statement of work upon the whole route, and closes with the following:—

From a review of the affairs of the company and the whole line of work executed and in progress, I have arrived at the following conclusions, in which you, gentlemen, from the foregoing report may probably be disposed to concur.

1st. That the company are both willing and able to complete the entire line from Nashville to Chattanooga, in the shortest possible period consistent with the most approved and substantial construction of the work.

2d. That they have both required and enforced

the use of the most appropriate and durable materials, and at the most economical prices ever obtained upon any railroad.

The road will be ready from Chattanooga to the Tennessee, as soon as the track reaches that river from Nashville, it will take two years to reach that point with the iron. The repairs and bridges on the Tennessee river, will be ready at the same time. You will thus receive the entire road, viz: one hundred and fifty-one and 8 miles of branch to Shelbyville, from Nashville to Chattanooga, as under the old contract, you were to obtain but the first 40 miles from the Tennessee river to Nashville, and at a saving of \$300,000—the first forty miles, it will be remembered, included the tunnel. All the contracts are in good hands—as to the right of way, it is generally yielded 9 cases out of 10, and frequently given out of the best and most valuable lands—the whole of the payments for such right, thus far, do not exceed two hundred dollars. Depot grounds have also been given along the route, each containing from 8 to 10 acres.

The whole cost of the road, including the Tennessee bridge, will amount to about \$2,569,000 in place of \$2,860,000—as originally estimated.

In addition to this the whole cost and carriage of the iron rail, chairs (or clamps) and spikes, amounting to \$420,900, are now bought and paid for by the company, except \$118,000, expected from the city council of Charleston on the 1st December next.

The estimate of the Chief Engineer, in his report of February, 1847, was, for the iron for the railroad \$940,000
For iron chairs, spikes and bolts 76,000

\$1,016,000

3d. It is, moreover, the manifest policy of the company to press the speedy completion of the superstructure, and the laying of the iron with unabated vigor, so as nearly to apply the income of the road to meet the interest of 6 per cent per annum, required by the 3d section of their amended charter of the 21st July, 1850, to be paid on all subscriptions actually advanced or paid in; there is thus another and a powerful influence to the entire completion and use of the road.

5th. The company have, through the untiring application of its present Chief Engineer and assistants, largely improved upon the original location of the entire line, until it has now secured every possible advantage as to distance, direction, grade and cost.

6th. That there is now no probability, whatever of a failure. A delay is only possible, by the death or deposition (either of which would be a serious calamity) of the present president, whose fidelity, energy, intelligence, and perfect familiarity with and aptitude for the practical details and administration of every department of the company, render his continued connection with it indispensable and his services invaluable. This language may be considered as savoring of compliment. I employ it in all sincerity and truth, as eminently due him.

Maine.

Railroad to the Kennebec.—The directors of this road, at their meeting on the 27th ult., located it, to commence at Augusta; thence between Snow's pond and the Kennebec river to Waterville; thence across the Kennebec river at the College slips, and by way of Newport and Carmel to the city of Bangor.

It is understood that the proprietors of the broad gauge road from Waterville to Portland, offer to lease the proposed road from Waterville to Bangor, for a term of years at six per centum upon its cost; and that they are able and willing to furnish adequate security for the payments on their part. This being the case, there can be no doubt that a road from Waterville to Bangor will be speedily accomplished.

It is possible that the proposed road may be leased to, and connected with, the Augusta and Portland road, as well as with the Waterville and Portland road. This is a consummation most devoutly to be wished. It would give passengers a choice of routes after reaching Waterville, and connect the east with the lower Kennebec, as well as with Portland and the west. If this thing can be

brought about, it may be the means of healing up the unfortunate quarrels between the rival roads from Portland to the Kennebec, and thereby render a most important benefit to the interests of the state.

We are assured and believe, that the directors of the Kennebec and Penobscot road, will aid in such an arrangement by all the good offices in their power, and we cannot but hope that it will be brought about, by allowing proper time for propositions to be made and considered.

It may be necessary to change the gauge of the Augusta road to the broad gauge, in order to bring about an entire harmony of interests. That can be done, it is supposed, at a small expense, and will remove serious difficulties hereafter. If we have two systems of road as to gauge in this state, the mischief increases as the systems extend and their points of contact multiply.

The reasons which determined the adoption of the narrow gauge for the Augusta road may have been perfectly satisfactory at the time. But many events have happened, not then foreseen, and the aspect of things is materially changed. It is no case for the indulgence of any mere pride of opinion. The question is, how best to adapt present action to present wants and present interests.

—Bangor Democrat.

The Coal Trade of Boston.

The imports of foreign coal into Boston since 1837 have been as follows:

	Tons.	Chaldrons.
Total, 1850....	6,246	33,081
1849....	12,800	35,133
1848....	5,952	41,079
1847....	4,256	50,633
1846....	5,383	22,476
1845....	13,629	27,674
1844....	7,552	19,067
1843....	5,050	17,800
1842....	11,014	18,460
1841....	12,754	27,187
1840....	9,110	25,753
1839....	5,880	26,277
1838....	10,344	16,661
1837....	11,873	29,691

The imports from America have been from—

	Tons.	Chaldrons.
Philadelphia....	255,470	
Baltimore.....	20,813	
Rondout.....	9,850	
Portsmouth, R. I. .	1,053	
New York.....	764	
Norfolk.....	182	
Providence.....	62	
Georgetown, D. C. .	60	
Alexandria.....	175	
Richmond.....		63,415

Total, 1850....	288,429	63,415
1849....	262,632	20,809
1848....	274,902	58,795
1847....	258,093	158,795
1846....	186,292	127,525
1845....	171,023	284,475
1844....	139,566	170,850
1843....	117,451	150,813
1842....	90,276	121,800
1841....	110,938	124,011
1840....	73,847	92,370
1839....	90,485	144,475
1838....	71,364	107,625
1837....	80,557	109,275

European and North American R.R.

We have much satisfaction in stating that Mr. Morton, who was appointed by the State of Maine to explore a line for a railway from Bangor to Calais, has found a good route for a line, only 95 miles in length, instead of 112 miles, as had been previously anticipated. Mr. Wilkinson, we learn has found a good route from this city to Calais, only 73 miles in length, instead of 96 miles by the Douglas Valley, which was first examined.

The whole length of the European and North American railway, the two extreme points of which are Halifax and Bangor, may now be thus stated:—

Halifax to Baie Verte,	126 miles.
Baie Verte to Shediac,	21 do.
Shediac to St. John,	105 do.
St. John to Calais,	73 do.
Calais to Bangor,	95 do.

Total 423 miles.

There is some reason to believe, that a farther examination of each of the lines mentioned will result in shortening their several lengths, especially between Halifax and Shediac; and there are strong grounds for believing that, the whole length of the great railway when finally located, will scarcely, if at all, exceed four hundred miles! This is nearly one hundred miles shorter than at first contemplated, and cannot fail to be most gratifying to every friend of the enterprise.

Trade and Commerce of Canada.

Comparative statement of the number of vessels and their tonnage, which arrived at the port of Quebec, from sea, and the number of passengers that came out in them, from 1846 to 1850, inclusive—

	Vessels.	Tons.	Passengers.
1846.....	1448	578,104	32,753
1847.....	1179	474,545	97,582
1848.....	1044	426,908	98,261
1849.....	1061	431,953	38,194
1850.....	1479	434,294	32,292

The above includes the vessels that were bound to Montreal, as well as all vessels entering the port.

The number of ships built at the port of Quebec, during the past year were 31; with an aggregate tonnage of 36,000 tons. The number of vessels from ports in the United States, that cleared at that port the past year, is 46; of which 15 were from Whitehall, and 11 from Cleveland, and 11 from Burlington, and 6 from Monroe, Michigan.

Lake Champlain received the past year from the port of St. John, 31,785,940 feet of sawed lumber, and 1,660,000 feet of pine timber. The amount of pine timber exported to England the past year from Quebec was equal to 17,000,000 feet, the amount exported to this country from the St. Laurence is rapidly on the increase, and from that source we must soon draw our supplies. This fact is urged one of the great reasons for reciprocal free trade with the Provinces.

A YEAR'S WORK OF LOCOMOTIVE ENGINES.

The following is an accurate statement of the number of miles run by four engines belonging to the Syracuse and Utica railroad company upon their road for the past year.

The "Garangula," built by Rogers, Ketchum & Grosvenor, ran in the last year 26,394 miles.—The "Osceola," built by the same, ran 25,016 miles. The "Diomed," built by the Messrs. Norris, ran in the same time, 26,552 miles; and the "Hippomenes," built by the same, ran 25,580 miles.

This is a large service for engines; averaging full 80 miles per day for every working day in the year. They are all in first rate order, and in daily service. As it will be interesting to see the number of miles run on other roads, will not some other companies furnish us with a statement of miles run on their roads, by way of comparison?

Massachusetts.

Barre, Boston and Gardiner Railroad.—An adjourned meeting of the stockholders was held at Worcester on Wednesday. The vote was in favor of praying the Legislature for an extension of the charter. The following were chosen directors:—John W. Lincoln, Stephen Salisbury, William A. Wheeler, Mr. Merrifield, Mr. Tower, Worcester; Seth Caldwell, James W. Jenkins, Jr. John Smith, Barre; John Brooks, Princeton; Mr. Hammond, Boston; Mr. Knowlton, Holden.

Lowell Railroad.—Directors for the ensuing year:—Wm. Sturgis, President; George W. Lyman, Eben Chadwick, Francis C. Lowell; Treasurer, J. Thomas Stevenson; Clerk, Thomas P. Tenney.

U. S. Mint.

The Philadelphia American has received from Edward C. Dale, Esq., Treasurer U. S. Mint, the annexed statistics relative to the operations of the mint for the month and year just closed. It will be observed that the receipts of gold have been very large—\$33,150,000, in the aggregate, of which amount California contributed \$31,500,000, an average upwards of \$2,500,000 a month. The coinage in the same period amounts to \$28,206,471, of which the gold coinage was \$27,756,445 50; silver coinage \$409,600; and the copper coinage \$7,948 47.

U. S. MINT, PHILADELPHIA.

Coinage for December, 1850.

Gold coinage—	
189,821 double eagles.....	\$3,796,420 00
45,000 quarter eagles.....	112,500 00
78,098 gold dollars.....	78,098 00
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312,919 pieces.....	\$3,987,018 00
Silver coinage—	
68,800 quarter dollars.....	\$16,700 00
115,000 dimes.....	11,500 00
290,500 half dimes.....	14,500 00
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784,719 pieces.....	\$4,029,718 00
Copper—	
794,847 cents.....	\$7,948 47
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1,579,566 pieces.....	\$4,037,666 47

COINAGE FOR THE YEAR 1850.

Gold coinage—	
1,170,261 double eagles.....	\$23,405,220 00
291,451 eagles.....	2,914,510 00
64,491 half eagles.....	322,455 00
252,923 quarter eagles.....	632,397 50
481,953 gold dollars.....	481,953 00
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2,261,079 pieces.....	\$27,756,445 50
Silver coinage—	
7,500 dollars.....	\$7,500 00
227,000 half dollars.....	113,500 00
190,800 quarter dollars.....	47,700 00
1,931,500 dimes.....	193,150 90
955,000 half dimes.....	47,750 00
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5,572,879 pieces.....	\$28,166,045 50
Copper—	
4,022,644 cents.....	40,226 44
39,812 half cents.....	199 06
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9,635,335 pieces.....	\$28,206,471 00

DEPOSITS FOR THE YEAR 1850.

Total gold deposits.....	\$33,150,000
Of which from California.....	\$31,500,000
Other sources.....	1,650,000
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Total silver deposits.....	\$428,000
The deposits for the month of December from California, are about.....	4,500,000

Indiana.

Richmond, Hagerstown, New Castle and Pendleton Railroad.—The board of directors of the New Castle and Richmond railroad, at their meeting on the 2d inst., completing their organization by electing Hon. J. T. Elliot, President; T. B. Woodward, Secretary; and Eli Murphey, Treasurer.—Mr. Erwin, of Hamilton, will probably be continued as principal engineer. The character of the board and officers are a sufficient guarantee wherever they are known, that the work will be pushed forward as rapidly as possible, and that the affairs of the company will be prudently managed. Mr. Erwin is now preparing the whole line for letting, and will have his report ready for the action of the board at their meeting on Monday week.—*New Castle Courier.*

Virginia.

Virginia and Tennessee Railroad.

We have received the third annual report of the company engaged in the prosecution of this important work. It appears by the report of the directors that at the last meeting, the whole amount of capital that actually appeared on the books of the company, was \$550,800. Shortly thereafter the subscriptions made by the southwestern counties swelled the private stock to something over \$750,000, the amount which authorized a call on the board of public works for a subscription, on the part of the commonwealth, of \$900,000. This was accordingly done, and early in January the State became a stockholder to that amount. In addition to the above, it is believed that the efforts now being made will bring the amount of private subscription up to \$950,000, which will entitle the company to a State subscription of \$1,140,000, making the whole available capital equal to \$2,090,000.

There has been received on the capital stock during the past year, [including \$1,473 28 in the treasury,] the sum of \$391,077 11. The disbursements for the same time were \$305,285 04. The whole extent of line now under contract is 71 miles, and is in such a state of forwardness that it may be easily completed during the present year. For this, 6,000 tons have been purchased through Jas. Dunlop, Esq., of Petersburg, at \$40 50 per ton, delivered in the James river. Contracts have also been entered into for the other items necessary for the construction and equipment of the road, with persons within the State for the purpose of encouraging, as far as could properly be done, their own manufacturing establishments. In relation to this matter the report says:

"The board have uniformly kept in view the policy of promoting home manufactures wherever it could be done without a sacrifice, believing that this course will add in the business of the road, while it will build up workshops around us, which will economise the future operations of the company, by reducing the cost of repairs, and keeping up their machinery. In accordance with this view a contract was made in October last, with Mr. F. B. Duane, Jr. for the chairs and spikes to lay the track, and for the passengers and burden cars to stock the road to Salem. The prices paid him are exactly the same paid for work of like quality in the State of Massachusetts, and he is to receive fifteen per cent of the whole amount of his contract in the stock of the company. This contract is to apply to the whole line, unless the board of directors shall elect to suspend it after the completion of the road to Salem, of which a stipulated notice will be given to the contractor. An arrangement has also been made on certain conditions, with Mr. Joseph R. Anderson, of Richmond, to manufacture nine locomotives, ten per cent of the value of which he is to take in the stock of the company."

In relation to the progress of the work the report says:—The work has progressed with unexampled rapidity, and in such a manner as to give general satisfaction. It is believed that a greater amount of work was never done in the same period on any road in the country, certainly on none in the southern states. The skill and fidelity of the contractors, as a body, entitle them to our warmest commendation. It may be considered as quite remarkable, that, in the execution of so large an amount of work, not one case of failure has occurred, and not one dollar has been lost to the community by irresponsible contractors. They have all gone on

to perform their work in a quiet but energetic manner, which proves that they deserve the trust reposed in them at the time when that work was placed in their hands.

The whole length of the road as now definitely located, from Lynchburg to the Tennessee State-line, is 207 miles. The report of the directors also embraces that of the Chief Engineer, and the substance of the remarks made by him at the Richmond meeting of Oct. 19th, both of which are very interesting documents.

We are very happy to present such a favorable account of the progress of this great work. It has been pushed forward with great vigor, and possesses ample means for its continued prosecution.—The aggregate of all the lines connected with this now in progress presents one of the most magnificent projects that ever engrossed public attention. From its connections, each section attaches the same importance to its own, that it would the whole line, if it were under one charter, and under the control of one company. This feeling, together with that arising from the fact, that all engaged are laboring for the same end, will, of itself, secure one half of the necessary means, as this will infuse itself into the whole community, and prompt every man to contribute to his utmost ability.

Railroads in the U. S. on the 1st day of January, 1851.

MAINE.

Androscoggin and Kennebec.....	55
Atlantic and St. Lawrence.....	67
Buckfield branch.....	13
Bangor and Piscataquis.....	12
Kennebec and Portland.....	25
Bath Branch.....	9
Portland, Saco and Portsmouth.....	51
Calais and Baring.....	3
Machiasport.....	8
Boston and Maine.....	3
York and Cumberland.....	11
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	257

NEW HAMPSHIRE.

Boston, Concord and Montreal.....	51
Cochecho (Dover to Farmington).....	17½
Concord.....	35
Concord and Claremont.....	26
Contocook Valley.....	14½
Franklin and Bristol.....	12
Great Falls and Conway.....	6½
Manchester and Lawrence.....	26½
New Hampshire Central.....	26
Northern (Concord to W. Lebanon).....	69
Portsmouth and Concord.....	23
Sullivan.....	25½
Wilton.....	18
Cheshire.....	43
Eastern.....	16
Nashua and Lowell.....	5
Nashua and Worcester.....	6½
Great Falls branch.....	3
Petersboro' and Shirley.....	9
Boston and Maine.....	35
Ashuelot.....	23½
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	471½

VERMONT.

Connecticut and Passumpsic Riv.....	61
Rutland and Burlington.....	120
Vermont Central.....	117
Connecticut River.....	10
Vermont and Canada.....	40
Rutland and Washington.....	12
Saratoga and Washington.....	6
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	366

MASSACHUSETTS.

Berkshire.....	21
Boston and Lowell.....	26
Woburn branch.....	2
Boston and Maine, (74 in all).....	36
Medford branch.....	2

Lawrence branch.....	34	Oswego and Syracuse.....	35	SOUTH CAROLINA.	
Boston and Providence, (43 in all).....	374	Rensselaer and Saratoga.....	25	Columbia and Greenville.....	22
Branches.....	12	Saratoga and Washington.....	394	South Carolina.....	136
Stoughton branch.....	4	Schenectady and Saratoga.....	22	Columbia branch.....	68
Boston and Worcester.....	45	Schenectady and Utica.....	78	Camden branch.....	44
Brookline branch.....	14	Skaneateles.....	5		270
Milford branch.....	13	Tonawanda, (Batavia to Attica).....	434	GEORGIA.	
Newton branch.....	14	Troy to Greenbush.....	6	Central Georgia.....	191
Saxonville branch.....	4	Troy and Schenectady.....	204	Georgia.....	171
Millbury branch.....	4	Tioga Coal and Iron railroad.....	15	Macon and Western.....	101
Cape Cod branch.....	28	New York and N. Haven, (76 in all).....	15	Western and Atlantic.....	140
Cheshire, (54 in all).....	11	Syracuse and Utica.....	53	Athens branch.....	39
Connecticut River.....	50	Rome and Watertown.....	24	Rome branch.....	18
Chicopee Falls branch.....	24		1,4094	Camak branch.....	4
Dorchester and Milton.....	3	NEW JERSEY.			664
Eastern, Boston and Portsmouth, (54 in all).....	384	Burlington and Mt. Holly.....	6	ALABAMA.	
Marblehead branch.....	3	Camden and Amboy.....	62	Montgomery and West Point.....	68
Gloucester branch.....	134	Amboy to New York, steamboat route, (28 miles).....	28	Tusculum and Decatur.....	44
Salisbury branch.....	34	Morris and Essex.....	36		112
Essex, (Salem to Lawrence).....	20	New Brunswick and Trenton.....	26	MISSISSIPPI.	
Fall River.....	42	New Jersey.....	31	Vicksburg and Jackson.....	60
Fitchburg.....	51	New Jersey Central.....	36	LOUISIANA.	
Watertown branch.....	3	Patterson and Hudson.....	17	Clinton and Port Hudson.....	24
Other branches.....	15	Ramapo and Patterson.....	14	Mexican Gulf.....	27
Fitchburg and Worcester, (26 in all).....	14	Trenton branch.....	6	Milneburg and Lake Ponchartrain.....	6
Lowell and Lawrence.....	13		332	New Orleans and Carrollton.....	6
Nashua and Lowell, (15 in all).....	94	PENNSYLVANIA.		West Feliciana.....	26
New Bedford and Taunton.....	31	Alleghany and Portage.....	36		89
Branch.....	1	Beaver Meadow.....	26	KENTUCKY.	
Newburyport and Georgetown.....	10	Carbondale and Honesdale.....	16	Lexington and Ohio.....	49
Norfolk County, (36 in all).....	25	Columbia and Philadelphia.....	82	Louisville and Frankfort.....	28
Norwich and Worcester, (66 in all).....	17	Westchester branch.....	9		77
Old Colony, (Boston to Plymouth).....	374	Corning and Blossburg.....	25	ILLINOIS.	
Bridgewater branch.....	7	Cumberland Valley.....	52	Galena and Chicago*.....	42
Peterboro' and Shirley.....	14	Hazleton and Lehigh.....	10	Sangamon and Morgan.....	55
Pittsfield and North Adams.....	20	Little Schuylkill.....	20	Aurora branch.....	13
Providence and Worcester, (434 in all).....	264	Mine Hill.....	25	St. Charles branch.....	8
Quincy.....	3	Mount Carbon.....	7		118
South Shore.....	114	Pennsylvania* 134.....	97	INDIANA.	
Stockbridge and Pittsfield.....	23	Phil., Reading and Pottsville.....	174	Madison and Indianapolis.....	86
Stony Brook.....	13	Phil. and Norristown.....	17	Shelbyville branch.....	16
Western, Boston to Albany, (200 miles in all).....	117	Germantown branch.....	6	Indiana and Bellefontaine.....	26
Worcester and Nashua, (454 in all).....	39	Phil. and Trenton.....	30	Shelbyville and Knightstown.....	27
Springfield and Hartford, (62 in all).....	5	Phil. Wil. and Balt.....	98	Shelbyville and Rushville.....	20
Vermont and Massachusetts.....	59	Schuylkill Valley.....	25	Jeffersonville.....	16
Housatonic branch.....	11	Summit Hill and Mauch Chunk.....	25	New Albany and Salem.....	35
New London, Willimantic and Palmer.....	12	Whitehaven and Wilkesbarre.....	20		296
South Reading branch.....	9	Williamsport and Elmira.....	25	OHIO.	
Salem and Lowell.....	18	Franklin.....	22	Cleveland and Columbus.....	135
	1,0424	Dauphin and Susquehanna.....	16	Dayton and Springfield.....	25
CONNECTICUT.		Strasburgh.....	7	Little Miami.....	84
Canal railroad*.....	45	Lykens Valley.....	16	Mad River and Erie.....	134
Collinsville branch.....	8	Nesquehoning.....	5	Mansfield and Sandusky.....	56
Hartford, Providence and Fishkill*.....	45	Room Run.....	5	Xenia and Columbus.....	54
Housatonic.....	74	Pine Grove.....	5	Findlay branch.....	16
Naugatuck.....	62	Beaver Meadow branch.....	12	Erie and Kalamazoo.....	15
New Haven, Hartford and Spring.....	57		913	Columbus and Lake Erie.....	61
Middletown branch.....	10	DELAWARE.		Cleveland and Pittsburg.....	10
New London, Willimantic and Pal.....	48	New Castle and Frenchtown.....	16		590
New York and New Haven.....	47	MARYLAND.		MICHIGAN.	
Stonington.....	54	Annapolis and Elkridge.....	21	Detroit and Pontiac.....	25
Norwich and Worcester.....	49	Baltimore and Ohio*.....	179	Michigan Central.....	218
	4504	Washington branch.....	31	Tecumseh branch.....	8
RHODE ISLAND.		Frederick branch.....	3	Michigan Southern.....	88
Providence and Worcester.....	17	Baltimore and Susquehanna.....	57	Erie and Kalamazoo.....	18
Stonington.....	444	Westminster branch.....	10		35
	614	VIRGINIA.		WISCONSIN.	
NEW YORK.		Appomattox.....	10	Milwaukee and Mississippi railroad.....	20
Albany and Schenectady.....	17	Central Virginia.....	71	Total in the United States.....	8,680
Albany and West Stockbridge.....	384	Chesterfield.....	12	Schuylkill Canal Trade.	
Attica and Buffalo.....	314	Greenville and Roanoke.....	21	The past year has been a most disastrous one to the Stockholders of this company. Business was commenced with spirit, and an increased trade was done upon the canal, until the 18th of July, when a violent freshet injured portions of the canal and retarded business upon it for several weeks. On the 2nd of September, another freshet of unexampled violence carried away several dams, and swept	
Auburn and Rochester.....	78	Petersburg.....	63		
Auburn and Syracuse.....	26	Richmond, Fred. Potomac.....	76		
Buffalo and Niagara Falls.....	22	Richmond and Petersburg.....	22		
Cayuga and Susquehanna.....	29	Winchester and Potomac.....	32		
Chemung.....	174	Seaboard and Roanoke.....	49		
Hudson and Berkshire.....	314		306		
Hudson River*.....	75	NORTH CAROLINA.			
Lewiston.....	34	Gaston and Raleigh.....	87		
Lockport and Niagara Falls.....	24	Wilmington and Weldon.....	162		
Long Island, (Brooklyn to Greenpoint).....	98		249		
New York and Erie*.....	318				
Y. Y. to Piermont, Steamboat route, (24 miles).....	19				
Newburgh branch.....	19				
New York and Harlem*.....	80				
Northern,* (Rouse's Point to Chateaugay).....	118				

away large portions of the embankments and towing paths, and carried away sixteen bridges over the Schuylkill river, besides a number of houses and other buildings—upwards of twenty persons also were drowned. The energetic managers backed by the liberal subscriptions of the Stock and Loan holders at once commenced repairing the damage, which will be completed in time for the spring trade. The works will be better than heretofore. Between this city and Reading the canal has been repaired, and has been navigable for some time.

Among the articles carried upon the canal in 1850, were:—

DESCENDING.			
Coal amt. tons..	288,033	Iron wrought....	3,046
Bituminous.....	1,963	— Castings....	1,879
Flour.....	4,067	— Nails.....	395
Grain.....	2,877	— Ore.....	3,573
Lime.....	47,490	Rark.....	522
Limestone.....	32,700	Lumber.....	8,571
ASCENDING.			
Lumber, tons.....	9,537	Salt.....	571
Grain.....	4,845	Pig iron.....	2,872
Flour.....	469	Wrought iron....	314
Plaster.....	1,873	Bit coal.....	1,038
Lime.....	2,276	Shingles.....	213
Limestone.....	6,916	Total tonnage....	44,375

AMERICAN RAILROAD JOURNAL.

Saturday, January 11, 1851.

Railway Iron.

THE Subscribers will contract to deliver, in the course of the ensuing Spring and Summer, the best English Rails, made by a particular specification, and of any pattern required.

DAVIS, BROOKS & CO.,
68 Broad st.

On hand for sale, English rails of 53 lbs. to the yard, made by particular specifications.
January 10, 1851. 2m

Railroad to the Pacific.—Mr. Whitney's plan.

In our paper of last week we gave place to a long communication, signed "A Western Man," in favor of Mr. Whitney's project, and in reply to a communication in our paper of 14th ult., signed "A Subscriber," proposing a new scheme for the accomplishment of this great work. We were very happy to give place to the article, as the position of the writer—his character, and means of information—entitles whatever he may say to the most respectful consideration. But we cannot find in it any reason for relaxing our opposition to Mr. Whitney's plan. As far as building railroads is concerned, we regard Mr. Whitney as a wild and visionary man; that his opinions are worthless, that his scheme is without merit, that his data and evidence are all assumed, and have no foundation in fact, and that his plan is eminently calculated to defeat the great work that all are seeking to accomplish.

We must leave the vindication of the plan of "A Subscriber" to its author. We will say this, however, that if there is any truth in the old maxim, that "every man is to be trusted in his appropriate calling," it comes from a person eminently qualified, by long experience, by an intimate connection with some of our leading public works, and by the reputation, at least, of possessing a sound judgment, to speak upon this matter. He is the last person to speak without mature consideration. We believe that his plan possesses great merit. He is almost the only person who has written upon this subject, who has discussed it in a rational manner. The great question in the success of the road is that of *means*, and we think his plan would secure these without involving the

government in the matter. Such a connection we all wish to avoid, if possible.

We must say, that although we have read a good deal that has been said by Mr. Whitney and his friends, we are yet to find the first particle of valuable evidence in all that has been put forth. From the beginning to the end, everything has been assumed that should have been proved. "A Western Man," in adopting Mr. Whitney's plan, has fallen into his track—not of reasoning, but asserting.—For instance: "A Western Man" says that "*no other plan has been found to be feasible.*" Now we should like to know how a plan for a work of such an immense magnitude, as that of a railroad to the Pacific, may be pronounced feasible, when not even the first step has yet been taken for an examination of the route, or for the purpose of putting it to the test, or before it has even received the sanction of law? When people indulge in such extravagances as this, they must expect to weaken the confidence of sensible men in their opinions.—The feasibility of a scheme must be *demonstrated*, before this can be affirmed of it; and success in the thing, only, is demonstration. But if we waited for absolute proofs, we should not commence it at all. We therefore take for our guide the best secondary evidence that exists; and this is furnished by the experience of those who have carried to a successful termination, works similar to the one proposed. This is an universal rule observed in the execution of every work, either great or small, and is founded on common sense as well as experience.

To say that Mr. Whitney's scheme is feasible, is to beg the whole question. He has furnished not a particle of the proper reliable secondary evidence. A company of New York merchants, who should attempt, without acting under the instruction of an engineer, to build a railroad under circumstances the most favorable for such a work, would be regarded as unfit even to take proper care of their own business, and no matter how much means they might have in the outset, they would soon lose all credit and confidence of the public. The reason of all this is too obvious to need explanation. A man may be an excellent merchant, but a very poor bridge builder. Experience has fitted him for one position, and the lack of it unfitted him for the other.

That Mr. Whitney knows anything practically about the subject of railroad construction, or that he has ever given any attention to the theoretical part of it, we presume he will not claim. In coming before the public, therefore, with the greatest project ever yet conceived in—the work of railroad construction—would it not be reasonable to expect to find the correctness of his positions, in matters coming within the scope of the engineering profession, vouched by the proper persons. How is the fact? Mr. Whitney seems to think that *his* scheme obviates all necessity of engineering. He says it will not do to wait till the whole line is surveyed before the work is commenced, for fear that in the mean time the lands necessary to furnish the means will all be taken up for settlement.

If, instead of acting without the advice of engineers, he had unfolded his scheme to some sensible member of this profession in the outset, and followed his advice, only two persons would have ever heard of this *great* project, which has cost him so much labor, the community so much time, and Congress so much annoyance. The whole engineering profession, as far as our experience goes—and we have pretty good opportunities of meeting

its members—pronounce it an unqualified humbug. Certainly the opinion of so large a body, composed of our most intelligent, practical and best educated men, should weigh something against the opinion of one who, we presume, does not pretend to any knowledge in this department of science.

"A Western Man" says that Mr. Whitney "has ascertained himself where all the streams can be bridged," etc., etc. Now this assertion is entirely gratuitous, and without any sufficient foundation in fact. The only time that Mr. Whitney ever visited any portion of the route of the proposed road, west of the Mississippi, was a few years since, when, in company with a parcel of boys, he made a flying trip over a portion of the territory between the Mississippi and Missouri rivers. The idea, that on such a trip he ascertained, or had any means or opportunity of ascertaining, (even if he possessed suitable qualifications and experience for this purpose,) the proper points for bridging all the streams, is too preposterous to be uttered. With the exception of the point of crossing the Mississippi, at Council Bluff, Mr. Whitney, we presume, cannot point out a line within one hundred miles of the route he would be compelled to adopt. His route, he has always stated, must depend entirely upon the position of the unoccupied lands. It is now going on six years since he made his tour of observation, and we all know how rapidly western settlements have progressed since that time. His whole scheme is based upon finding a sufficient quantity of public lands on his route. In relation to this, we give the following from his memorial to Congress, dated March 17th, 1848, nearly three years since: "*But if the commencement be delayed even for a few months, the lands on the first part of the route (upon which all depends) will be so far taken up as to defeat it forever.*" Since that time years instead of months have elapsed. All that he predicted has taken place, and vastly more. All southern Wisconsin and a large part of Iowa have been occupied, and no lands are left for the road on any practicable route. Why should Mr. Whitney's scheme be urged, when, upon his own testimony, the time has long since gone by in which its accomplishment was possible?

Mr. Whitney further states in his memorial to Congress, that "Of the entire route 1200 miles are without timber even sufficient for the construction of the road. A great part of this distance is without stone or material for such a work, or for the settlement of the country; and the road must be the only means of transit, as it would progress, for its own material, as well as for the material for buildings and fences, for the settlement of 1200 miles of the route."

This statement is an untruth too palpable to require refutation. If it were true, the construction of the road would be impracticable. The idea that a railroad can be built, and settlement advanced, for 1200 miles, through a country entirely destitute either of stone or timber, and this country is to furnish the means, is an absurdity which shows the author to be better fitted for an insane asylum than for building railroads. The statement was undoubtedly made for the purpose of depreciating the value of the lands, and of influencing, in this way, the action of Congress.

Again, "A Western Man" says that "Mr. Whitney's scheme offers *no inducement to the speculator.*" Let us look at this matter. What is the scheme? Mr. Whitney says that for the first 800 miles, one-half of the lands set apart, viz: a strip thirty miles wide, will build the road for this distance. So

much he is to have as fast as he goes along. The road for this distance at his estimate, \$30,000 per mile, will cost \$24,000,000. Now we presume that even "A Western Man" will admit, that the land for the first 400 miles will be worth twice as much as the western portion of the 800 miles. The further we go from navigable waters and from settlements, the less valuable the lands become. It is well known, too, that as we go west, they are constantly becoming less and less fertile. The cost of constructing the first 400 miles would not be one-half the cost of the last 400 miles. If, then, the 30 mile strip will furnish means to carry the road 800 miles, the first 400 will furnish \$16,000,000 of the \$24,000,000, while the cost of this distance will be only \$8,000,000. The last division will cost \$16,000,000, and furnish but \$8,000,000. We may not have stated the exact ratio; in fact we are convinced we have made it too much in favor of the last 400 miles. Whatever the ratio may be, we have stated a principle applicable to the case; and the speculative character of the scheme bears an exact proportion to the difference between the cost and value of the two respective divisions. Allowing, therefore, his premises to be correct, we have no doubt that he will have accumulated at least \$10,000,000 upon reaching a certain point in the first 800 miles.

The question then arises, what, in such an event, will Mr. Whitney do? The bill provides that he may knock off work when he chooses. What will be the alternatives presented to his mind, when he has reached the point where the cost of proceeding is greater than the value of the lands which he can take? If he stops he has made \$10,000,000. If he advances he must undergo a steady process of depletion, till he has expended every cent of this sum, what he would do under these circumstances every person must decide for himself.

How is it on the Pacific coast? As soon as his bill becomes a law, he despatches a messenger there, and selects a terminus to suit himself. He then builds ten miles of road. This gives him a strip of land 60 miles long and 5 miles wide, embracing the finest harbor on the coast. After this is secured he abandons work there. Now 60 miles of seacoast, with the finest harbor in Oregon or California, would be at least worth \$10,000,000. This sum, therefore, Mr. Whitney will have pocketed when he shall have built ten miles of the Pacific portion of the road. He would then have \$20,000,000 instead of \$10,000,000 as an inducement not to proceed. We would ask "A Western Man" whether he is willing to throw into the hands of a private individual, our best harbor on the Pacific coast, and place before him such inducements to defeat the very object which he is proposing to accomplish. Mr. Whitney asks for the grant, to him and his assigns. Who are his assigns? for he must assign it as soon as the bill becomes a law, to get the means to build the first section. Suppose that after such assignment Mr. Whitney should die, would the assignees be under any of those honorary obligations to carry out the original intent of the grant, or push the work further than they found it for their interest to do so? Is it policy to make this grant in such a manner that it might in a day pass into the hands of strangers? Mr. Whitney says that over this road is to pass the commerce of the world. Should the selection of a route that is to perform this grand office be left to some unknown person who may act as caprice or self interest may dictate? We cannot expect that Congress will lend its aid to more than one scheme. If it

sanctions Mr. Whitney's, all others for the present must be abandoned. We therefore surrender to him the privileges, as far as the route can do this, of controlling the commerce of the world. Is this not giving too much power to one individual?—What are his qualifications that fit him for this great office? We are opposed to despotic power, and we do not believe in investing in one person supreme authority in commerce, any more than in society. The former would be much more to be dreaded than the latter, as the former gives us bread, while the latter can only dictate the mode of eating it.

Mr. Whitney claims it as the great merit of his scheme, that it will provide its own means, that it will build itself without embarrassment to business. To accomplish this, there is one of two modes to be followed—either to sell the land to actual settlers, who are to construct the road for payment, or to sell for cash, and build with the proceeds. The former we should judge was Mr. Whitney's plan. The time that it would take to build the road in this manner, can only be a matter of inference. We know that our richest communities can afford to invest only a small part of their gross incomes annually, without bringing on commercial disasters and bankruptcy. The reason of this is, that the net earnings of industry bear but a very small ratio to the gross earnings. No community can regularly invest 10 per cent. of its income, without disturbing the arrangements of business. Certainly neither the poor people of this country, nor the pauper emigration from Europe, can do more than this. It would require, if this plan should be followed, ten years to build the first ten miles. These poor emigrants, it must be borne in mind, in addition to the ordinary burdens incident to new settlements, will be compelled, according to Mr. Whitney's statement, to transport over this road all the materials for the building, (including even the necessary stone,) and for fences. How fast settlements can progress under such circumstances, and how fast a railroad would move along which was to be constructed by a people so situated, we leave it for our readers to determine. We know that a number of the western states actually failed in their attempts to construct works of trifling magnitude compared with the above. If great states, full of wealth and people, were unequal to the task of executing a few petty lines, what must be the fate of this vast project, dependent upon a handful of people, without credit and without means? If, on the other hand, Mr. Whitney sells the land for money to actual settlers from the eastern states, this mode of raising the means will affect the money market just as much as if the loan should be negotiated in Wall street. Wherever the settlers should come from, the money for the road would in effect be furnished from the Atlantic cities. The financial crisis of 1835-6 was in part caused by the enormous sums required to pay for western lands. A similar state of things would produce similar results. Mr. Whitney in this matter makes a difference without a distinction. In every event, either New York or London must furnish the means. If it become a government work English capital will build the road. This is the great argument that Mr. Degrand urges for having government undertake the work; the reason that it would introduce into this country \$100,000,000 of foreign capital.

But suppose that Mr. Whitney gets his grant,

and sells his lands at auction, how long will it then take him to build the road? Some estimate may be formed of the probable receipts from the lands appropriated to this work, from the aggregate receipts from all the sales of our public domain. These, for the past year, were \$1,850,000; they are estimated \$1,950,000, for the coming year; we will put the receipts at \$2,000,000. We think that the receipts for the isolated portion set out to Mr. Whitney could not equal more than one quarter of this sum. This would give \$500,000 annually, applicable to his road. This sum, at \$30,000 per mile, would give 16½ yearly. At \$50,000 per mile, which is a more reasonable estimate, it would build 10 miles per year. At this rate, it would take him something more than two hundred years to build his road—a little longer period than we are willing to allow.

We must ask "A Western Man" to pardon us for not joining him in his rhapsody upon the marvellous achievement of Mr. Whitney, who, to use his own language, "has examined in person a large distance of the country through which his great work will pass, has ascertained himself where the streams can all be bridged, and also ascertained where materials, timber, &c., can be had, as well for the road as for the necessary wants for settlements, where they do not exist—the man who has visited all the most important commercial parts and places of the Globe, to ascertain the position and condition of the people, with their commercial capacities and statistics, who has arranged a geographical, political and commercial division, of the Globe, which exhibits the position, condition and wants of the entire human family, connected with and upon which is based the conception of his great project, the grand object of which is to change the condition, as his arrangement shows the relative position, of the entire human family." Our stilts are not tall enough to get up to this pitch. We must therefore leave the above unanswered. But admitting it to be true, what a vast and mysterious secret does Mr. Whitney carry in his bosom? for we have never been able to detect in all that he has said or written, the slightest trace of this "great arrangement," which illustrates the "position, condition and wants, of the whole human family," and "the rest of mankind." How we burn to have this great chart unfolded before the world. Is this Globe still to hold together? Are nations to be divided? Are new boundaries to be assigned to empires? Are the new arrangements based upon distinction of races, or upon climatic, or geographical peculiarities? What system of polity is best adapted to the Bushmen?—What to the sprightly Frenchmen? What races exist in the interior of Africa? Is there such a city as "Timbuctoo"? What is the ultimate form of government best adapted to the race? What are the true systems in Theology, Law, or Medicine? Why does Mr. Whitney suffer the whole world to go distracted with asking all these questions, without reply, when he can answer the whole as soon as one can say "Jack Robinson"? Let us rejoice that a man has at last appeared, who can answer the question, "What is truth?" For, certainly, the person who is able to exhibit the "position, condition and wants of the whole human family," is not to be nonplussed by such a trifling question as this. Again, we entreat Mr. Whitney to tell us, whether all the world will consent to his "arrangement." Will any prove contumacious? And if so, what "committee of safety" is to secure law and order? Will commerce desert all its old

channels, too, at his nod, for the new ones provided by him? Will all the world consent to receive their "bread," and "butter" too, from the United States? Between what high contracting parties were these vast arrangements concluded? How soon is the new order of things to take place? If Mr. Whitney possesses a particle of humanity, he will at once settle all the questions as to man's wants—a subject which has distracted the world since the creation, and has caused ninety-hundredths of all the misery and bloodshed with which the world has been afflicted. "We pause"—anxiously "pause for a reply."

We are just as blind to the merits of Mr. Whitney, as the inventor of this great "idea" of a railroad to the Pacific. We are irreverent and ill-natured enough to question his claim to originality even in this matter. We will suppose (thank Heaven it is not so!) that Mr. Whitney had never lived. Let us see whether it were possible that this idea could ever have dawned upon the world. Mr. Whitney did not invent railroads; his discovery is in the mode of applying them. Now, (Mr. Whitney being non est inventus), gold is discovered in California, and the whole world rush thither. But that country is a great way off, and to reach it requires a long and tedious voyage by sea, or a journey on foot by land. Now, is there not a possibility, that some person, wearied with this journey, and discouraged at his slow progress, would, on recollecting the luxuries of travelling in the states, at 40 miles an hour, on a good stuffed seat, have uttered some such an idea as this—"Hang it, I wish I was on a good railroad!" If this idea would have occurred to any person so situated, then Mr. W.'s claim to any merit of originality is completely upset. The truth is, that the use of railroads was no sooner discovered, than their adaptation to all the purposes and routes of commerce or travel, were seen and admitted by every person, wise or simple. The idea of a railroad to the Pacific, is about as original as that of one from Boston to Albany, not a whit more so. With regard to the originality of the plan for its construction, we will admit that Mr. Whitney is alone here. No sensible man would have ever put forward a similar one, if he had intended to build the whole road; and few would have had the audacity to present such an insulting proposition to the American people, who wished to make the project a matter of speculation.

Again, Mr. Whitney offers to take the whole risk of the accomplishment of this great work upon his own shoulders!!! Stupendous self-sacrifice!—to consent to accept of a position where he can make \$20,000,000. This is the measure of his risk. What is the risk of government? It is that of indefinitely postponing this work, if his plan is adopted, and of losing what he by his plan has a right, a legal right to retain.

We have thus adverted to some of the leading points in Mr. Whitney's plan, referred to by "A western man." In what we have said we have exposed but a small proportion of its absurdities. Those which relate to the cost of construction and transportation, are still more glaring. The whole of it is a mere castle-in-the-air, a creation of the imagination. Its favorable reception is due to the popularity of the subject, and not to the merits of the scheme. From the outset we saw its absurdity, and we felt under greater obligations to oppose it from the fact, that it had received the general encouragement of the press—a support it

never would have received if its merits had been properly discussed. In saying what we have we mean no disrespect to Mr. Whitney. We do not call in question his motives, only his *opportunities*. If he will frame his bill in a proper manner, he may have the privilege of trying his experiment without at least any opposition from us.

Maine.

Atlantic and St. Lawrence Railroad.—The stockholders of this road have had an informal meeting at Portland to consider a proposition of the directors to issue bonds to the amount of \$725,000 so that the road may be opened through to Montreal in July, 1852, or in season for the fall freights of that year. The discussion turned upon the question of issuing the bonds at par, or at a small discount. Many gentlemen expressed their opinion that the whole amount could be readily raised, and Mr. John M. Wood offered to lead off the subscription with \$25,000 on his part. The meeting was not a regular one, and we do not perceive that any positive vote was passed, but the Portland Advertiser states that a large number was present, and that the entire opinion was in favor of the success of the project.

Ohio Central Railroad.

One of the leading projects in Ohio at the present time, is the **Ohio Central Railroad**, extending from Wheeling, through Zanesville, Newark and Columbus, to the western line of the State. The final location, and the prospect of a speedy completion of the Baltimore and Ohio railroad, and the prospective completion of the Hempfield railroad, from Greensburg, on the Pennsylvania railroad, both of which terminate at Wheeling, have given to the Ohio Central road, which is one of the western extensions of these two great lines, a conspicuous place among the enterprises of that State. We cannot doubt that the people of Philadelphia will take immediate measures to build the Hempfield branch railroad, however this may be opposed by Pittsburg, for the purpose of connecting herself with the roads of central and lower Ohio. From Wheeling onward, therefore, the Ohio central will constitute the trunk lines of these roads, which are the two great avenues to Philadelphia and Baltimore.

From Zanesville to Columbus, a distance of 55 miles, the whole line is under contract, and negotiations are now in progress for the iron for this portion of the line. Ample means are also provided for the eastern division of the line from Zanesville to Wheeling; so that by the time the Baltimore and Ohio shall reach that point, a continuous line of railroad to Cincinnati will be in operation. West of Columbus, measures are also in progress for the extension of the above line to the State-line of Indiana, for the purpose of connecting it with the lines of railroad running west to St. Louis, but the line that will be adopted for this purpose has not been definitely determined upon.

The above road traverses one of the finest, and probably the richest portions of Ohio. Its line will be nearly identical with that of the national road. It is therefore properly regarded as a part of the great line of railroad following this route to the Mississippi river, upon the construction of every portion of which companies are actually engaged. The completion of the section from Zanesville to Newark will open a direct railroad communication with the lakes, and at Columbus, with Cincinnati and the Ohio.

The Stock and Money Market.

Money continues in the same abundance as at the close of last week, though many of the fancies are somewhat lower. With these a fall is just as natural a state of things as a rise; as both may depend upon causes very different from their intrinsic value.

Railroad securities are coming pretty freely into the market, and sell with as much facility as they have for some time past. Good seven per cent. western railroad, and county bonds, sell from 85 to 90 per cent net; the vast amount which have already been disposed of here, appears to have had no effect in tightening the money market. The mode of raising money in New York for these works is much more favorable in its influence upon the market, than that pursued in Boston, in building the New England railroad. The capitalists of Boston subscribed very largely to the stocks of railroads. The rapid decline in these stocks impaired the means of those holding them, just in proportion to this decline. New York on the other hand does not furnish the means for building the roads in other parts of the country, by subscribing to their stocks, thus taking the risk of their success, but by loans. These loans are generally made upon ample security, and will always command the amount for which they were purchased. If the road is unsuccessful the loss falls upon those who constructed it, and as the portion which they contributed to the road, represents their own labor, and the products of their farms, the loss of this is not felt to any great degree in our monetary centres. These securities too, go abroad for investment as soon as their character becomes well established, and this constantly tends to relieve the market. These are some of the reasons why the money market of New York is so easy in face of the vast amount of securities coming here for sale. In addition to this, every mile of railroad opened in the United States, adds directly to the business of this city, and increases in the same degree its means for investment. The great thing which threatens to disturb the present state of the money market is an excess of importations, which may soon require extensive shipments of specie. This would soon put a different aspect upon affairs. All our public works are now carried on upon credit, and any event which should impair credit, would check their progress. Banks are simply the machinery of credits; the mode by which they are made available, and the moment these become clogged, the whole system is, to a certain extent, at an end. It is this fact which renders the tariff, a question of finance rather than protection. The rates of duties should always be subordinate to this paramount consideration. Freedom of trade should always be encouraged as far as possible. Admitting the general axiom of free trade, that we should always buy where we can buy cheapest; yet no doctrine from this school tells us that we should buy more than we can pay for. If we import more than we export, we get into debt, and to pay this debt, we must take a portion of our accumulated property. But foreign creditors will take the balance of our indebtedness only in gold and silver, which among nations as well as individuals, is alone "lawful tender." By sending away in precious metals we send away the agents by which property is exchanged from hand to hand. This depreciates in value just in proportion to the difficulties of effecting an exchange for money. If we should lose all our money, exchanges would have to be effected

in "kind." The difficulty and expense of doing this would reduce property to one tenth of its present value, and society, in its present organization, would relapse into its condition of a thousand years ago. The tariff should be so arranged that at the end of every year, our books should shew one cent in our favor, in the aggregate of our foreign trade. This it strikes us is the true rule to be followed in laying duties. It is one, that all parties, both free trade and high tariff men, can meet; and it will protect us alike from the evils of over trading and these resulting in the stimulus of too high a protection. The same rule will in the long run produce the greatest amount of revenue, because the amount exported exactly measures our ability to pay.

SALES OF STOCK IN NEW YORK.

	January 3. Sales.	January 10 Sales.
U. S 67 Loan	116½	116½
Erie 1,756	106½	105½
"Income Bonds	99	99
"1,768	108½	
Del. & Hudson	140½	
Erie R.R.	93½	91½
Reading R.R.	76	71
L.I. R.R.	14	13½
Hudson R.R.	71½	71
Stonington	57	
Norwich & Worcester	68½	66
Albany & Sch'y R.R.	97	
Hudson River	85	86

The above shews a large decline on some of the "fancies," principally confined to New York and Erie, the Reading and Norwich & Worcester. This decline is not to be wondered at, after the recent rapid upward movement, based chiefly on speculation, and not upon any new feature in these stocks. The Erie is very unsteady upon its lotty pedestal, and we think that the recent rise in this stock is injurious to the best interest of the company, as the constant fluctuation which it will undergo will have a tendency to throw a certain degree of odium and discredit upon it. The community would have been just as well off with this stock at 75 as at 95, and a slow and gradual improvement would, based upon the evidence of the capacity of the road for business, would have exerted a much healthier influence. The financial affairs of the company must have been managed with great ability, to have so completely secured the confidence of the public, and in this manner to have laid the foundation for obtaining the necessary means for its construction. It is, and decidedly so, the pet project of this city, and its completion is of vast importance to it. Its able management, and the importance with which it is regarded, have probably had more to do with the price of the stock, than its business prospects, vast as they may be. This confidence has taken up a very large amount of the stock for investment, so that a small portion of it only is in the market, not too large a load for the Bull and Bears to carry, and make the instrument of their own schemes. The earnings of this road for the past month have been as follows:—

From Passengers and Mail	\$67,568 24
From Freight	82,417 61

Total	\$149,985 85
Same month in 1846	89,591 78

Increase	\$60,394 07
Rec'ts for year ending Dec. 31, 1850	\$1,600,173 29
Rec'ts for year ending Dec. 31, 1849	805,053 47

Increase	\$794,119 82
In regard to the Reading there is evidently a feeling of uncertainty as regards the future. The	

road has earned an enormous amount the past year, under peculiar circumstances. If it can do as well the next with the increased competition it must encounter, its complete success may be regarded as established.

The bids for the sale of the 6 per cent First Mortgage Bonds of the Rutland and Washington railroad, on Saturday last, resulted as follows:—

W. B. Guild	\$5,000—90
W. B. Guild	5,000—88½
Wm. Jessop & Sons	25,000—87½
Wm. Jessop & Sons	10,000—86½
Wm. Jessop & Sons	10,000—88
P. Van Zandt Law	5,000—88
P. Van Zandt Law	10,000—88 60-100
Nathl. R. Cobb	20,000—86
Cammann & Whitehouse	5,000—85
Cammann & Whitehouse	5,000—85½
Cammann & Whitehouse	5,000—86
H. Holdridge, Jr.	3,000—86
Geo. Opydyke & Co.	20,000—86
Geo. Opydyke & Co.	25,000—85
Geo. Opydyke & Co.	37,000—84 98-100

Total.....\$190,000

The following shows the relative prices of a few of our leading stocks in the first of Jan. 1849 and 54:—

	Jan. 1849.	Jan. 1850.
Government 6s, 1867	108	115½
Harlem Railroad	59	69½
Canton Company	37½	61½
Farmers' Loan	32½	66½
Erie Railroad	62½	89½
Morris Canal	9	22½
Long Island Railroad	24	13½
Mohawk Railroad	77	95
Norwich and Worcester R.R.	34	66½
Reading Railroad	28½	75½
Stonington Railroad	50½	54
New York and N Haven R.R.	94½	118½
Erie First Mortgage Bonds	91½	107½
Reading Mortgage Bonds	55	85½

In Boston the Stock Markets appears to be considerably improving.

The following are the sales of the 9th instant:—

	Jan. 2.	Jan. 9.
Eastern railroad	100½	100½
Ogdensburgh railroad	39½	40½
Old Colony railroad	66½	67½
Vermont central railroad	37½	38
Western railroad	102½ a 102½	102½
Boston and Worcester railroad	101½ a 101½	101½
Cheshire railroad	64	64
Concord railroad	54½ a 54½	54
Vermont and Massachusetts railroad	31 a 30½	32½
Michigan central railroad	96	90
Boston and Maine railroad	103½	103½
Rutland	b 4 m 60	60
Rutland railroad bonds in 1853	90 a 90½	93
Fitchburgh railroad	108½	109½
Vermont central railroad bonds, in 1850	91	94

The gross income of the Rutland and Burlington Railroad for the past half-year, was \$155,800 91. The expenses were \$51,255 10, leaving the balance of net earnings for six months \$104,045 81, which is equal to \$208,091 92 for twelve months.

Below we have the prices of some of the Massachusetts Stocks for the four past years.

	Nov. 1. 1847.	Nov. 1. 1848.	Nov. 1. 1849.	Dec. 19. 1850.
Bost. and Lowell	116	108½	116	117
Boston and Worcester	121	106½	98½	105
Boston and Prov.	105	86½	91	88½
Connecticut river	101	97	90	81
Concord (10 per cent. stock)	63 par 50 58			54½
Eastern	110½	102½	101	104
Fall river	91	84	81½	91
Fitchburgh	125½	110½	108½	113½

Northern N. H.	102½	87	62	74
Norwich and Worcester	40½	82	35½ pfd	64½
Old Colony	100½	83	76	66
Portland and Saco	100	96	—	97
Reading	27½	16½	16½	37
Vermont and Mass.	76	42	28½	31½
Vermont central	88	50½	45½	37
Western	113	99½	104½	105

The late Annual report of the Boston and Lowell Railroad Company shows the following results:

The receipts for the year ending November 30th, were	\$406,421 00
Expenses	256,508 13

Net earnings, \$149,912 87

Expended as follows:

Dividends July and Jan.,	\$146,400 00
Balance of interest account,	1,375 90

Surplus \$2,136 97

The balance to credit and transportation

November 30, 1848, was	\$159,852 81
Add surplus as above..	2,136 97

\$161,989 78

From which deduct the dividend of 4 per cent. payable January 1, 1851.. 72,200 00

Surplus \$88,789 78

As compared with the previous year the receipts show a decrease of \$10,067. The diminution is in the receipts for merchandize generally and from such passengers as have been carried in connection with other railroads. the loss upon the latter is attributed to the diversion of travel consequent upon the opening of new lines, and that upon merchandize may be accounted for principally by the state of business in the several manufacturing establishments on the line of the road. The running expenses have diminished \$4,395 54.

Panama Railroad.

Philadelphia, Jan. 6, 1851.

H. V. POOR, Esq.

Dear Sir—Owing to some irregularity in receiving your Journal last month, in consequence of my change of residence from the Isthmus of Panama to Philadelphia, your number of Dec. 14 did not come to hand until to-day.

I perceive in it an editorial article to which I must beg leave to take some exception.

In the first place, the ascribing of my resignation of the office of Chief Engineer of the Panama railroad, to ill health, is erroneous. That my health did suffer slightly is true, but that I was thereby induced to resign, is no so.

I resigned, chiefly because I found that there did not exist between the Board of Directors and myself, that unanimity of opinion on certain points involved in the construction of the work, which I considered not only desirable, but absolutely necessary to a harmonious co-operation.

The idea expressed in the article alluded to, that the best mode of consummating this project would be to let the work, at stipulated prices, to good contractors, is, likewise, in my opinion, not well founded. There are in that locality, as also in those of the Nicaragua and Tehuantepec routes, many sources of expense which nothing but actual experience can possibly develop; and it should certainly devolve upon the companies who are ultimately to reap the advantages accruing from the completion of these works, to assume such unlooked-for expenses as may occur. Any contractor who may be so over-confident as to undertake heavy portions of either of these works, assuming to himself the responsibility of unforeseen occurrences, will undoubtedly meet with disap-

pointment, although his prices may appear exorbitant. My observations upon the Isthmus for one year, and upon other portions of the province of New Granada for five years, enable me to venture this prediction with entire confidence in its verification; and I am happy to have it in my power to proffer this word of caution to contractors. No matter how extended their experience in the United States may have been, it will not serve to secure them against failure in that country.

Again, how far your remark, that "*when men receive a fixed salary for their term of service, all experience shows, that their principal object of anxiety will be to see how little labor they can perform for their pay,*" may apply to myself, I cannot with propriety determine, but it is with sincere gratification that I can assert its entire inapplicability to any of the gentlemen who occupied positions on the work subordinate to mine.

Mr. Baldwin, my principal Assistant Engineer, and Dr. Rogers, principal Superintendent, remained at their posts although seriously indisposed, at the peril of their lives; and, regardless of my repeated solicitations, declined leaving them, until I was compelled to withdraw them temporarily to recruit their health, fearing lest the work should otherwise permanently lose the benefit of their services. Drs. Gage and Totten, of the Medical Corps, repeatedly left their own sick beds to administer to the necessities of the workmen, although conscious that their so doing must cause a relapse of their own fevers. In a word, all the officers, without exception, evinced the most thorough determination to discharge faithfully their respective duties, without the least apparent regard to considerations of personal comfort and safety; and that too with a zeal, that showed that their mere salaries did not constitute their motive. I consider it a matter of duty to make this acknowledgement to those gentlemen, as well as to Messrs. Putnam, Borland, Holcomb, and others, whose steady attention to their different departments, under circumstances the most discouraging, merits the highest approbation.

When one year shall have elapsed from the commencement of the Nicaragua and Tehuantepec routes, we may, with some safety, institute comparisons between the healthiness of those lines and that of the Panama road; as also the respective degrees of progress made upon each within that time; but until then, I conceive it to be premature to adopt the idea that the result will prove signally unfavorable to the Panama line. I shall be much surprised if the same drawback be not found to operate to about an equal extent in each instance; inasmuch as all present the same general aspect, of rivers in a tropical region flowing through a wild and luxuriant vegetation, liable to overflows, and to the effects produced by a long rainy season upon the accumulated vegetable deposits of ages.

Unfortunately, most of the information(?) on this country, conveyed to the public through the medium of the public prints, is derived from persons who have left their homes for the first time, and who, being at the same time afflicted with a "*cacoethes scribendi,*" and carried away by the novelty of the scenes by which they are surrounded, lose sight of all plain, matter of fact, business views of things, and dilate chiefly upon lemons, oranges, pine-apples, palm trees, monkeys and parrots—varied (by aid of a little poetic imagination,) with digressions to inexhaustible gold deposits, and occasional gleams of paradise; whereas the more experienced traveller sees but little opportunity for

pecuniary investment in any of these objects, and considers the country, in its present condition, more aptly comparable to another spot mentioned in Holy Writ, much less desirable than paradise for a permanent residence.

Under all the circumstances involved in a consideration of the rival routes, which at this moment occupy so prominent a position in the public regard, I look upon it as morally certain, that, under equally favorable management, the Panama road may be completed considerably in advance of either of the other projects.

Laying no stress whatever upon the asserted [but in my opinion unfounded,] advantages of the other routes, as to facility of execution, I regard the comparative shortness of the Panama line as affording the best guarantee of its more speedy completion. Its length is but 46 miles from ocean to ocean, whereas the Tehuantepec route will be about 150 miles; and that of the Nicaragua ship canal from about 175 to 275 miles, depending upon whether its termination on the Pacific side be ultimately fixed at San Juan del Sur or at Realego. However, about 50 miles of this will be by way of Lake Nicaragua, in the former case; or about 100 in the latter. Still, either of these projects will involve an extent of artificial construction, at least about three times as great as the Panama line; and they present no local facilities that can possibly counterveil this disparity of length.

There seems to exist what I consider an overhasty disposition in the advocates of all these lines, to commence at once with their permanent works, instead of first constructing thoroughfares of a more temporary and inexpensive character—as, for instance, plank roads, or Macadamised ones. These will, I am confident, be found at least expedient, if not absolutely necessary, for the conveyance of materials of construction, provisions, &c., for the several works; and will at the same time fulfil all the requirements of travel and commerce, until the more substantial structures shall be completed. It is absurd to suppose that any particular route will be permanently preferred, merely because it may happen to be the first one finished; and equally so to expend money too freely with a view to effect that object. Even at home, this common haste to open lines to the public, has almost invariably been attended with an increased expenditure for repairs in the end, that has more than counterbalanced the supposed advantages.

The effect which the Nicaragua ship canal, if ever executed, will exert on both the Panama and Tehuantepec routes, will certainly be to withdraw from them all heavy transporting business, whether between different sections of our union, or North and South America, or between the two continents. But the length of time necessary for the accomplishment of that really stupendous enterprise, must necessarily be so great, that I cannot regard it as furnishing grounds for serious apprehension to any of the present generation who may feel disposed to embark their capital in either of the other two works. I do not believe that a ship canal will be made between the two oceans. If it should, it must be by means vastly disproportionate to any which I have yet heard suggested as likely to be brought to bear upon the project. That something of the kind will be undertaken is by no means improbable; but that it will be consummated I look upon as more than problematical. Both the Panama and Tehuantepec railroad lines may be constructed within a comparatively very short period; though by no means with the expedition

with which similar works are carried on here or in Europe.

There will be quite enough business amply to compensate the projectors of both works for any expense that may be encountered for carrying them into effect. Who shall pretend to estimate the travel and commerce that must soon take their way through those channels; or who so thoughtless, as to weigh them against the amount necessary to pay for the construction of two trifling railroads, even though constructed under disadvantageous circumstances?

Allow me to trespass a little longer on your patience, while I descend from matters of more general import to others involving purely personal considerations. I have, since my return, been repeatedly asked, why so little progress has been made in the actual construction of the Panama railroad, during this first year that it has been under my own immediate personal charge. As the question is one which may very naturally present itself to persons unacquainted with the peculiarities of the case, I will answer it as briefly as I can.

When I first went to the Isthmus, one year ago, it was the impression of the company that it would be advisable to construct first, the western or Pacific division of the road, extending from Gorgona to Panama, leaving the place of the eastern or Atlantic division, from Gorgona to near Chagres, to be supplied for a time by the Chagres river.

With this view I established my headquarters at Gorgona, and commenced the final survey from that point towards Panama in January, 1850. Before proceeding far in this, however, I became convinced that the proper policy of the company (for reasons which it is unnecessary to enlarge upon here,) would be to build the Atlantic division first. On communicating my views to the Directors, they coincided with me in opinion, and sanctioned the proposed change. Thereupon our headquarters were transferred to the Atlantic terminus about the end of April. The time consumed in these preliminary steps was four months, having been protracted to that extent by circumstances to which I suspect that even the most prejudiced reader will attach some weight. For instance, from a month to six weeks had to elapse before I could receive answers to my communications, from New York. Myself, and every officer who accompanied me, had during this interval been prostrated by attacks of fever. All the laborers engaged for the work had deserted, and become transporters of baggage across the Isthmus; and every impediment was thrown in our way by the natives, who, being all more or less directly interested in the present mode of transportation, are of course inimical to the railroad.

On reaching the proposed site of the Atlantic terminus of the road, I found it necessary to examine carefully, as a preparatory step, the entire coast from Chagres to Porto Bello; entering all the various inlets for the purpose of taking soundings, and such other observations as were needed to enable me to decide upon the most eligible spot.

This being done, the erection of a frame store-house, which had been previously written for to New York, was commenced, along with the clearing of a space for other buildings. The progress of the store-house was much delayed in consequence of the carpenters leaving for California before its completion; a second gang was obtained with some trouble, but they also left in a few days; and the building was finally finished not in the

most workmanlike manner, by ourselves and some sailors.

At this time (May and June) no accommodation was procurable for ourselves and our workmen, except a small brig. Our laboring force was consequently very limited, and the rainy season having fully set in, converted the earth into a perfect swamp; and moreover prevented the burning of the dense forest which we were attempting to clear. The mosquitoes and sand flies were at the same time so numerous, that it was with difficulty we could induce the laborers to continue at their work—and that only by remaining with them in person, and aiding them during the whole day. These discomforts, together with the stifling heat and myriads of insects in the cabin and hold of our small brig, prevented other sleep than that arising from exhaustion, and frequently compelled us to pass whole nights on deck, in the rain, rather than encounter the annoyances below.

Sickness re-appeared as a natural consequence, producing its attendant delays. In the latter part of June I had the good fortune to purchase the hull of the sea steamer "Telegraph," which had just been condemned as unseaworthy at Chagres; and by this means secured much better accommodations for the persons engaged on the work. At this time, too, Mr. Totten having arrived, I returned to New York, to confer personally with the board of directors respecting the proper means of prosecuting the work when the dry season should commence, in December. During my absence of three months Mr. Totten, availing himself of a temporary cessation of the rain, [of which one always occurs during each wet season,] succeeded in tracing two or three miles of survey, before the re-commencement of the rain again flooded the country, and prevented his further progress; not, however, until he and Mr. Baldwin had for some days persisted in their operations, up to the middle in water and mud.

I returned to the work near the end of September, and Mr. Totten left for Cartagena on business.

The frame houses sent from New York for our accommodation, were pushed forward with all the speed that the intervals between the heavy rains would admit of; but the delays from this source, and from the sickness of our carpenters, [of whom, at one time, but two out of twenty-eight were able to work,] were so great, that they were not ready for occupancy until the beginning of December.

From the time of my return to the work in September, to the end of December, we had but four entirely dry days; and several of the first miles of our route being at that period covered with water, it was impossible to level or lay out the work, much less to enter upon its construction. Dr. Rogers made an attempt, with about forty picked men, to clear the trees from a short portion of the route, that had been staked out by Mr. Totten. The result was, that himself, and every one of his men, were almost immediately disabled by sickness, and their number reduced about one-fourth by death.

This brief and very imperfect outline of some of the difficulties with which I had to contend, will, I trust, be sufficient, at least to exonerate me from censure for not having made more progress in the actual construction of the road, up to the time of my resignation. When I left the Isthmus last month, the rainy season was drawing to a close; and, in accordance with preconcerted measures, materials and men were being sent out by the company in large numbers, with a view to the

energetic prosecution of the road during the dry season. With them are efficient additions to the corps of engineers and superintendents; and we may hope that now the work will be commenced, and carried on with energy to its completion. The public may rest assured, that under the capable direction of Mr. George M. Totten, who is now sole chief engineer of the road, aided by the skilful assistants and superintendents under his charge, all will be accomplished that is possible.

In conclusion, I will remark, that in making this reply to your editorial, I am actuated by no feelings of partiality towards the Panama R. R. Company, but simply with a view of making known the results of a slight experience in a matter of public interest, and which I know to be needed.

I am very respectfully yours, &c.,

JOHN C. TRAUTWINE.

New York and Harlem Railroad.

Capital stock as by charter, old, \$3,500,000; preferred \$1,500,000.....\$5,000,000 00
Amount of stock subscribed, old, \$2,388,750; preferred \$1,500 00..... 3,888,750 00
Total amount now paid of capital stock, old, \$2,388,750; preferred \$1,499,180 00..... 3,887,930 00
Total amount now of funded debt... 365,593 48
Amount now of floating debt..... 212,684 57
Amount now of funded and floating debt..... 578,278 05
Average rate of interest on funded debt 6 1/2 per cent per annum. Cost of road and equipment.....\$4,666,208 05
Length of road laid, 80 miles; length of double track, including slidings, 18 1-2 miles; weight of rail, 58 lbs. per yard.

The Company own 8 engine houses and shops; 17 engines; 33 first-class, 7 emigrant, 8 baggage and 85 freight cars. Miles run by the passenger trains, 214,375.
Expenses of maintaining road.....\$38,278 98
Expenses of repairs and machinery.... 33,394 31
Expenses of operating the road..... 175,045 74

Total expenses.....\$246,719 03
Earnings from passengers..... 324,368 18
Earnings from freight..... 114,405 94
Earnings from other sources..... 43,793 39

Total earnings.....\$482,567 51
Receipts from passengers..... 324,368 18
Receipts from freight..... 112,067 45
Receipts from other sources..... 41,193 38

Total receipts.....\$477,629 01
Payments for transportation expenses. 246,713 03
Payments for interest..... 31,154 71
Payments for dividends..... 210,475 77

Total amount of surplus fund.... \$49,663 02
Accompanying the report the President, Robert Schuyler, Esq., thus explains why certain inquiries are only answered in the aggregate. The cost of the road and equipments are necessarily stated in the aggregate, as the construction accounts were originally kept in a general manner, and no means exists by which the particulars can be ascertained. No reports are made by which the number of passengers or the distance travelled on the lower part of the road can be stated in a reliable manner.

The freight business is conducted to a certain extent by parties under special agreements for the use of cars, &c. The reports from the freighters do not enable the company to make replies in the manner required by the return.

New York and New Haven Railroad.

Capital stock as by charter.....\$3,000,000 00
Amount of stock subscribed..... 2,500,000 00
Total amount paid in of capital stock 2,499,250 00
Funded debt as by the last report—
Railroad, \$654,591 46; Preferred stock of New York and Harlem Railroad Company, \$160,000; other property, \$66,408 54..... 881,000 00

Amount now of floating debt for property on hand..... 37,487 14
Amount now of funded and floating debt..... 918,487 14
Average rate of interest 7 per cent per annum.

Cost of road and equipment..... 3,417,737 14
Length of road, 61 miles; length of double track, 11 1-2 miles; weight of rail, 64 lbs. per yard.

The Company own 5 engine houses and shops, 10 engines, 40 passenger, 12 mail and 75 freight cars.

Miles run by passenger trains, 282,797; number of passengers carried over the road, 652,122; freight, 15,473 tons.

Expenses of maintaining road..... \$26,512 74
Expenses of repairs of machinery..... 47,725 00
Expenses of operating the road..... 163,648 64
Earnings from passengers..... 402,358 17
Earnings from freight..... 26,818 91
Earnings from other sources..... 32,612 23

Total earnings.....\$461,789 31
Receipts from passengers..... 402,358 17
Receipts from freight..... 26,818 91
Receipts from dividends..... 45,412 23

Total receipts.....\$474,589 31
Payments for transportation expenses. 237,886 39
Payments for interest..... 51,555 00
Payments for dividends..... 174,930 00
Payments for surplus fund..... 10,217 93
Total amount of surplus fund..... 13,297 71

The bonds of the Company forming the funded debt have all been issued for the pre-existing indebtedness to residents of the city of New York, for advances on account of construction and for the purchase of property.

The property of the Company, not included in the cost of the road and equipment, consists of Harlem preferred stock (\$160,000) and of the equipment used in operating the canal railroad, (\$183,794 73,) together with the real estate in the cities of New York and New Haven. The present value of the property is estimated to exceed the whole cost.

Chemung Railroad.

Capital stock as by charter and paid in...\$380,000
Funded debt as per last report and same now..... 70,000
Amount of floating debt..... 6,000
Total amount of funded and floating debt. 75,000
Rate of interest paid 7 per cent per annum.
Cost of road and equipment..... 450,000
Length of road, 17 miles. Weight of rail, 58 lbs. per yard.

This road was rented to the New York and Erie Railroad Company on the 15th of January last for a period of ten years, they furnishing the same and running the same in connection with and as a part of the New York and Erie railroad, and paying, charging and receiving profits thereon.

Saratoga and Schenectady Railroad.

Capital stock as by charter and paid in \$300,000 00
Total amount of funded debt..... 42,000 00
Floating debt, as per last report..... 23,365 00
Amount now of floating debt as far as known..... 22,550 00
Total amount now of floating and funded debt..... 64,500 00
Average rate of interest on debt 7 per cent.

Cost of road and equipment..... 396,379 53
Length of road, 22 miles; weight of rail, 56 lbs. per yard.

The Company own two engine houses and shops, two engines, two passenger and one freight car. Miles run by passenger train, 15,576; passengers carried over road, 99,817; freight, 4,434 tons.

Expenses of maintaining road..... \$4,209 99
Expenses of repairs of machinery..... 985 84
Expenses of operating the road..... 10,598 41

Total expenses.....\$15,794 24
Receipts from passengers..... \$13,728 33
Receipts from freight..... 3,902 27
Receipts from other sources..... 11,305 11

Total receipts.....\$28,935 71
Payments for transportation expenses.. 15,794 24

Rensselaer and Saratoga Railroad.

Capital stock as by charter and paid in.....	\$800,000 00
Total amount now of funded debt.....	185,500 00
Amount now of floating debt.....	4,379 00
Total amount now of floating and funded debt.....	189,879 00
Average rate of interest on debt 7 per cent.	
Cost of road and equipments.....	687,324 47
Length of road, 25 miles; weight of rail, 58 lbs per yard.	
The Company own two engine houses and shops; four engines, eight passenger, two emigrant, three mail and baggage, and twenty-four freight cars. Miles run by trains, 45,413; number of passengers carried over road, 10,560; freight, 10,610 tons.	
Expenses of maintaining road.....	\$10,846 15
Expenses of repairs of machinery.....	13,065 43
Expenses of operating the road.....	23,777 04
Receipts from passengers.....	84,463 58
Receipts from freight.....	16,547 66
Receipts from other sources.....	11,715 53

Tot l receipts.....	\$112,726 77
Payment of transportation expenses.....	47,688 62
Payment of interest.....	6,535 75
Payment of dividends.....	9,000 00
Payment to surplus fund.....	6,000 00
Payment to S. and S. RR. Co. for use of track.....	14,230 59
Payments for additions to property, construction, &c.....	6,252 30
Payment for bridge.....	438 96
Payment for new cars.....	6,273 20
Payment for horse power.....	2,976 99

The Western Bank at Springfield, Mass., has declared a dividend of 2 per cent. from the earnings of the last three months, payable on demand.

Ship Building in 1850.

Below we give a detailed statement of the number and tonnage of ships built at this port for the past year, together with the names of parties by whom and for whom they were built:

AT NEW YORK.

	Ton- nage launch- ed.	Ton- nage on stocks.
BY WM. COLLYER.		
Steamship Mexico, for Harris & Morgan, (mate to the Louisiana).....	1,200	
Steamer St. Lawrence, for the Portland Steam packet co.....	700	
Steamboat Chingarora, for the New York and Keyport, N. J. route.....	400	
Two lighters for Thos. Hunt.....	100	
Schooner for Capt. Johnson.....	125	
Total.....	2,400	125

BY THOMAS COLLYER.

Steamboat Island City, for the builder.	250	
Steamboat Reindeer, for Jas. Bishop & Co.....	850	
Steamboat Thos. Collyer, for the Washington and Alexandria Steamboat Co.....	250	
Steamboat Magnolia, for the St John's Ga., river.....	300	
Steamship Carribbean, for Howland & Aspinwall.....	1,700	
Steamer for Russell Sturges, Esq.....	450	
Steamer for B. & B. F. Betts.....	200	
Steamer for Thomas Collyer.....	400	
Total.....	3,350	1,050

BY GEORGE COLLYER.

Steamboat Jenny Lind, to run between New York and Astoria.....	100	
Total.....	100	

BY J. SIMONSON.

Steamer Director, for the Nicaragua Company.....	66	
Steamship Prometheus.....	1,400	
Steamer for river San Juan.....	100	
Total.....	1,565	

BY WM. H. BROWN.

Steamship Arctic, for E. K. Collins.....	3,000	
Steamer Boston, for the Boston and Bangor route.....	700	
Steamer New World, for the builder, to run on the Sacramento.....	650	
Steamer New York, for the builder, to run on the West Coast.....	800	
Steamship Pacific, for Major Lowrey and Wm. H. Brown.....	1,040	
Steamer Sea Bird, for the builder, to run on the Pacific.....	500	
Steamer Independence, for the builder, to run on the Pacific.....	500	
Steamship, (mate to the Pacific).....	1,200	
Yacht for the World's Fair.....	150	
Total.....	7,190	1,350

BY SMITH & DIMON.

Ship Universe, for Guion & Williams.....	1,300	
Ship Mandarin, for Goodhue & Co.....	700	
Steamship for Howland & Aspinwall.....	2,200	
Total.....	2,100	2,200

BY HAYDEN & CANADA.

Schooner for Martin & Nelson, and others.....	250	
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BY WM. H. WEBB.

Ship Isaac Webb, for Charles H. Marshall & Co.....	1,400	
Ship Vanguard, for Jas. W. Phillips.....	1,200	
Steamship Florida, for New York and Savannah Steam Nav. Co.....	1,200	
Steamship Alabama, (mate to F).....	1,200	
Ship Celestial, for Bucklin & Crane.....	850	
Ship Joseph Walker, for S. Thompson & Nephew.....	1,200	
Steamship Union, for Spofford & Tileston's Charleston line.....	1,200	
Ship Samuel M. Fox, Mortimer Livingston.....	1,100	
Steamship for Howland & Aspinwall.....	2,000	
Ship Isaac Bell, for Mortimer Livingston.....	1,100	
Clipper-ship Gazelle, for Taylor & Merrill.....	1,200	
Clipper-ship for N. L. & G. Griswold.....	2,000	
Ship for Chas H. Marshall & Co.....	1,400	
Total.....	19,350	7,700

BY WESTERVELT & MACKAY, & A. J. WESTERVELT.

Ship Robert Kelly, for Chamberlain & Phelps.....	1,196	
Ship Ocean Queen, for Jno. Griswold.....	1,200	
Ship Francis P. Sage, for Thomas P. Stanton.....	1,150	
Steamship Columbia, for Howland & Aspinwall.....	800	
Ship Wm. Tell, for Boyd & Hincken.....	1,955	
Ship Rhine, for E. D. Hurlbut.....	1,037	
Steamship Louisiana, for Chas. Morgan.....	800	
Steamship Humboldt, for the Havre line.....	2,200	
Steamship Winfield Scott, for Davis, Brooks & Co.....	1,400	
Ship Underwriter, for R. Kermit.....	1,300	
Clipper-ship for A. A. Low & Brother.....	1,300	
Ship for John DeWitt & Co.....	1,000	
Ferry boat for the Houston st. Ferry.....	400	
Total.....	13,038	2,700

BY JACOB BELL.

Ship St. Louis, for Wm. Nelson.....	990	
Steamship Baltic, for E. K. Collins.....	3,000	
Ship White Squall, for Wm. Platt & Son.....	1,190	
Propeller for Spofford and Tileston.....	2,200	
Steamship Marion, for do. (mate to Southerner).....	1,100	
Schooner Asa Eldridge, for the builder.....	150	
Total.....	5,180	3,350

BY LAWRENCE & SNEEDEN.

Steamer for Brooks & Barton.....	500	
" " " ".....	500	
Barge for North River.....	450	

Steamboat North America, for the Norwich and New London Steamboat Co.....	1,500	
Steamer Florida, for Jas. L. Day.....	800	
Total.....	2,300	1,450

AT WILLIAMSBURG.**BY PERRINE, PATTERSON & STACK.**

Brig Angostura, for Harbeck & Co.....	297	
Ship Lady Franklin, for S. Thompson & Nephew.....	1,204	
Ship Arctic, for S. Zerega & Co.....	1,080	
Steamship Brother Jonathan, for Edward Mills, Esq.....	1,400	
Steam-propeller La Fayette, for Capt. Stoddard, to ply on the Southern Coast.....	1,200	
Clipper-ship Ino, for Siffken & Ironsides.....	889	
Steam-propeller for Richardson, Watson & Co.....	2,000	
Clipper-ship for Harbeck & Co.....	1,300	
Total.....	4,071	5,389

BY JABEZ WILLIAMS & SON.

Ship Eclipse, for Booth & Edgar.....	1,238	
Schooner Yorktown.....	554	
Pilot-boat.....	90	
Total.....	1,581	

AT HOBOKEN.**BY CAPE & ALLISON.**

Steamboat for China, Hayden H. Hall, agent.....	150	
Steamship for same co.....	350	
Ferryboat for the Hoboken Ferry Co.....	—	
Total.....	500	

BY ISAAC C. SMITH.

Ship for W. W. De Forrest & Co.....	550	
" " " ".....	562	
Total.....	1,112	

AT JERSEY CITY.**BY NEHEMIAH KNAPP.**

Steamboat for Wm. Bradford, John Cox, and Thos. E. Hulse.....	160	
Propeller for North river.....	80	
Total.....	240	

AT GREEN POINT.**BY COLLYER & WEBB.**

Steamboat for the builders.....	100	
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AT BROOKLYN.**BY BURTIS & MORGAN.**

Ferry-boat Whitehall, for the South Ferry.....	450	
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BY JOEL BLOOMFIELD.

Four or five lighters.....	—	
Total.....	450	

Recapitulation.

	No. of ves- sels.	Aggre- gate ton- nage.	On the L'nch- ed.	stocks.
Westervelt & Mackay.....	13	16,738	13,038	2,700
Wm. H. Webb.....	13	27,050	19,350	7,700
Wm. H. Brown.....	9	8,540	7,190	1,350
Jacob Bell.....	6	8,530	5,180	3,350
Thos. Collyer.....	8	4,400	3,350	1,050
J. Simonson.....	3	1,565	1,565	—
Smith & Dimon.....	3	4,300	2,100	2,200
George Collyer.....	1	100	100	—
Hayden and Canada.....	1	250	—	250
Wm. Collyer.....	6	2,525	2,400	125
Lawrence & Sneedeen.....	5	3,750	2,300	1,450
Perrine, Patterson and Stack.....	8	9,460	4,071	5,389
Jabez Williams.....	3	1,581	2,581	—
Cape & Allison.....	3	500	—	500
Isaac C. Smith.....	2	1,112	—	1,112
Nehemiah Knapp.....	2	240	—	240
Collyer & Webb.....	1	100	—	100
Total.....	87	89,741	62,225	27,516

Showing that the total number of vessels at present on the stocks, or launched, during the year just closed, to be eighty-seven, whose aggregate tonnage is 89,741; and that of this amount, 62,225 tons have been launched, and 27,516 tons remain to be launched.

The vessels above enumerated, may be classified as follows:

Classification.					
Steam-ships.	Steam-boats.	Pro-pellers.	Ships.	Sch boats.	Ferry boats.
Launched.....14	16	—	18	1	4
On the stocks... 5	8	3	10	3	5
Total.....19	24	3	28	4	9

Compared with the three years immediately preceding, the following is the result:—

	Launched.	On stocks.	Ag. tonnage.
January 1, 1847.....	39,018	29,870	68,888
January 1, 1848.....	36,649	15,710	52,359
January 1, 1849.....	38,085	23,890	61,975
January 1, 1850.....	62,225	27,516	89,741

From this it will be seen that ship building has thrived during the year just closed in an unprecedented degree. The progress of American ship-building, particularly in the construction of steam vessels, since the California gold discoveries, has been great, and a new impetus has been imparted to another department of marine architecture by the repeal of the British navigation laws.

Total Steamships built in New York.

BY JACOB BELL.		BY WM. H. WEBB.	
Lion.....	667	California.....	1,000
Eagle.....	667	Panama.....	1,000
Pacific.....	3,000	Cherokee.....	1,100
Baltic.....	3,000	Tennessee.....	1,100
Marion.....	1,000	United States.....	2,000
BY WM. H. BROWN.		Florida.....	1,150
Kamashatka.....	2,000	Alabama.....	1,150
Falcon.....	1,100	Union.....	1,100
Northerner.....	1,200	WESTERVELT & MACKAY.	
Southerner.....	1,100	Washington.....	1,600
Crescent City.....	1,500	Hermann.....	1,700
Empire City.....	1,524	Franklin.....	2,200
Atlantic.....	3,000	Humboldt.....	2,200
Arctic.....	3,000	Louisiana.....	800
Pacific.....	1,100	Columbia.....	800
BY J. SIMONSON.		Winfield Scott.....	1,400
Ohio.....	2,700	Gold Hunter.....	650
Isthmus.....	600	BY FERRIE, P. & STACK.	
Prometheus.....	1,400	Brother Jonathan.....	1,400
BY THOS. COLLYER.		BY SMITH & DIMON.	
Carribbean.....	1,700	Oregon.....	1,000
BY WM. COLLYER.		Georgia.....	2,800
Mexico.....	1,200		

Total, thirty-eight steamships, whose aggregate tonnage, as above estimated, is 57,807 tons, and their value not far from \$10,500,000.

As has already been seen, sixteen of them have been launched during the year 1850. Three, only, were launched during the year previous. Besides those included in the above table, there have been built during the year 1850, three large steam propellers; and some half dozen small class steamers, both of wood and iron, have been shipped to California as freight.

The first regular steamships built in this city were the Lion and the Eagle, above mentioned—launched in the year 1840, by Jacob Bell, for the Spanish government. They are now attached to the Spanish navy, and are known as the Congress and Regent. The next was the Kamashatka, built by Wm. H. Brown, in 1841, and sold to the Russian government, but the Washington, of the New York and Bremen line, launched by Westervelt & Mackay, in January of the year 1847, was the first vessel owned in the United States in connection with a regular line of ocean steamers. The steamships United States and Hermann followed in

1848. The former was soon after sold to the Germanic Confederation. These three vessels were the pioneers of American adventure in this important branch of national industry.

STATEMENT

Showing the total quantity of each article which came to the Hudson River on all the Canals during the years 1848, 1849 and 1850:—

	1848.	1849.	1850.
The Forest	603,272	665,547	947,818
Fur and peltry	685,896	760,609	926,045
Products of Wood:—	44,867	44,288	39,828
Boards and	6,343	5,873	7,105
scantlings	107,527	94,638	113,222
Shingles	262,270	297,431	425,005
Timber	104,270	51,258	57,905
Staves	1,510,777	1,497,627	3,039,588
Wood	114,246,000	154,159,359	202,224,480
Acres. pot & prl. bls.	13,861	11,977	12,411
AGRICULTURE.	38,229	31,289	52,237

Product of Animals:—			
Pork	87,930	73,985	46,617
Beef	60,570	105,492	97,259
Bacon	8,182,100	8,477,754	9,681,921
Cheese	43,280,000	42,097,818	32,585,363
Butter	23,730,000	20,880,409	17,098,685
Lard	9,926,000	9,083,062	8,278,228
Lard oil	9,926,000	9,083,062	8,278,228
Wool	8,534,000	12,731,402	11,987,356
Hides	176,000	596,364	458,165
Tallow	176,000	596,364	458,165
Vegetable Food:—			
Flour	3,131,095	3,263,087	3,256,085
Wheat	3,116,134	2,734,389	3,670,754
Rye	286,919	322,942	472,305
Corn	2,933,963	5,121,270	3,228,056
Corn Meal	1,548,197	1,400,194	1,744,867
Barley	2,077,724	2,407,895	2,469,637
Oats	1,437,487	2,092,031	35,103,453
Peas and bns.	75,808	160,234	79,485
Potatoes	115,629	242,211	230,699
Dried fruit	1,828,000	780,269	1,467,255

All other Agricultural Products:—			
Cotton	174,400	316,094	1,112,333
Tobacco	352,000	1,896,056	795,025
Hemp	174,400	316,094	1,112,333
Clover and grass seed	1,666,000	2,479,098	1,417,233
Flax seed	1,764,000	1,381,684	1,144,930
Hops	1,598,000	1,877,805	858,356
MANUFACTURES.			
Dmstc. sprts. gals.	1,606,131	2,107,595	1,517,095
Linseed oil	1,606,131	2,107,595	1,517,095
Oil meal and cake	1,606,131	2,107,595	1,517,095
Starch	1,606,131	2,107,595	1,517,095
Leather	1,606,131	2,107,595	1,517,095
Furniture	1,606,131	2,107,595	1,517,095
Agricultural im- plements	1,606,131	2,107,595	1,517,095
Bar and pig lead	1,606,131	2,107,595	1,517,095
Pig iron	1,606,131	2,107,595	1,517,095
Castings	1,606,131	2,107,595	1,517,095
Machines and parts thereof	1,606,131	2,107,595	1,517,095
Bloom and bar iron	1,606,131	2,107,595	1,517,095
Iron ware	1,606,131	2,107,595	1,517,095
Domestic wool- lens	1,606,131	2,107,595	1,517,095
Domestic cot- tons	1,606,131	2,107,595	1,517,095
Domestic salt	1,606,131	2,107,595	1,517,095
Foreign salt	1,606,131	2,107,595	1,517,095

OTHER ARTICLES.			
Live cattle hogs and sheep	1,606,131	2,107,595	1,517,095
Stone, lime and clay	1,606,131	2,107,595	1,517,095
Gypsum	1,606,131	2,107,595	1,517,095
Eggs	1,606,131	2,107,595	1,517,095
Mineral coal	1,606,131	2,107,595	1,517,095
Fish	1,606,131	2,107,595	1,517,095
Copper ore	1,606,131	2,107,595	1,517,095
Flint enamelled ware	1,606,131	2,107,595	1,517,095
Sundries	1,606,131	2,107,595	1,517,095

Statement showing the aggregate, in tons, under the divisions specified in the above table:—			
	1848.	1849.	1850.
The forest tons..	603,272	665,547	947,818
Agriculture "	685,896	760,609	926,045
Manufactures	44,867	44,288	39,828
Merchandise "	6,343	5,873	7,105
Other articles "	107,527	94,638	113,222
Total tons...	1,447,905	1,579,946	2,034,016
STATEMENT.			
Showing the estimated value of each article which came to the Hudson River, on all the Canals during the years 1848, 1849 and 1850:—			
	1848.	1849.	1850.
The Forest	635,838	692,864	818,845
Fur and peltry	635,838	692,864	818,845
Product of Wood:—			
Boards and scant- lings	3,931,277	4,459,157	6,365,723
Shingles	338,861	153,774	202,668
Timber	212,598	119,598	440,490
Staves	514,109	693,701	908,613
Wood	69,463	56,892	60,744
Ashes, pot and pearl, bls.	1,146,870	1,016,800	1,518,035
AGRICULTURE.			
Product of Animals:—			
Pork	967,230	758,421	512,798
Beef	605,700	1,244,360	866,789
Bacon	490,997	514,666	580,922
Cheese	3,029,169	2,736,211	1,955,121
Butter	3,359,391	2,923,832	2,391,862
Lard	761,757	635,814	620,868
Lard oil	761,757	635,814	620,868
Wool	2,304,044	4,072,358	4,372,578
Hides	17,494	69,637	54,891
Tallow	17,494	69,637	54,891
Vegetable Products:—			
Flour	17,471,401	16,315,435	16,280,425
Wheat	3,677,010	2,993,160	3,937,763
Rye	200,310	187,545	315,928
Corn	1,834,358	2,970,482	2,000,890
Corn meal	1,834,358	2,970,482	2,000,890
Barley	1,037,293	868,115	1,417,627
Oats	747,930	868,084	1,014,677
Bran and ship stuffs	172,578	242,755	927,853
Peas and beans	75,808	160,234	99,382
Potatoes	53,109	117,918	123,269
Dried fruit	164,533	78,007	132,019
MANUFACTURES.			
Dmstc. sprts. gls.	385,471	596,938	394,301
Linseed oil	385,471	596,938	394,301
Oil meal and cake	385,471	596,938	394,301
Starch	385,471	596,938	394,301
Leather	385,471	596,938	394,301
Agricultural im- plements	385,471	596,938	394,301
Bar and pig lead	385,471	596,938	394,301
Pig iron	385,471	596,938	394,301
Castings	385,471	596,938	394,301
Machines and parts thereof	385,471	596,938	394,301
Bloom and bar iron	385,471	596,938	394,301
Iron ware	385,471	596,938	394,301
Domestic wool- lens	385,471	596,938	394,301
Domestic cot- tons	385,471	596,938	394,301
Domestic salt	385,471	596,938	394,301
Foreign salt	385,471	596,938	394,301
OTHER ARTICLES.			
Live cattle, hogs and sheep	385,471	596,938	394,301
Stone, lime and clay	385,471	596,938	394,301
Gypsum	385,471	596,938	394,301
Eggs	385,471	596,938	394,301
Mineral coal	385,471	596,938	394,301
Fish	385,471	596,938	394,301
Copper ore	385,471	596,938	394,301
Flint enamel- ed ware	385,471	596,938	394,301
Sundries	385,471	596,938	394,301

Showing the aggregate value of the property which came to the Hudson river, on all the canals, during the years 1848, 1849 and 1850, under the divisions as specified in the above table.

	1848.	1849.	1850.
The Forest..	\$6,909,015	\$7,192,796	\$10,315,118
Agriculture..	37,336,290	33,455,456	38,311,543
Manufactures	3,834,360	3,899,238	3,967,171
Merchandise.	593,619	508,048	563,615
Other articles.	2,210,623	2,319,983	2,323,494

\$50,883,907 \$52,375,521 \$55,480,941
GENERAL MOVEMENT.

Statement of the tonnage and value of the property which went from the Hudson river on all the canals during the seasons of 1848, 1849 and 1850:

	Tonnage.	Value.
1848.....	329,561	\$74,943,450
1849.....	317,364	75,266,073
1850.....	441,582	85,177,068

Statement of the tonnage and value of the property which came to the Hudson river in the same years:—

	Tonnage.	Value.
1848.....	1,447,905	\$50,883,907
1849.....	1,579,946	52,375,521
1850.....	2,034,018	55,480,941

The aggregate movement from and to the Hudson river during the same years and the aggregate value of the property transported, is as follows:—

	Tonnage.	Value.
1848.....	1,777,466	\$125,827,357
1849.....	1,885,416	127,098,569
1850.....	2,475,600	140,658,009

The value of domestic produce exported from the United States, exclusive of specie, during the fiscal year, ending June 30th, 1850, was \$134,700,233. The value of all the property arriving at and shipped from the Hudson river on the canals during the past season, was \$140,658,009, thus showing that the value of the property carried on the canal exceeds the exports in value to the amount \$5,957,776.

The following statement exhibits the amount of tolls on all the canals for four seasons:—

1847.....	\$3,635,380	1849.....	\$3,268,206
1848.....	3,252,212	1850.....	about 3,276,903

The amount received the past season exceeds that of 1849 by \$3,697, and it is greater than any previous season except the memorable year of 1847.

Coal Trade for 1850.

We copy from the Philadelphia Price Current, the following brief notice of the Anthracite Coal Trade for 1850.

During the past year up to the first of September, the demand for coal was limited, the market dull, and prices depressed and low, the cargo price being \$3 25 to \$3 75 per ton. On the 18th of July a violent freshet injured the Lehigh, Schuylkill Lackawanna and North Branch Canals, and prevented supplies from being shipped on them for several weeks. On the 2nd of September a more violent freshet swept away portions of the Schuylkill canal, and has since stopped all shipment of coal on it. The Reading railroad was considerably injured, and business on it was suspended for 12 days. The Lehigh Lackawanna and North Branch canals also sustained more or less injury. The stock of coal being light the dealers immediately advanced the price \$1 per ton, and an active demand for the supply of other markets took place. The increased price affording a fair remuneration, stimulated the operators to increase their supplies, and every effort has since been made to prevent a deficiency in the quantity of coal required for consumption. The Reading railroad for several successive weeks brought down about 50,000 tons weekly, and thus prevented a further advance in prices. The Lehigh and Lackawanna canals also exerted themselves, and by additional prices for freight, increased their shipments.

The supplies of coal sent to market from the Schuylkill regions in 1850 have been:

	By Railroad.	By Canal.
Port Carbon, tons	499,016 14	129,478 00
Pottsville.....	179,133 08	40,281 02
Schuylkill Haven	567,557 19	93,418 13
Port Clinton.....	184,109 02	24,853 05
	1,423,817 03	288,031 00

On the Leigh, the canal was injured, and the Beaver Meadow railroad seriously too. The total supplies in 1850, were 722,688 tons.

Of the Lackawanna coal there were brought to tide-water, by Delaware and Hudson canal, in 1850..... 432,692 tons.
Also from Pennsylvania Coal Company's mines by same route.....111,495

Total.....543,886 tons.

The enlargement of the Delaware and Hudson canal which has been some time in progress, will be completed before the opening of the spring navigation. The mechanical structure is finished, and the only portion of the work to be completed is the excavation, which is rapidly progressing. At present the boats only carry 50 tons of coal, but when the enlargement is completed they can carry 120 tons, which will more than double the facilities for transportation.

From Pine Grove, the shipments in 1850, were 62,809 tons of which 28,436 tons passed out of the Union canal at Portsmouth, and the balance 34,373 tons were consumed along the line of the canal. There were transported from the mines to Pine Grove, during the year, 70,861½ tons of coal.

From the Wyoming region the shipments were materially interrupted by injury done the canal by the freshets. The total shipments in 1850, were 275,109 tons.

The quantity of coal sent to Sunbury from the Shamokin mines was 19,863 tons.

Of Lykens Valley Coal, the shipments were 35,000 tons.

RECAPITULATION.

Schuylkill Region.....	1,711,847
Lehigh.....	722,688
Lackawanna.....	543,886
Wyoming.....	275,109
Pine Grove.....	62,809
Lykens Vally.....	35,000
Shamokin.....	19,863

Total.....3,371,502

Left on the line of the railroad.....166,922 tons.

Left on the Schuylkill canal.....40,281

Total.....207,273

The quantity of coal shipped from Richmond, the termination of the Reading railroad in 1850, was 1,075,344 tons, which was carried to other places in 7,549 vessels, of various descriptions.

Statement of the amount of coal transported over the Reading railroad in 1850:

	To Richmond.	Phia.	Other Places.
From Port Crbn,	302,299 09	63,092 10	73,624 15
Pottsville,	166,830 16	3,601 13	8,900 19
Schuylkill Hav.	434,378 12	68,009 13	59,169 14
Port Clinton,	112,006 16	46,803 05	25,297 01

Total, 1,075,317 13 181,507 01 166,902 09

Total amount, 1,423,817 03

Clearances of Vessels from the Ports of the United States.

The total Tonnage of the Clearances from the ports of the United States for the fiscal year ending 30th June, 1850, as appears by the report of the Register of the Treasury, was 4,361,002. The total number of vessels was 18,195—of which 8,379 were American, and 9,816 Foreign. The tonnage of those cleared in New York was 2,149,096, the number of American vessels being 3,610 of foreign 3,693.

The States of Kentucky, Missouri and Delaware are without clearances.

From California, 180,128 was the total tonnage, being 623 vessels—of which were foreign, and 303 American.

The figures for 1850 compare with those of 1849 as follows:

	1850.	1849.
Tonnage American.....	2,632,788	2,753,724
" Foreign.....	1,728,214	1,675,709

Vessels—American.....8,379 11,446
" Foreign.....9,816 8,847

Deduct tonnage of California, 180,128 tons, from the aggregate foreign and American this year, & we have a balance of.....4,180,874
Compare with last year.....4,419,433

Showing a falling off this year of.....248,559

Also a decrease of American tonnage of..120,937

" an increase of foreign tonnage....52,505

The number of men and boys clearing this year, compared with last year was as follows:

Men Amer. Vs. 102,888	109,934
Boys .. 3,865—106,753	3,422—112,771
Men forgn. Ves. 86,886	89,579
Boys .. 2,232—89,118	2,604—92,383

195,371 205,054
Men in Am. & for vs. 180,774 198,928

Boys .. 6,097 6,126

Total this year as above.....195,781

Total last year.....205,054

Decrease this year 9,183 men and boys.

Imports for 1850.

The following table exhibits the amount of imports for the past year, and the various articles which makes up the aggregate.

Gold and silver coin and bullion.....	\$4,628,792
Tea, number of lbs. 28,752,817.....	4,588,373
Coffee " " 114,986,805.....	11,215,076
Copper and copper ore.....	910,946
Sheathing metal.....	484,168
Wearing apparel, and personal effects of emigrants.....	151,689
Articles the production of the U. States, brought back.....	195,497
Guano, tns, 11,740.....	91,948
All other articles free of duty.....	443,893

Total amount of articles free of duty. \$22,716,382

Articles paying duties.

Manufactures of wool, including carpeting.....	\$17,151,506
Manufactures of cotton.....	20,108,715
Manufactures of silk and raw silk.....	18,041,009
Silk and worsted goods.....	1,653,809
Manufactures of flax.....	8,134,674
Manufactures of hemp.....	336,541
Cotton bagging.....	251,906
Ready made clothing and articles of wear.....	813,261
Linen and cotton laces insertions braids trimmings, etc.....	858,552
Hats, caps, bonnets, etc., of Leghorn straw, chip, grass, palm-leaf, etc.....	1,190,135
Bar iron rolled, 4,959,022 cwt.....	7,397,166
Bar iron, hammered, 294,132 cwt.....	744,735
Pig iron, 1,497,487.....	950,660
Old scrap iron.....	161,981
Hoop and sheet iron.....	835,996
Cast, German, and other steel.....	6,242,607
Copper, and manuf. of copper paying duties.....	1,506,734
Brass, and manufactures of brass.....	179,893
Tin, and manufactures of tin.....	3,151,319
Lead and manufactures of lead & pewter	1,192,999
Watches and parts of watches.....	1,663,921
China, Porcelain and earthenware.....	2,921,986
Furs and manufactures of furs.....	974,276
Leather and tanner skins.....	970,059
Manufactures of leather.....	1,137,511
Raw hides and skins.....	4,799,031
Wines.....	2,065,922
Distilled spirits 5,336,154 gallons.....	3,134,394
Beer, porter and cordials.....	208,749
Molasses 25,044,835 gallons.....	2,890,185
Linseed oil 1,513,117 gallons.....	848,672
Sugar, and sugar candy, 218,439,055...	7,558,544
Raisins, and other fruits and nuts.....	1,191,373
Spices.....	706,262
Manufactured tobacco, cigars and snuff	1,743,341
Manilla hemp and other hemp not manufactured.....	1,239,176
Wheat, Barley, Rye, Oats, Wheat, Flour and Meal.....	2,246,734
Merchandise not specially enumerated in report on commerce, paying duty from 5 to 40 per cent.....	10,845,919
All other articles enumerated in said report, paying duty.....	16,070,428

Total amount of imports upon which duties are paid.....\$155,427,936

Recapitulation.

Amount imported free of duty.....\$22,710,382

Amount imported paying duties.....155,427,936

Aggregate amount of imports.....\$178,158,318

Total amount excluding coin & bullion\$173,509,526

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HENRY V. POOR, Editor.

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ASSISTANT EDITORS,

J. T. HODGE, *For Mining and Metallurgy.*
GEN. CHAS. T. JAMES, *For Manufactures and the Mechanic Arts.*

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Saturday, January 18, 1851.

The Past and the Future.

In our last, we briefly contrasted in general terms the past and the future. Under the influence of the different causes at work in society, we now take occasion to pursue this subject, and trace its more direct application to the progress of society.

The most extraordinary fact in the history of the past fifty years has been the progress of the English race during the last half century. Not only in population and in political importance have the English race advanced beyond all previous example, and beyond any other people, but especially in the intellectual and social condition of the people, and the universal supply of the luxuries and refine-

ments, once the peculiar treasure of the rich, to the great bulk of the population. In these United States, within this period, labor has increased its rewards, by its power to command a far greater supply of comfort and enjoyment, with a less amount of physical exertion than heretofore.

This great change is principally the result of the great agencies at work during the last twenty years. The application of steam power has been gradually subjecting the material world to the control of man, and has enabled him to a certain extent to reduce the forces of nature into obedience to his will. The motive power which formerly resided in muscles of flesh has been transferred by modern science to muscles of iron. The locomotive engine has in twenty years become the great agent of civilization and progress, the most powerful instrument for good the world has yet reached, and become the most effective messenger for proclaiming peace on earth and good will among men.

Fifty years ago, "the flames of war were raging throughout the land." This was the language of Napoleon Bonaparte, in his note to the British King, asking a termination of hostilities between England and France. Fifty-one years ago this day the celebrated letter of Lord Greenville, in reply to Napoleon, dated January 4th, 1800, refusing all proposals for peace, lighted up afresh the flames of war, which for fifteen years involved in its horrors all the civilized nations of the earth. The battles of Merengo and Hohenlinden in the year 1800 finally established the power of the First Consul and while England held her undisputed mastery of the seas, the French power on the Continent of Europe fifty years ago was everywhere in the ascendant.

What mighty changes these last fifty years have disclosed. Fifteen years of incessant and terrific butchery required an equally lengthened term of peace to supply the loss of war. But little progress had been made in advancing the condition of the race for thirty years previous, till the era of locomotion was established, by the success of Stephenson's locomotive Rocket, at the opening of the Liverpool and Manchester railway, on the 16th of October, 1825.

George Stephenson, the industrious and upright mechanic, from the collieries of Newcastle-upon-Tyne, has exerted greater influence upon the world than Napoleon Bonaparte! The humble engine-

man, now grown up at 21 to be a stripling engineer, was undergoing that practical training in 1801, afterwards gave him the prize of £500 for the best locomotive on the Liverpool and Manchester railway. The introduction of tubes through which the fire should pass, and the plan of sending the steam into the chimney to create a vacuum and draught, gave to the locomotive of Stephenson the speed, which has made it the great wonder of our times, as no man can ever tread the deck of a steamboat without reverencing the name of Fulton, no well informed man can place his foot in a rail car without instinctively doing homage to the name of Stephenson.

It is impossible for any mind however capacious and enlightened, to form anything like an adequate conception of what the railway in the next century may achieve. The United States and Great Britain have been the theatre in which the locomotive has done its greatest work. It has already in 15 years time increased the passenger traffic of both countries three or four fold, and the goods traffic four or five fold. It has multiplied in the same ratio every social and physical advantage. It has invited from all other nations of Europe an emigration that is adding in greater ratio to the numerical and physical strength of our own nation, giving us a name and a power among the nations of the earth.

And still this work is but just begun. From the eastern cliff of Nova Scotia, where the shore of this Continent bends forward in an attempt to reach its sister shore of the other, a line of railway is projected, that shall connect with those already built, to be again connected with others reaching to the Pacific seas, and across whose path the clustering branches shall entwine, like the sensitive nerves of the human frame, reaching to every extremity of the system.

When this shall come to pass, and the fruits of every clime shall be shared alike by all, and when the humble dweller in the seaboard valley far distant from the sea shall be roused by the scream of the car whistle, and be transported across the continent for the price now paid for an ordinary excursion from one Atlantic city to another, who can limit the destiny of the race, or define the boundaries of knowledge or of power.

The age of locomotion is the era of progress.—Wherever the railway extends, knowledge and civ-

lization advance in a geometrical ratio. Where the railroad is unknown civilisation will cease, in contrast with those in possession of this sublime and benevolent agent. The steamboat, the railway and the telegraph, all the product of the last fifty years, in the hands of the people will overthrow the despotisms of the past, and reconstruct society on the principles of liberty and of social order. The world will never be at rest till they are extended everywhere. More potent than prerogative, they seek to enfranchise the whole earth. The statesman, the lawyer, and the philanthropist cannot fail to see in the working of these agencies, the most rapid progress of the race. Beyond all other physical things, they are to become the necessities of every land, harmonising in the end, all national differences, and constituting of all mankind one great brotherhood of nations.

Erie Canal--Trade of the West.

We have previously spoken of the alarm which has manifested itself in various quarters, in relation to the influence which the new lines of railroad now in operation and progress from the St. Lawrence and the great lakes to the Atlantic coast, will be likely to exert upon the business and income of the Erie Canal. The meeting of the Legislature has brought this matter immediately before the public, in the message of Governor Hunt, from which we make the following extracts:

"Serious apprehensions are entertained, that the trade of the Erie Canal will be impaired by the competition of railroads and other rival avenues in and out of the state, unless early and effectual measures are adopted to cheapen the expense of canal transportations. It is conceded on all hands that no material reduction can be made in the cost of canal freight without reducing the rates of toll, until the enlargement of the Erie Canal shall enable our forwarders to increase the capacity of their boats. This important object will be attained in a partial degree by the completion of the new locks, on the enlarged plan. The reconstruction and enlargement of these structures has been nearly perfected, and new locks on a large scale will be brought into use on the entire line of the Erie Canal at the opening of navigation the coming season, with the exception of five, which are located at points where the route of the canal is to be changed. These cannot be reconstructed and made available without the simultaneous construction of several miles of new canal, estimated to cost over a million dollars. But it is proposed to lengthen the old locks at these points by temporary structures, in such manner that the entire canal may be navigated by boats having an additional length of 28 feet as compared with those now in use. It is not to be disguised, however, that the enlargement of the locks renders a corresponding enlargement of the sections more necessary than before. The quantity of water required for passing boats is greatly increased by the large size of the new locks. It is found extremely difficult, and in some cases impossible, to force the necessary supply for this purpose through the narrow channel of the old canal. Much difficulty and embarrassment were experienced from this fact during the last season of navigation. Notwithstanding the vigorous efforts of the commissioners and their subordinates, it was found impracticable to sustain the necessary height of water on some of the long levels, and it resulted that boats were frequently grounded, and the navigators were subjected to injurious delays, vexation and expense. There is reason to believe that this embarrassment will continue to increase from year to year, until the enlargement of the entire canal shall have been completed.

"How far the descending tonnage can be increased, while the canal retains its present limited dimensions, is a question which gives rise to some diversity of opinion. All admit that we have approached very near the maximum capacity of the old canal, during the spring and autumn months. That a large increase in the amount of tonnage,

adequate to the rapid growth of our trade, is practicable in the present condition of our canal navigation, cannot safely be assumed.

"The future policy of the State in reference to the Erie Canal and its enlargement, forms one of the most important and difficult subjects which will occupy the attention of the Legislature. I must ask you to enter upon its consideration with an enlightened appreciation of the momentous interests involved in your deliberations, and with an earnest purpose to adopt a line of action worthy of the past triumphs of the State in the consummation of great designs, and in some degree commensurate with its present power and its future destiny.

"It is near sixteen years since the Legislature of 1835, after mature deliberation, determined to enter upon the enlargement of the Erie Canal. I do not propose to review or discuss the changing policy which has retarded the prosecution of the undertaking. Our responsibilities relate to the present condition and future welfare of the State, rather than to past events, which belong to the province of the historian. Since the work of enlargement was commenced, we have expended upon it the sum of \$15,990,443 81. Some of the great objects of this expenditure cannot be fully realized until the work is completed. In the meantime the annual loss of interest on the amount invested, at 6 per cent., is over one million of dollars, to which must be added an annual loss of at least another million in the needless cost of transportation which would have been saved by the completion of the enlargement; and these unnecessary sacrifices must increase from year to year, with the tardy progress of the expenditure. The amount already lost under these heads cannot be less than ten or fifteen millions. The question then arises, how much longer shall this be borne?

"According to the most recent estimates of the Engineer department, it will require eleven millions of dollars to finish the enlargement of the Erie Canal, and \$1,165,000 to complete the Genesee valley and Black river canals. If we assume that the canal revenues, after paying the yearly contributions to the General Fund and the Sinking Funds, required by the constitution, will continue to yield a net surplus of \$800,000 per annum, it follows, that the completion of this great undertaking, so urgently demanded by every consideration of public policy, must be postponed until the year 1866. A net revenue of \$1,000,000 per annum would effect the same object in 1863.

"An important question is presented for the consideration of the people and their representatives, whether the consummation of the work shall be deferred for this long series of years, or whether some judicious and practical plan shall be adopted to insure its completion at the earliest period consistent with economy of expenditure, and the due preservation of the public credit."

The Governor says in his message, that three methods have been proposed to relieve the State from the dilemma in which it is placed.—1st, to sell the future revenues of the canal as the basis of a loan; 2ndly, the authorization of a loan under the 12th section of the Financial Article:—"Before a law for this purpose could take effect, it must be submitted to the people for their ratification; and the Constitution requires that every such law shall provide for the collection of a direct tax to pay the interest on the debt as it falls due." 3dly, the amendment of the Constitution, to allow the increase of the state debt.

The Governor evidently favors the last proposition. The Legislature have yet taken no action in the matter. The whole question will undoubtedly be thoroughly canvassed; and a great deal of interesting and useful information laid before the public, touching the commerce of the various routes between the great lakes and tide water.

Our people are now beginning to see the folly of binding their future action by constitutional enactments. There never was a more anti-democratic measure, or a more stupid and senseless

one. To admit the wisdom of binding ourselves to a particular policy for the future, is not only to deny the capacity of self-government, but also to deny all progress. If the past is to guide, the future should develop nothing new. Little did we dream a few years since, that the progress of events would completely upset all our received ideas. So rapid has been the change, that the very clause which was undoubtedly one of the great reasons for adopting the Constitution, would now be the great reason for rejecting it: and there can be no doubt, that we shall soon be called upon to release ourselves from this onerous provision.

The Governor is fully of the opinion, that no objection exists on the score of prudential considerations, against the immediate contraction of a debt sufficient to secure this enlargement, as the increased revenues would not only provide for the payment of the interest, but would soon liquidate the principal.

The change of public opinion in regard to the canal and its future prospects, which a few years have witnessed, is indeed remarkable. Secured from the competition of the central line of railroads, and being the only other outlet for the valley of the great lakes, the people of New York, unable to foresee the influence which the Erie and Ogdensburg railroad would exert upon its business,—looked upon the canal as an unfailing fountain, upon whose supply they could for all time count with unerring certainty. The contingency of rivals for its appropriate business was never conjectured. They therefore tied up its revenues, and also their own hands, and deprived themselves of all power to meet any emergency which might show itself. New York, regarding her success as certain and indisputable, resolved to "close up" her internal improvement works—and after providing for the completion of those unfinished, to go quietly to sleep, and let the great canal not only take care of itself, but the State into the bargain. No sooner had she sunk into a comfortable doze, than she is called upon by a voice of thunder, to awake to a sense of her true interests, which were never in greater jeopardy than at the present moment. No community can now repose upon past strength or past acquisition. The future discloses new agencies with such rapidity, or teaches us the more economical use of such as we possess, that communities, as well as individuals, who neglect their use, or any improvement in their use, are soon left behind in the race by those who seize every opportunity of advancing their condition. New York, notwithstanding her advantages of position, is by no means absolved from the operations of this law.

The great lakes, in connection with the St. Lawrence, may now be regarded as the great route of the internal commerce of the country; exceeding in importance even the Mississippi river. From this great line of water intercommunication, which penetrates the finest portion of the continent, a great number of railroads are radiating in every direction, drawing to it the trade of a vast section of country beyond the limits of its own valley. The natural outlet of this vast body of water is not the appropriate commercial outlet of its trade. Singularly enough, this great water course runs almost parallel with the sea coast, commencing at Buffalo and New York, and extending northward for about 500 miles. New York enjoyed the advantage of possessing the only route for a canal. This was commenced before railroads were thought of. When the construction of railroads were commenced, she protected her interest in the canal.

from competition with the roads first constructed, and which threatened immediate competition. These restrictions were not imposed upon the Erie or Ogdensburgh railroads. Routes equally, if not more favorable, for railroads between the St. Lawrence and the Atlantic States, were formed in other States, far beyond the legislation of New York. The shortest and best route for a railroad between the St. Lawrence and the Atlantic, is between Portland, Me., and Montreal. The Erie Canal, therefore, far from the enjoyment of a monopoly, must soon encounter the most active competition—not only from railroads within our State, but those beyond it, still more favorably situated for cheap transportation. How the canal will sustain itself in this new contest remains to be seen. To assume her superiority is to assert what is to be proved. The competition is sufficiently threatening to justify every step that promises to give us success in the contest. Without proper care and precaution, this State may come off second best in a contest, the prize of which is no less than the trade of the best portion of this continent. All minor considerations must now be sacrificed to this great end.

Railroad to the Pacific.—John Bull in the Field.

A work has just been published in London, entitled "Britain redeemed and Canada preserved," by F. A. Wilson, and Alfred B. Richards, Esqs." It is illustrated by plates, and a map of North America down to the 40th degree of north latitude, on which is delineated the project of a railroad, across Nova Scotia and the Canadas, from Halifax to the Pacific, terminating at Puget's Sound, opposite the Island of Vancouver, the estimated length being 2,800 miles, of which 400 miles, from Halifax to Quebec, is already surveyed, and it is stated, is in course of execution. The remaining 2,400 miles is marked out in nearly a straight line from Quebec to the Pacific terminus, meeting, as alleged, with no obstacle but the Rocky Mountains, which, it is claimed, may be passed by detours through the defiles, or tunnelled where it may be necessary. The ability of the work, says the editor of the National Intelligencer, who has been favored with a copy, is "transcendent, and the plan, bold, impressive and imposing." The following extracts from the work will develop the plan:

"We will now proceed to open the intention of the work, already more than suggested by the title, viz: to show the feasibility of a line of railway across the Canadas, joining the Atlantic and Pacific oceans; the necessity of this, to retain the most important of our colonies, and to keep pace with the vast designs of the United States; the possibility of a perfect incorporation of Canada with Great Britain, under the same laws, government, privileges, and with a fair amount of representation, as an important integral part of this kingdom; thus to preserve her, as with a less cramped and fatal policy we might still have preserved the fealty and affections of the United States; the numerous benefits to be derived from the employment of convict labor; the immense individual advantages to emigrants, the absorption of pauperism, and its alchemical translation to comfort, prosperity and wealth; the relief here, the blessing there; and finally the opening of reciprocal commerce with northeast China and with Japan by speedy and direct means, and by the unlimited sway of the Chinese seas; thus to extend the broad belt of England in the temperate zone round the world. All this is to be done, for we have the means before us; the time has now arrived; the necessity is urgent. China is our centre of attraction; it is so to Russia; it is to America; but we alone have yet the game of the world in our hand. Our grandest schemes (at home) are defunct and still-born railways, from anywhere to nowhere. No trifling

measure will do there, (in Canada) lose her, and you lose the world. By a generous and extended policy you can alone retain her. People of England, awake! You possess every thing; you act as if you had nothing. Again we say, People of England, awake! Preserve the Canadas as the means of salvation. The land of promise (to us) is Canada; but not Canada under the present system; with its interior still a desert and unfrequented; its population troubled and discontented, all huddled up to the east in mixed community; its finest portions abandoned to the savage, and its western coast a *cul de sac*, or non-thoroughfare, without a peopled port or local ship. No; but a Canada capable of becoming a closely united member, or rather a portion and parcel of our state; as intimately mixed up and connected with us as Scotland and Ireland, and pursuing the same objects and interests under branch institutions, and one identical government and polity; her expansive bosom peopled from her eastern to her western extremity; and the intermediate space constituted the grand high road round the world's circumference, the future channel of the whole world's general intercourse and commerce; and all this, marvellous as it may appear, by easy, and self-evident means. With a continental territory of such vast extent as our Canadas, lying so invitingly between us and the new commercial arena opening in the Pacific, together with so many of our intervening dependencies scattered over the southern seas, are we to remain passive spectators of this grand drama of maritime intercourse, which is assembling all nations upon the Pacific waters, without availing ourselves of our paramount faculty and means of converting the impulse to our principal advantage? Look at the map and see if we are not stupidly obtuse in not securing the incalculable benefits which the opportunities offer to Great Britain; and judge if it were not suicidal criminality, should we hesitate any longer to profit by this California mania, and to assume the immediate lead and direction of the South Sea movement, thereby to attract those congregating interests to a British centre? For, with so vast and undivided a tract of the northern coast of America under our sway, stretching from the pole to the very confines of the spot thus suddenly endowed with such magnetic influence, what excuse have we for refusing this indirect appeal to our obvious power? Nature presents us with the means in the happy position of Vancouver's land; the Canadian lakes open a half-way across to this promising point, through the heart of our own possessions, were we to only bridge the intermediate space between Lake Superior and our northwest harbor.—At the bare thought of so rapid and direct a channel between Europe and Asia, what pictures of certain prosperity and grandeur, enterprise and activity, crowd upon the mind, with the prospect of a wilderness peopled—a remote ocean converted to an immediate and familiar high road—and regions teeming with countless myriads hitherto only reached by tedious circumnavigation of the globe brought to intimate connection, as it were, at our very door; pictures we cannot contemplate without exclaiming—England, arouse!—Ministers, awake!"

"The above extracts," says the Intelligencer, "taken here and there, from the first seventy-five pages of the work—enough, as will probably be felt, to show its character, its ability, its grand design. Frequent reference is made to Mr. Whitney's scheme for the United States, which seems to have been the prompter of this movement in Great Britain. It is proposed to incorporate Canada with the domestic empire, to be a part of it as much as Wales, Scotland, and Ireland, to be represented in Parliament and in the nobility. Canada is to have the same rank and the same privileges as England, and a member of the royal family is to be at the head of the Canadian branch of the government."

Twenty thousand convicts are to be put at once upon the road to work it; the paupers of England are to be taken there and made useful. It is estimated that five millions of people can be spared from England, Scotland and Ireland, for the reciprocal benefit of all parties, to be planted along the line of this road, and that in this way, in a short time, England may be entirely relieved of her pau-

perism, which now costs more than six millions sterling a year in parish rates, and thirty to forty millions in all forms of public and private charity. The estimates for the cost of the road are an average of £5,000 pounds per mile, being £14,000,000 for the whole work, and less than half the present annual cost of pauperism at home, the whole or chief part of which burden it is expected the execution of the plan will remove. This being so, as a system of public economy, it is beyond all example in the history of the world. It is averred that they have just that to spare of British population at home, which is wanted as material to build the road, and to constitute this extended line of settlement to the Pacific, as a new branch of the empire, which, as is claimed, will regenerate Great Britain, cure all her maladies, relieve her of her burdens, and give her the command of the commerce of the world. It is a remarkable fact that the distance between England and China, by this contemplated railroad through Canada, is fifteen hundred miles shorter than the nearest route across the United States. It remains to be seen whether Great Britain or the United States will be first in the field, and which will win this great prize."

This great scheme should be framed with Mr. Whitney's, and hung up for the admiration of the world. The Intelligencer says that nearly a straight line is drawn from Quebec to the Pacific, to indicate the road, and that it "looks well on paper."—Here lies all the excellence of Mr. Whitney's scheme. The only place where this looks well is on paper. This scheme bears another great resemblance to Mr. Whitney's. The whole is a figment of the imagination; a mere rhapsody. Not the least attention is paid to the physical or topographical features of the country to be traversed. All of it is presumed to be so favorable for such a work, that, permission is only to be given, and the road will build itself. This mode of building railroads is remarkably pleasant. When people give full scope to their fancy, their imaginings in time become realities to them. Results are measured exactly by their wishes, and means accommodate themselves to the results desired. So with Mr. Whitney's and so with the scheme before us. The idea of a railroad from Quebec to Halifax is perfectly preposterous. If this work should be built, and presented to a company as a gift, it would not pay running expenses. The greater part of the distance to be traversed, is an immense waste, and must always remain so. A shorter and better route from Halifax to Quebec will always be found through the State of Maine. The construction of a railroad from Quebec to the Pacific ocean, north of Lake Superior, is an impossibility. All Christendom might accomplish this work, but no part of Christendom will ever be persuaded to undertake it. No motive can ever be presented to any people, powerful enough to enlist them in this work. Such a line would, for nearly eight hundred miles, traverse a vast and sterile desert, made up of mountain and lake, and covered with snow from four to six feet deep, for six months in the year. For hundreds of miles on this line, the soil would not sustain a solitary individual. If this line should ever be built, no person would think of taking it. He would prefer one traversing a more genial climate, and a thickly settled country, one identical with the line of trade, as well as of comfort and convenience. Such a line must always run south of the great lakes. Think of the idea, too, of building this road for £5,000 per mile, when £50,000 per mile would not construct it.

We should like to know, too, how 20,000 convicts are to be kept at work upon this great line, when in a few hours they could escape into the States. We have no doubt but that the "crimi-

nals" would favor this project, as employment upon the work would be equivalent to freedom.

So much for this great project. The whole of it is a "work of fiction," bold and impassioned no doubt, because cognisance is taken of nothing that checks the imagination or brings it down to reality. But imagination does not build railroads. On the contrary it is difficult for the most imaginative mind to paint to itself all the difficulties involved in such a work.

Reading Railroad.

Below we give a portion of the late report of the Reading railroad, of the operations of the company for the past year. It will be read with peculiar interest, from the important events that have occurred during that period, and which have placed this company in a very advantageous position before the public.

General Account of the Philadelphia and Reading Railroad Co., November 30, 1850.

Railroad.....	\$13,350,531 90
Depots.....	212,396 39
Locomotive engines and cars.....	2,276,576 36
Real estate.....	485,837 35
	<u>\$16,325,332 00</u>
Assets, viz:	
Cash.....	\$47,692 70
Bills receivable.....	37,034 42
Freight and toll bills receivable in December, 1850....	86,690 14
	<u>171,417 26</u>
Debts due to the company.....	295,277 67
Less probable loss.....	24,870 50
	<u>270,407 17</u>
Stocks and bonds held by the	
Co.....	169,620 00
Materials on hand.....	174,966 82
Sinking fund, 1836-60.....	1,278 38
1849-70.....	3,698 54
	<u>4,976 92</u>
Office on Fourth st.....	40,058 65
Total.....	<u>\$851,446 82</u>
Liabilities, viz:	
Drafts payable.....	\$1,065 00
Debts due by the co.....	231,920 57
	<u>233,005 57</u>
Coupons to Jan. 1, 1851.....	259,311 00
Interest due on R. E. bonds..	3,010 65
Dividends on preferred stock	
No. 4.....	56,028 00
Dividends on common stock,	
No. 3.....	249,589 92
State tax for the year.....	18,082 30
	<u>586,021 87</u>
Dividend fund, 1849.....	19,757 09
1850.....	12,662 29
	<u>32,419 38</u>
Total.....	<u>\$851,446 82</u>
Stock.....	\$4,159,832
Preferred stock.....	1,600,800
	<u>5,760,632</u>
Stock—entitled to div., earned after November, 1852, amount created in lieu of same am't of 1836-60 and 1849-70 bonds cancelled.....	275,900
	<u>6,036,532</u>
5 per cent. bonds, 1836-60.....	878,400
6 " 1847-56.....	136,000
6 " 1843-60.....	1,570,800
6 " 1844-60.....	1,490,000
6 " 1848-60.....	1,500,000
6 " 1849-60.....	1,424,000
6 " 1849-70, and	
bonds due in 1850.....	3,079,400
	<u>10,078,600</u>
Bonds and mortgages on real estate....	210,200
Total.....	<u>\$16,325,332</u>

Transportation and Income Account for 12 Months ending November 30, 1850.

CREDIT.	
Travel 92,736, equal to 46,041 through passengers.....	\$148,378 99
Freight on merchandise 63,625 tons.....	125,821 85
Do. on coal 1,351,502 tons, at 153½ cents.....	2,071,731 18
U. S. mail.....	8,400 00
Miscellaneous receipts....	3,626 48
Total receipts.....	<u>2,363,953 30</u>
DEBTOR.	
Working expenses.....	\$434,160 15
Working account.....	261,666 14
Depot account.....	32,140 95
Superintendence account..	61,629 43
Lateral road expenses....	2,427 00
Roadway department.....	154,780 63
Dumpage.....	89,742 97
Freight on missing coal, etc.	5,096 66
Motive power on lateral rails.....	7,901 33
Rents and ground rents....	18,779 84
State, county and city tax.	5,395 91
Profit and loss, interest, etc.	5,702 02
	<u>1,080,323 03</u>
Net profit for the year.....	<u>\$1,283,635 47</u>
Total interest for 1850 on bonded debt.....	\$600,672 00
One year's int. on bonds and mortgages \$209,900 at 6 per cent.....	12,594 00
Total interest for the year.....	<u>\$613,266 00</u>
Renewal Fund.	
Three cents per 100 tons, on 297,103,427 tons transported one mile during 12 months ending November 30, 1850.....	89,132 53
	<u>702,388 53</u>
Dividend fund for the year.....	<u>\$531,236 94</u>
Which has been disposed of as follows:	
Dividend on preferred stock, \$1,600,800 30th June ¾ per cent., and 31st December ¾ per cent.....	\$112,056 00
For balance at the Dr. of renewal fund, including the cost of 10 new locomotives, etc.....	79,718 55
For cost of land, etc., for depot at Pottsville.....	9,127 88
Sinking fund for bonds issued in 1836, payable in 1860.....	25,000 60
Sinking fund for bonds issued in 1849, payable in 1870.....	75,000 00
Dividend in common stock 6 per cent. on \$4,159,832	249,589 92
State tax on div., \$361,661 92, at 5 per cent.....	18,082 30
	<u>568,574 65</u>
Surplus to next year.....	<u>\$12,662 29</u>
It will be observed that the net profits, after paying all current expenses, are more than double the whole amount of interest accruing on the entire debt of the company, and that after making the usual appropriation to the renewal fund of \$89,132 53 for perpetuating the road and its equipments, the net profits are \$581,236 94, which is equal to a dividend of about 10 per cent. on the amount of preferred and common stock (\$5,673,632) now outstanding. The dividend fund has been subjected, as will be perceived, to large and unusual charges, which could not be foreseen. In the month of September last, a freshet, unequalled in its extent, occurred upon the river Schuylkill. It embraced the whole of the section of the country which is drained by that river, and was more or less disastrous to all property within its influence.	
The business of this company was, from the faithful and diligent exertion of those employed, interrupted but for ten working days, and the man-	

agers feel it their duty to express and place on their minutes their approbation of the energetic and efficient conduct of the officers of the engineering and transportation departments in repairing the damages sustained.

A sudden, large and profitable increase of business immediately ensued, and it became alike the duty and the interest of the managers, by every just means within their power, to meet both the wants of the public and the operator. For this purpose ten new first class locomotives were obtained as speedily as possible, and other expenditures were incurred to meet this unforeseen demand.

The expenditures of the renewal fund under this state of things were \$168,851, when the ordinary expenditures would have been only \$65,138. The surplus has been charged to the increase account of the past year.

The cost of repairs in consequence of the damage by the freshet of September, are classed among the extraordinary expenses, for although the works are in some degree liable to injury, by the sudden and not unfrequent rise of the waters of the Schuylkill, yet such wide spread devastation is of rare occurrence.

The expenditures for locomotives, cars, sidings, etc., were imperatively demanded by the increased business, and the consequent addition to the profits has shown their propriety. The annual profit was not diminished, and the value of the whole property has been increased.

An annual appropriation of \$30,000, it is believed, will not only perpetuate the motive power, but (by procuring one first class engine for an inferior one) greatly increase its efficiency, and diminish the annual charge for repairs and expenses.

The managers believe that the maximum cost of renewals of railroad iron (about one cent per ton transported) has been attained, and that the gradual decrease in the number of accidents from defective cars unquestionably proves that their efficiency has been fully maintained.

The required ground has been secured, and an arrangement entered into with the Mount Carbon railroad company for the passage of passenger cars, etc., over their railroad from our present terminus to the new depot. The expenditure for real estate, etc., for this purpose, has thus far amounted to \$9,127 88, which has also been charged to the income account for the year.

Notwithstanding large deductions, amounting in all to \$88,846 43, and the investment of \$100,000 for the sinking funds, the profits have been sufficient to yield a dividend of six per cent. to the common stockholders, which has been declared payable on the 18th inst.

The bonded debt has been reduced during the year \$275,900. Of this \$145,082 97 resulted from the investment of the sinking fund of 1849, and \$124,359 95 from that of the last year.

The common stockholders are of course entitled to the whole investment for the year 1849, which will be divided among the holders of that stock in January, 1853.

This investment, together with the dividends paid, equals 8 per cent. on both common and preferred stocks.

It is again evident that the company largely profit by the use of their extensive workshops in manufacturing all articles required for repairs and renewals, except railroad iron.

The experience of the last three months of the fiscal year establishes that, with the increased number of locomotives obtained by the recent purchases, the equipment of the road is fully equal to the transportation of 1,800,000 tons of coal; and if the same active demand should arise that then existed, the tonnage could be readily increased to 2,000,000 tons.

The expenses, including all charges, have been reduced during the past, as compared with the previous year, as follows:

On coal.....	2 4-100 per ton.
On merchandise.....	23 5-100 "
On passengers.....	9 38-100 "

The cost of transporting coal diminishes proportionately with the business done. This has been especially apparent during the last three months. Should such an amount of tonnage continue to be offered to the company, a great reduc-

tion could be made in the charge for freight, without impairing the actual profit.

The plan suggested in the report of September, 1849, and in January last, for the extension of the bonds due in January, 1850, for 20 years, has met with very general approval, and a very large proportion of those bonds have been exchanged for the mortgage bonds of 1870.

The managers have concluded a purchase from the commonwealth of Pennsylvania of the double track railway, extending from the corner of Broad and Vine streets, in Philadelphia, and running northwest about 3½ miles to the point of connection with this road on the western side of the Schuylkill River. The cost of the railroad and of the real estate purchased in connection with it, was \$243,200.

The managers have annexed a letter from D. A. Neal, Esq., the late representative of the New England interest in this work. The circumstances which led to his appointment he regards as no longer existing, and with characteristic propriety he has declined longer to retain a position in which no active duty is to be performed. He has expressed his abiding confidence in the work he has so thoroughly examined.

The equipage of the road consists of 92 engines, 4,567 coal cars, 550 cars for freight and general use, 28 passenger cars, 2 small do., 9 stationary engines, 10 other steam and water power engines, 3 wood-cutting engines, 7 snow ploughs, 28 carts and wagons and 46 horses.

Coal Trade.

THE ANTHRACITE COAL TRADE FOR 1851.

We give below the official quantity of coal sent to market in the year 1850, compared with 1849.

	1849.	1850.
Schuylkill—Railroad	1,115,918	1,423,977
do. Canal	489,203	288,030
Total	1,605,126	1,712,007
Swatara	78,299	70,919
	1,683,425	1,782,926
Lehigh	801,246	722,622
Lackawanna,	454,240	550,417
Wilkesbarre,	259,080	218,665
Shamokin,	19,650	19,921
Wiconisco,	25,325	37,763
Total	3,242,866	3,332,314

Increase in 1850,	tons	89,448
Of the above quantity of coal.		
Schuylkill county furnished, tons.	1,782,926	
All other regions.	1,549,688	

Excess in favor of the Schuylkill Co, tons 233,238

LEHIGH COAL TRADE FOR 1851.

The quantity of coal sent to market from the Lehigh region, was derived from the following places. We give the trade also for 1849, in connection with 1850:

	1849.	1850.
Lehigh company,.....	379,285	424,258
Beaver Meadow co.....	76,961	27,521
Spring Mountain coal,.....	102,589	43,793
Coleraine coal.....		2,076
Hazleton coal co.....	92,480	54,236
Cranberry coal.....	36,153	22,493
Sugar Loaf coal,.....	11,359	12,106
Buck Mountain coal.....	85,819	103,937
Wilkesbarre co.....	19,590	32,156
Total.....	801,246	722,622
	722,622	
Decrease in 1850.....	78,624	

The decrease in 1850 was caused altogether by the destructive freshets, occurring during the shipping season, which interrupted navigation about two months. The ability of the region, with a fair demand, is equal to about 950,000 tons, with their present facilities.

LACKAWANNA TRADE FOR 1850.

The coal from this region was mined as follows:—

	Tons.
Delaware and Hudson coal mines.....	439,222
Penn. coal company Pittston.....	111,194
Total.....	550,416

Trade of Buffalo.

The Buffalo Commercial of Saturday gives the imports and exports by canal at that place for 1849 and 1850. We copy some of the leading items first cleared:—

	1849.	1850.
Flour, brls.....	1,034,938	983,830
Wheat, bushels.....	3,940,350	3,297,347
Corn.....	3,328,463	2,608,967
Oats.....	346,188	287,960
Hops, lbs.....	8,035	200
Pork, brls.....	41,643	28,463
Beef.....	59,444	78,899
Bacon, lbs.....	4,379,058	7,894,719
Cheese.....	9,634,745	6,835,316
Butter.....	6,590,352	4,850,989
Lard.....	4,344,725	5,848,676
Wool.....	8,640,409	8,805,817

The receipts of a few of the leading articles are as follows:

	1850.	1849.
Sugar, lbs.....	12,680,784	12,665,181
Molasses.....	14,524,337	11,172,433
Coffee.....	4,964,854	5,813,552
Iron.....	14,583,076	9,198,711
Nails and spikes.....	9,115,224	5,005,308
Bloom and bar iron.....	242,337	1,123,675
Pig.....	3,046,809	1,098,866
Castings.....	8,767,110	
Railroad iron.....	12,214,135	
Machinery.....	1,147,160	
Steel.....	459,185	
Horse shoes.....	8,561	
Iron ware.....	88,813	5,813,396
Crockery and glass ware.....	19,024,893	11,162,716
Stone, lime and clay.....	80,662,450	37,582,629
Mineral coal.....	14,349,035	13,367,595
Sundries.....	6,412,861	2,391,791

Castings were last year included with iron ware, and all kinds of iron and steel were in the same account, while this year there are the several different accounts denoted as above.

Public Debt of Pennsylvania.

The Report of the Pennsylvania Auditor General gives the annexed detail of the debt of that state:

Amount over due and unprovided for \$3,106,065	31
Amount reimbursable in the year 1853, 2,157,105	87
Amount reimbursable in the year 1854, 2,995,647	07
Amount reimbursable in the year 1855, 4,555,182	15
Amount reimbursable in the year 1856, 2,780,168	24
Amount reimbursable in the year 1858, 7,064,612	15
Amount reimbursable in the year 1859, 1,242,580	53
Amount reimbursable in the year 1860, 2,643,437	62
Amount reimbursable in the year 1861, 120,000	00
Amount reimbursable in the year 1862, 2,264,532	61
Amount reimbursable in the year 1863, 200,000	00
Amount reimbursable in the year 1864, 3,365,138	64
Amount reimbursable in the year 1865, 1,828,048	18
Amount reimbursable in the year 1868, 2,523,311	85
Amount reimbursable in the year 1870, 1,938,732	88
Amount reimbursable in the year 1879, 400,000	00
Account of bank charter and other loans provided for.....	1,492,651 58

Total.....	\$40,677,214 58
Of this \$200,000 bears interest at the rate of 4½	
\$38,009,817 87 at 5, \$2,387,396 81 at 6 per cent.	

The following sums were realized from the various lines of public works:

Main line.....	\$1,342,501 36
Susquehanna.....	
North branch.....	170,599 79
West branch.....	
Delaware.....	200,719 17
Beaver, old balance.....	26 84

Total.....\$1,713,848 16

The Adirondac Steel Works.

This is the only establishment in the United States where Cast Steel is manufactured from American Iron.

As might be expected in the commencement of a business entirely new and unknown in this country; and one requiring the greatest nicety, many unforeseen difficulties had to be overcome. We have reason to know that they have now been overcome, and that the company is in successful operation, producing cast steel of highly approved quality. The superiority of the American article does not arise from any superiority in the mode of manufacture over the English, but from the iron used for the purpose. Great Britain does not produce iron suitable for making good cast steel; hence they are compelled to resort to Northern Europe, viz.: Sweden, Norway and Russia for it. As the importations into England of the peculiar varieties of iron of these countries which are well adapted to the purpose, bear a small proportion to the quantity of cast steel made, it would appear that a large portion of the iron entering into the composition of their steel is English.

The Adirondac steel is made entirely from one variety of American iron, which they prefer to any other in the world. This iron is made at the sources of the Hudson river, in the county of Essex, N. Y., and about 40 miles westward from Lake Champlain. The ore from which it is made is a peculiar quality of "magnetic oxide," the geological formation of that locality being also peculiar, consisting of rocks "hypersthene and Labrador feldspar."

In the manufacture of this steel, it is not necessary first to make into bar iron, but it is made direct from the cast metal, producing an important saving in the expense of manufacture.

The natural advantages which the company claim for introducing this iron are such, that the entire wants of the Union for steel could be supplied by it for centuries to come. The deposits of ore are immense. For a particular description of them see "Natural History of New York," by Professor Emmons, part IV.

We hope this enterprise is destined to become of great national importance, and that the United States may become, what Sweden is now to the rest of Europe, in furnishing steel.

New Railroad to the Coal Fields from Philadelphia.

The *Miner's Journal* says that "preparations are now making to apply to the legislature for a charter for a new railroad from Pottsville to Philadelphia. It has been ascertained that an excellent road can be made and equipped for seven millions of dollars, which can carry coal for \$1 per ton and pay a handsome dividend to the stockholders.—Schuylkill county is deeply interested in the project, because it would disentangle the trade of a tax of about thirty million dollars which it has to bear, and Philadelphia is also deeply interested in the movement, because it is the only mode by which she can expect to retain the vast coal trade of the State. New York is pushing rapidly for the prize. She has climbed the mountains into the Wilkesbarre region, and will embrace Schuylkill and Carbon counties in two or three years, unless this new road is made. Coal must be delivered in Philadelphia for \$1 00 per ton, or she will lose the trade.

In two or three years, the present railroad will not begin to meet the trade of this section, and her immense capital, doubled up by giving dollar bonds for fifty cents capital, is so heavy a tax upon the trade, that our operators are ready to pledge themselves to give their trade to the new road as soon as made. The project at present is to run the road on the opposite side of the Schuylkill, and connect with the Norristown road.

The Danville and Pottsville road will be pushed shortly, and the whole northern route to Lake Erie through Williamsport, connecting also with, an

tapping the New York and Erie railroad at Elmira, will also be pushed shortly."

A new Railroad to the Coal Fields.

A meeting of several hundred citizens of Orange county, N. Y., and of Sussex and Warren counties N. J. was held at Chester the terminus of the Newburgh branch of the Erie Railroad, on the 26th ult. to devise means for construction of a railroad from Chester to the Delaware Water Gap, so as to bring the coal fields of Pennsylvania into direct communication with tide-water at Newburgh and form a continuation of the Boston, Hartford and Fishkill railroad. Thos. Powell, John Beveridge, Homer Ramsdell, T. M. Niven, Hon. J. E. Edsall, John J. Monell, Samuel Fowler, E. L. Welling, John Cowdrey, W. L. Ames, and other enterprising citizens of this State and New Jersey, were present and addressed the meeting in favor of the project. A committee was appointed to open subscription books, and other steps were taken to organize the company. There is every prospect of the speedy construction of the road, which will undoubtedly prove of immense importance to the State of New Jersey, and to this city and the neighboring portion of our own State, as well as to our eastern neighbors, who are so much interested in opening communication with the coal beds. By statistics in the hands of the projectors of this enterprise, it appears that coal can be delivered at Newburgh at a cost of less than \$3 per ton.

In connection with this it is stated that the continuation of this road from the Delaware Gap through Pennsylvania to the coal-fields will be prosecuted to completion forthwith—the company being organized and the stock all subscribed.

Alabama.

Girard Railroad.—We have received a copy of the report of a preliminary survey of the above road, which is to run from the Chattahoochee river, opposite Columbus, Georgia, to Mobile Bay. The whole length of line is 238 miles. The estimated cost of the road is as follows:—

Road bed.....	\$1,472,200 86
Superstructure.....	1,159,616 00
Equipment.....	300,000 00
	\$2,931,816 86

Columbus is soon to be connected with the railroads of Georgia, through the Muscogee railroad. The above, therefore, would open a direct line of railroad to Mobile, forming an important through route in addition to local traffic.

The following are the estimated annual receipts:—

50,000 through passengers.....	\$7 00—\$350,000
50,000 way ".....	\$3 50— 70,000
Mail.....	50,000
75,000 bales of cotton.....	\$1 25— 93,750
Merchandise and groceries.....	200,000
Lumber and miscellaneous products.....	20,000

Gross receipts.....	\$783,750
Expenses 40 per cent on receipts.....	313,500

Net profits.....\$470,250

Ohio.

Railroad from Cincinnati to Zanesville.—A project of much importance in railroading is attracting great attention in Ohio—that of constructing a railroad upon a direct line between the above cities, passing through the towns of Lancaster, Circleville, Washington, Wilmington, etc. At Zanesville, the Central Ohio railroad carries the above line to Wheeling. A bill granting a charter to this project has, we believe, passed the Lower House of the Legislature of Ohio, and will probably become a law. In such an event, we think that there can be but little doubt of the construction of the above road. This line has the advantage of running through a number of important towns, and a very fine portion of the State, which it will connect

with Cincinnati by a much shorter route than any one now in operation or progress.

A large meeting was recently held at Lancaster in promotion of this object, the proceedings of which indicated the intention of the immediate commencement and vigorous prosecution of this work.

Finances of Alabama.

The Comptroller of the State of Alabama has submitted his annual report of the receipts and expenditures of the State for the year ending November 2, 1850, from which we compile the annexed statement:—

Balance in the treasury November 2, 1849.....	\$552,568 66
Receipts from all sources.....	509,424 93

Total for the year.....	\$1,149,993 59
Total expenditures.....	471,673 65

Balance on hand Nov. 2, '50... \$678,319 94

Census of Vermont for 1850.

	No. of Population		Gain.
	towns.	in 1850.	1840.
Bennington.....	17	18,587	16,911
Rutland.....	25	33,068	29,195
Orange.....	17	27,285	27,973
Washington.....	18	24,649	23,506
Chittenden.....	16	29,034	22,971
Lamville.....	11	10,955	10,475
Addison.....	23	26,549	24,986
Franklin.....	15	28,708	24,531
Orleans.....	19	15,705	13,844
Essex.....	20	4,650	4,226
Grand Isle.....	5	4,140	3,883
Windham.....	23	29,072	27,471
Caledonia.....	21	23,599	21,689
Windsor.....	24	38,321	40,193
Total.....	254	314,322	291,894
Total population in 1850.....		314,322	
" " 1840.....		291,894	
Gain.....			22,428

Deaths during the year, June 1, 1849 to June 1, 1850.....	3,096
Total number of farms.....	29,938

Finances of Maryland.

The finances of Maryland are in a flourishing condition. The receipts in the treasury largely exceed the expenditures, leaving a balance annually applicable to the payment of the public debt:—

The receipts for the fiscal year ending November 30, 1851, estimated.....	\$1,225,000 00
Balance in treasury, Dec. 1, 1850....	245,408 81

Total resources.....	\$1,470,408 81
Expenses of all kinds, including \$100,000 for the convention.....	910,000 00

Balance on hand, Dec. 1, 1851.. \$560,408 81

The balance in the treasury on the 1st of December, 1850, was on hand, after paying all expenses, interest upon public debt, and \$500,509 of the funded interest. The balance estimated to be on hand, December 1, 1851, will be applicable to the payment of the principal of the public debt. This looks well for a State that a few years since was delinquent in the payment of interest as it became due.

The Crystal Palace.

The building now in progress of erection in London, to be used for the exhibition of the world's industry in 1851, is to be 1848 feet long, 403 wide, and will cover 18 acres of land. The interior of the building will contain 33,000,000 cubic feet. Tables will be placed around the interior for articles of exhibition, and will occupy space equal to 8 miles. There will be a gallery about a mile long. At the centre of the building there is to be a dome raised, extending the full width of the building, 108 feet high, of glass or iron, and enclosing a large cluster of trees. The number of trees will

be 3,230, which will vary in length from 14½ to 20 feet.

The roofing over the galleries will be supported by 2,244 pillars. In these pillars are to be placed pipes to take water from cisterns, to the amount of about 34 miles in length. The probable cost of the building will be £79,800, on condition that the constructors retain the material and building after the exhibition, or £150,000 if they relinquish such claim, and allow it to remain. Over 2,000 men are now employed in its construction. The glass used is half an inch in thickness, and is placed on the ground ready for the glazier. It is intended to have all kinds of refreshments inside of the building, except liquors. Water will be furnished gratuitously. A garland of artificial flowers, 1851 feet in circumference, and containing 1851 different varieties of flowers and fruits, illustrative of the year in which the fair is held. It will be enclosed in a glass case, on the side of which will be an inscription in commemoration of the occasion.

Commerce of the St. Lawrence Canals.

The following shows the movement of property upon the canals of Canada for the year that has just closed:

	Total Tons.	
	Vcs.	Tonnage.
British vessels.....	4,676	316,912
" steamers.....	2,51	207,131
American vessels.....	312	19,939
" steamers.....	27	3,340
Passengers, 21 year and over, No.....		35,047
" under 21 years, No.....		884

From British to British Ports.

	Up tons.		Down tons.	
	Ves.	Tons.	Ves.	Tons.
British vessels.....	2,101	136,613	1,885	128,478
" steamers.....	908	82,832	780	75,734
American vessels....	5	626	4	792
Passengers, 21 years and over, No.....		15,042		8,752
Passengers, under 21 years, No.....		774		40

From British to American Ports.

	Up tons.		Down tons.	
	Ves.	Tons.	Ves.	Tons.
British vessels.....	70	9,288	318	20,932
" steamers.....	174	22,044	68	2,563
American vessels....	18	3,881	61	2,663
" steamers.....	25	2,972		
Passengers, 21 years and over, No.....		7,336		2
Passengers, under 21 years.....		69		1

From American to British Ports.

	Up tons.		Down tons.	
	Ves.	Tons.	Ves.	Tons.
British vessels.....	231	15,085	63	60,922
" steamers.....	48	1,842	172	2,179
American vessels....	62	2,591	23	4,160
" steamers.....			2	368
Passengers, 21 years and over, No.....		8		3,908
Passengers, under 21 years, No.....				

From American to American Ports.

	Up tons.		Down tons.	
	Ves.	Tons.	Ves.	Tons.
British Vessels.....	5	248	3	176
" steamers.....			1	324
American vessels....	90	3,359	49	1,767
		Totals.		
	Up tons.		Down tons.	
	Ves.	Tons.	Ves.	Tons.
British vessels.....	2,407	161,234	2,269	155,678
" steamers.....	1,130	106,718	1,021	100,413
American vessels....	175	10,557	137	9,382
" steamers.....	25	2,972	2	368
Passengers, 21 years and over, No.....		22,386		12,662
Passengers, under 21 years, No.....		843		41

Amount of tolls.				Section.	Name of canal.	Am't. of tolls.
British vessels.....	721	0	d.	1.	Lachine.....	£18,563 0 2
" steamers.....	761	2	7½	2.	Beauharnois.....	626 1 6
American vessels.....	55	13	4½	3.	Cornwell.....	101 8 7
" steamers.....	11	0	9½	4.	Edwardsburgh.....	38 15 4
Passengers, 21 years and over.....	557	1	0½	Total amount of tolls.....£19,329 5 7		
" under 21 years, No.....	9	15	6	Total amount of dues collected at the Montreal terminus.....401 8 0		
Articles.				Grand total.....£12,730 13 7		
Brick, lime, sand, slate and stone.	864½	Up tons.	Down tons.	The Iron Trade.		
Gypsum, cement, clay and manures.....	115½	89	234½	<i>Imports of Foreign Iron</i> —The following table is an official statement of the amount of Foreign Iron imported into the United States annually since 1843, together with its value and average cost per ton. The table is an interesting one. The total value of the imports of the year ending June 30, 1850, was \$9,234,542 00, and the amount paid for duties on the same was \$2,876,362 60.		
Marble.....	89	253½		Pig Iron.		
Salt.....	6,230½	130		Years.	Quantity Tons cwt.	Value.
Coal.....	1,282½	502				Av. cost pr ton.
Manganese, bark and hemp.....	10	49		9 mo to June 30, '43..	3,783 01	218,251 \$12.46
Tobacco, unmanufactured.....	79½	243		Year to " " '44..	14,941 00	500,532 13.42
Ores.....	14	197½		" " " '45..	27,510 09	806,291 18.40
Potatoes, apples and onions.....	42	201		" " " '46..	24,187 16	480,573 20.24
Rosin.....	21	343		5 mo to Nov. 30, '47..	4,478 05	82,398 18.40
Bran and ships' stuff.....	1	140½		7 mo to June 30, '47..	23,477 09	472,088 20.11
Barley rye.....	163½	588½		Year to " " '48..	51,632 01	815,155 15.79
Oats.....	1	1,887		" " " '49..	105,632 09	1,405,613 13.30
Indian corn.....	7	197		" " " '50..	74,784 07	950,660 12.69
Meal.....	3	29		HAMMERED IRON.		
Clover seed, flax seed and flax...	7	26		9 mo to June 30, '43..	6,254 01	327,550 52.37
Pressed hay, and pressed broom corn.....	5	21		Year to " " '44..	11,822 11	583,065 39.32
Oil cake and oil meal.....	17	1,028½		" " " '45..	18,876 10	872,157 47.99
Cattle, sheep and hogs.....	20	271		" " " '46..	21,328 07	1,165,409 54.65
Horn, hoofs and bones.....	9,855½	2,812½		5 mo to Nov. 30, '46..	10,313 02	288,323 56.50
Broken castings, pig and scrap iron.....	1,341	365		7 mo to June 30, '47..	4,493 00	265,380 53.30
Pork and beef.....	1,997	393½		Year to " " '48..	20,156 07	975,214 48.38
Bacon and hams.....	1,774	577		" " " '49..	10,598 04	525,770 49.61
Lard.....	1,821½	24		" " " '50..	14,706 12	744,735 50.64
Fish.....	155	61½		BAR ROLLED.		
Whiskey.....	850½	270		9 mo to June 30, '43..	15,757 17	511,282 32.45
Furniture and other baggage.....	106½	34		Year to " " '44..	37,891 04	1,065,582 28.42
Carts, waggons, sleighs, and ploughs.....	17,491	6,296½		" " " '45..	51,188 12	1,491,748 33.05
Railroad iron.....	622½	811		" " " '46..	24,108 16	1,127,418 44.76
Ashes.....	2½	494		5 mo to Nov. 30, '46..	8,098 08	434,316 53.63
Flour.....	87	322		7 " " June '47..	32,085 08	1,695,173 52.83
Butter.....	81	25		Year to " " '48..	81,589 06	3,679,593 45.10
Cheese.....	924	11,230½		" " " '49..	173,457 00	6,060,063 34.93
Biscuit.....	429½	1,094½		" " " '50..	247,951 02	7,397,166 29.83
Tallow.....	3,756½	461		OLD AND SCRAP IRON.		
Beer, Cider, and vinegar.....	361	10		9 mo to June 30, '43..	157 14	2,743 17.33
Wheat.....	1,639½	92		Year to " " '44..	2,123 03	43,796 20.34
Other agricultural products not enumerated.....	9,260	602		" " " '45..	5,847 19	119,740 20.48
Sugar, molasses.....	92	49		" " " '46..	2,344 07	56,531 23.95
Coffee.....	1,639½	184		5 mo to Nov. 30, '46..	250 03	5,831 23.32
Stoves and other castings.....	9,260	204		5 mo to June 30, '47..	1,443 08	34,865 21.22
Nails, spikes and bar iron.....	92	3		Year to " " '48..	6,630 08	140,036 21.12
Steel.....	602	978½		" " " '49..	9,450 01	140,424 15.28
Window glass.....	49	73,014½		" " " '50..	10,104 10	141,981 16.03
Raw hides and skins.....	6			THE IRON TRADE OF SOUTH STAFFORDSHIRE—PAST AND PRESENT.		
Wool, rags, junk and manilla.....	3			Fifty years ago, there were in South Staffordshire about 40 blast furnaces, producing, on an average, say 30 tons each of pig-iron weekly, or an annual make, in the aggregate, of 60,000 tons; and as this district has very rarely exported pig iron, we may assume that such annual produce was applied for conversion into malleable iron and castings. If we deduct from this quantity say one-third, to meet the requirements of the foundry, and the waste of conversion into malleable iron, we shall have as the probable make of such an article in South Staffordshire 40,000 tons annually. An allowance of one-third, or 20,000 tons, may appear very large for such objects, and was assuredly a large drawback upon such a make of pig iron; but whoever is acquainted with the somewhat strange and complicated system of manufacturing iron which was then pursued, compared to the present simple process, will not be much astonished. In those days a puddling furnace was a very rare sight indeed, and, perhaps, not much thought		
Charcoal, copperas.....	12,657½					
All other goods and merchandise.....	73,014½	96,453				
Total tons.....	73,014½	96,453				
Lumber.						
Square timber M C feet in boats. .	1	20½				
do do do in rafts. .	4	292				
Round or platted, 12 x 12 L feet in rafts.....	5	136½				
Boards, planks, &c., M feet in measure.....	1,277½	25,237				
Boards, planks, &c., M feet in rafts. .	6,256	576½				
Pipe staves and heading, M.....	1,398½	531				
West India do do.....	572½	3,322				
Barrel do do.....	4	39,415				
Shingles do do.....	5	317½				
Firewood, cord.....	2,383	1,802				
Mahogany, except veneers, M.....	1,467	6				
Sawed, lath, hoop, poles, oars, &c. .	18-1180	2-206				
Empty barrels, No.....	4-3692	6				
Saw logs.....						
Free vessels and rafts.						
British vessels.....	18-1180	12-776				
" steamers.....	4-3692	2-206				
" rafts.....		6				

Summary of tolls collected on the St. Lawrence Canals, given by sections, for the year 1850:

of previous to their introduction by Mr. Cort.—Equally distant was the idea of rolls, for rolling the iron into required forms, the hammer being the only machinery employed for that purpose. 'Chaf-feries,' 'lumping fires,' and 'hollow fires,' have long been dispensed with, along with the tedious, tho' not objectionable, system of 'stamping,' and there can be no doubt but some of the more intelligent manufacturers of that day imbibed the thought, that the time would come when a much greater progress would be made, and that an article of such utility must gradually become more generally appreciated, and more largely applied; but the very crude and uncouth form in which it was produced, undoubtedly prohibited a more general application. Finished iron could not then be attained in any other shape than the hammer was capable of giving, and for this an excessive high figure was demanded, so that to the foreign consumer it must have been a costly article indeed. Truly, such were the days of infancy in the iron trade; but in proportion to the advancing requirements of the age has been the progress of art and science; and as the mind of man is gifted with an imaginative and inventive capacity, so we find that in that day his powers were brought to bear on the subject of iron manufacture. If the history of the iron trade be carefully marked from this period upwards, we shall find that gradually the old system gave place to improvements, and that every improvement had the effect of a larger produce, and, consequently, a cheaper price. As the demand increased the capability of produce increased with it; and so events progressed till the commencement of that extraordinary era—the introduction of railways. From this period the iron trade may date what may be called its *second birth*. A new world, comparatively speaking, thus lay before it; and its requirements came upon the trade in such a manner as to convince the manufacturers of their inability to meet them. The consequence was the erection of other works, upon an extensive scale, and the enlargement of those which already existed. Twenty-five years ago, South Staffordshire had not more than 20 bar-iron makers in it, whose united weekly produce could not much exceed 3000 tons; and although (as will be seen from the accompanying list) the capability of production has increased in a three-fold ratio, still such increase has literally forced itself upon the trade, by the impetus given to it in the demand for rails, and a further development of local requirements. But the old rule of supply and demand was here called into requisition; and as the means of supply were found inadequate to meet the growing demands, and urgent calls were made upon the manufacturers, the only course left for them was to increase their make in proportion, and the very circumstance of a new demand, arising from such an unexpected source, justified them in so doing; special cases require special treatment. Had no improvements been made upon the old system of manufacture, what could have been done with the enormous demand for rails which has subsequently arisen? It, no doubt, occurred to the more reflective manufacturer that such a species of demand would eventually subside, and that when it so happened disastrous results would follow. The visitation has accordingly come, and with its predicted consequences, which the trade has in truth felt; it is even now smarting under the blow inflicted. The reverses which the railway system in general has experienced have, no doubt, hastened the crisis, and the unprecedented heart-sickening commotions of the continent have added their share to the generally-felt and crushing depressions of the last three years.

That the trade generally is now unproductive of profit to the manufacturer, is beyond all doubt; and although the make is curtailed fully two-fifths, still prices continue remarkably low. There can be no doubt but the present ratio of make is such as meets the limited demand, and must, if adhered to till the spring of the year, at least have the effect of bringing higher prices; besides, the continent has been all but closed to the trade for the last three years, and the wants there must be considerable, and must ultimately be supplied; and if the heavy import duties which some of the foreign governments see fit to impose were so revised as to admit British iron, a good effect must follow. The United States

too must contribute her quota of orders for railway bars, in addition to other kinds, for America is not yet thoroughly covered with railways; while Germany, Russia, and other countries, will yet require enormous quantities; and who is so fitted to furnish such an article as the British manufacturer.—*London Min. Jour.*

AMERICAN RAILROAD JOURNAL.

Saturday, January 18, 1851.

Qualification for Management of Railroads.

In our paper of the 14th ult. we commenced an inquiry into the subject of the importance of adopting some means for the better education and instruction of the employees on our railroads. As a proof of the necessity of this, we pointed out the fact, that while we are constantly cheapening the process of the construction of railroads, that of operating them is constantly on the increase. We endeavored to show that the great expense incurred was due in no inconsiderable part to the inexperience and want of training of those employed; that from the rapid increase of the number of railroads, their management must continue to be entrusted to inexperienced hands; that the experience and qualifications possessed by a few, and which is displayed upon our oldest and best managed roads, was unattainable by other companies; and urged the importance of some plan, or organization, by which the aggregate amount of railroad experience might become the common stock of all. We now resume this subject for the purpose of developing our views more in detail.

Let us in the first place look at the vast importance of this matter.

The whole cost of the railroads now in operation in the United States, cannot be less than \$300,000,000. We will suppose that the gross receipts upon these equal 15 per cent of their cost, or \$45,000,000. One half of the gross receipts, or \$22,500,000, are absorbed by the working expenses of the roads.—Of this vast sum, we suppose that 20 per cent. at least is lost, for want of proper qualifications and proper management of those entrusted with their care. We may have stated the extent of this loss too high, though we do not think so. Here, then, we have \$5,000,000, or one ninth of the gross earnings of our railroads annually thrown away, and which should and may be saved.

A suitable education is requisite for the proper discharge of the simplest office, or duty, even those nearest connected with our daily life. For these, ordinary experience may qualify us. A person need not go to school, or study any scientific work, to teach him to handle the spade. But when we leave the simplest forms of labor, we are then obliged to act in reference to laws and principles, which are either not obvious at the time, or the extent of their operation is not a matter of ordinary perception, but are determined by experiments, undertaken for the express purpose of elucidating their laws and modes of operation. Take, for instance, certain properties of iron. We all know that its internal structure, and many of its properties, are entirely changed, when its external appearance remains the same. It is well known that a railroad axle, after performing a certain amount of service, becomes unfit for further duty. To know how to act safely in this matter, we must first determine its qualities, and the effect of a certain amount of wear, from actual experiments; and apply the formula thus deducted to each particular case. So with everything else. A person is not fit to take

charge of a railroad, till he has informed himself thoroughly as to the qualities of materials used; as to the amount of service they are fitted to perform; the change of structure produced by wear; the laws of motion; the increased effect of increased speed: in fact of everything coming within the scope of physical science.

Now a person who has had no opportunities for instruction, must acquire this knowledge by the results of his own experience. He may not have either the time or means of instituting any formal experiments. His time may be too much taken up by his duties to allow sufficient opportunities for observation. It must be borne in mind also that experiments which prove a negative are just as necessary for our guidance, as those which demonstrate the truth or affirmative. We get the boundaries of truth only by exposing all error. It is much more necessary that soundings and charts be made of a dangerous coast, than one which has no hidden danger. It is just as necessary to be told what we should not do as what we should do, for without such teachings a person may spend the best part of his time without advancing a particle, except that there is one chance less that he may be wrong the next time. Now here is the great office of the teacher. It is to unfold to the learner the boundaries of knowledge; to point out the right course, and give us as our guide in it all the light that past experience can supply. Without such training the individual is where he was three thousand years since. With it, he represents in himself the collective wisdom and experience of all who have gone before him.

For the management of a railroad there is much greater need of a thorough preparation and training than for almost any other calling, as, from the amount of property involved, and the condition under which material is used, the most disastrous consequences frequently follow the least mistake or ignorance of those employed. In the running of a locomotive, for instance, we frequently tax some portion of its machinery, or of the rail, very nearly up to its capacity. A cubic inch of iron will sustain the pressure of a given number of tons.—any additional weight will crush it. In laying a rail, for instance, if the face of it does not correspond to the surface of the wheel, the angle presented to the trains is crushed down to a surface broad enough to sustain the load. So with every portion of the machinery. Unless every part is the exact complement of the other, unless there is a perfect harmony throughout, the wear and tear, which, in machinery properly adjusted, is very slight, becomes enormous. In one case we keep within the limit of endurance, in the other we transcend it. The one case is wear, the other destruction.

But we suppose it is useless to enlarge upon the necessity of adopting a system in the management of our railroads which shall be based upon the best evidence which can be found in these matters.—There are none, we presume, but will admit this general proposition. The great question for consideration is how shall this desirable result be accomplished?

The remedy lies entirely within the ability of those employed upon railroads, and this is, simply to follow precedents set us by other interests or pursuits. To form an association for mutual instruction and improvement. Such association would immediately collect together whatever knowledge or qualifications that existed upon the points to be discussed. All its members, therefore, would be

in a position to be educated up to the highest point of excellence of any individual one. The aggregate of all would become the property of each, and this alone would place the profession as a body vastly ahead of its present condition. But this would constitute but a small part of the advantages of such an association. It would at once erect a higher standard of excellence, and stimulate to vastly greater exertions. New ideas are evolved by bringing members of the same profession into contact with each other. When a person exhibits himself before his associates, he of course puts his best foot forward. Such an association, too, would very soon provide the means for carrying out a thousand experiments, beyond the ability of any individual to make. Its meeting would afford a good opportunity for testing the myriads of inventions, which are now the source of so much annoyance to our companies, that most of them make it a rule to reject them altogether without inspection or examination, irrespective entirely of their merit.—It would undoubtedly, too, lead to some general system for the running of our railroads throughout the country, and to the adoption of a uniform rate of speeds, or for confining the rate within the limit of economy. The association properly conducted could in a thousand cases give to right ideas and proper system of management, that prominence and influence which is now withheld from them, from jealousy, from supposed interests, from a lack moral courage, or fear of consequences. It would become the common arbiter in disputes between different companies—a sort of Congress of nations, whose opinions, usages, and modes of proceedings, would, among railroads, as among nations, ultimately be recognized as of the same binding force as positive law.

Let an association be formed embracing all the railroad companies in the country, which shall have regular meetings, as often as possible, at convenient points. The principal feature of these meetings should be addresses from those qualified to instruct. For the purpose of fully accomplishing its object, sufficient funds should be provided for instituting experiments, or for any other needful expense. This sum the several companies should furnish in proportion to their capital. To make up the sum annually needed, would require but the merest pittance from each. The rooms of this association would be the proper headquarters for information upon every subject connected with railroads, where companies in want of engineers or workmen, or of the results of experiments, of any approved manner of working, or any model of machinery, could supply all their wants, without expense or delay.

Such are some of our views as to the importance of an organization of our railroad companies into an association for mutual profit. We have but merely indicated some of its advantages.—We think that every railroad will appreciate the reasons we have urged. Will not some one step forward, whose name and reputation will command influence and respect, and aid in effecting this most desirable object?

Patent Compound Rail.

This rail, of which a description will be found in another column, is an American invention, and is being manufactured by the Mount Savage Iron Company, Maryland. Communications to be addressed to J. F. Winslow, Troy, who will give any required information on the subject. The Mount Savage Company are now manufacturing

a quantity for the Reading railroad, in Pennsylvania.

The Stock and Money Market.

There has been no change in the money market since the close of last week, prejudicial to those having securities to negotiate. A few of the fancies are lower, but a decline in them has no reference to the state of the market—only to the relative position of speculators. There is a gradual and steady advance in all the sound stocks, in our leading cities, indicating a continued abundance of money.

There is one fact favorable to the securities of country roads, and that is, the steady advance which characterizes them after they pass into the hands of our capitalists. This shows that investigation serves to demonstrate their intrinsic value. This fact will tend to keep the money market easy, as it will prevent large quantities from being thrown upon the market, from fear of a decline. Another fact which will exert a favorable influence, is the early prospective completion of a number of our leading lines of railroad. The New York and Erie will be completed at the opening of the coming season. The Pennsylvania central railroad is also advancing with great rapidity toward Pittsburgh, its western terminus. The Baltimore and Ohio company have now secured all the means necessary for the construction of that stupendous work, which is now progressing as fast as money can be economically expended. In the east, the great line from Portland to Montreal is being pushed forward with great rapidity, and will probably be opened in a year from July next. The completion of these great lines, now far advanced, with others of a less magnitude, will relieve the market of the very large demand pressing upon it for these works; while their opening will exert a powerful influence upon the business of the country, and add largely to its means, by increased facilities given to business, and the more perfect development of our resources. In many parts of the country, railroads add so immediately to the means of our people, in reducing the cost of transportation, the great obstacle to our prosperity, that the cost of the construction is scarcely felt. This is one, and the great reason, why the enormous amount absorbed by railroads does not exert more influence in causing a scarcity of money.

In New York the speculative feeling, fostered by the abundance of money, has shown itself, not only in the rapid advance in stocks, but is probably giving an inflated value to other kinds of property—real estate in particular. But when we remember that this city, with its environs, has increased for the past five years at the rate of 50,000 inhabitants a year, and will for aught can be seen increase at a much greater rate for the next ten, we must expect a very rapid advance in real estate.

In Boston stocks are steadily improving. The advance is more marked in those which, it is supposed, will derive advantage from the opening of the Ogdensburg railroad, of which great anticipations have been formed. This road was not opened in season last fall to demonstrate fully its capacity; though there can be little doubt that it will become a very important avenue from the St. Lawrence to tide water. After its freight reaches Lake Champlain, a large portion of it will come to New York, to which it is nearer, measured by cost of transportation, than Boston. Massachusetts, Vermont and New Hampshire will undoubtedly receive a large amount of western produce over

this route, but such as is designed for export will come as it does now, to this city.

The advices from England by the last steamer show an easy state of the money market there. They also indicate an attempt to put up the price of rails, which are quoted at an advance; though we presume that contracts can still be made at the old rates. A change in the market is to be expected after the long depression which has existed, and this change must be upward. But as there seems to be but little probability of any immediate modification of our last tariff, we do not expect to see a great advance of the foreign article under existing duties. The capacity to make, in England, is enormous, and her manufacturers find it the most difficult matter in the world to lessen their make or to discontinue working. Their laborers must be fed, either at the poor-house or in payment for their labor. Unless an absolute loss is sustained, their interest forces them to keep at work, to save themselves from a worse condition of supporting the same persons without labor.

SALES OF STOCKS IN BOSTON.

	Jan. 16.	Jan. 9.
Old Colony Railroad.....	66½	67½
Boston and Main R.R. 104½ a	105½	105½
Eastern Railroad.....	101½	101½
Fitchburg Railroad.....	110½	110½
Michigan Central Railroad....	98½	98½
Northern Railroad.....	b 4 m 75½	
Vermont Central Railroad..	37½ a 47½	38
Vermont and Mass. R.R. b 30 d	32½	32½
Western Railroad.....	103½ a 103½	102½
Ogdensburg Railroad....	s 30 d 40	40½
Rutland Railroad.....	59	60
Sullivan Railroad.....	18½	
Portland, Saco & Portsmouth R.R.	97	
Boston and Worcester Railroad.	103½	101½
Rutland Railroad Bonds.....	89	
Vermont and Mass. R.R. Bonds..	89½	
Sullivan R.R. Mortgage Bonds...	79½	
Ogdensburg Railroad Bonds....	99½	

SALES OF STOCK IN NEW YORK.

	January 11. Sales.	January 18. Sales.
U. S '67 Loan.....	116½	116½
Reading Bonds '70..		81
Erie 1st Mort. '70..		110
Erie R.R.....	91½	89½
Hudson River R.R..	86	86
Harlem R.R.....		70½
Stonington.....		53
L.I. R.R.....	13½	18
Norwich & Wor....	68½	66
Albany & Sch'y R.R.		99½
Utica & Syracuse...		135
Del. & Hudson.....		139

Gorgia.

Macon and Western Railroad.—The comparative earnings of this road for the month of December 1849 and 1850 are as annexed:—

December, 1850—Passengers.....	\$10,613 19
" " —Freight.....	12,213 81
" " —Mail.....	864 80
Total.....	\$23,691 80
December, 1849.....	21,928 01
Excess in 1850.....	\$1,763 79

Tubes, Tubes, Tubes.

THE undersigned have received special permission from, and are in direct communication with, the Birmingham Patent Lap Welded Iron Tube Company, for the sale of their very excellent and superior Boiler and Gas Tubes in large or small quantities.—These Tubes are sold very extensively in England and on the continent of Europe are sold exclusively by

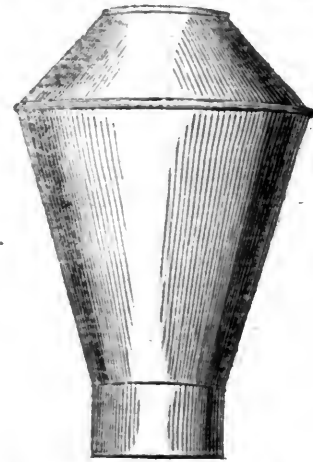
WM. BIRD & CO.,
Iron and Tinplate Merchants,
44 Wall st., New York
5 Martin's Lane, City, London,
and 140 Buchanan st., Glasgow.

American Railroad Iron.

1000 Tons, weighing 50 lbs. per yard, manufactured by Reeves, Abbott & Co., at the Safe Harbor Iron Works, and now lying in yard at Brooklyn, for sale by

CHOUTEAU, MERLE & SANFORD,
No. 51 New street.

French & Baird's SPARK ARRESTER.



NOTICE—The co-partnership heretofore existing between RICHARD FRENCH & MATTHEW BAIRD, (for the manufacture and sale of Spark Arresters,) under the firm of FRENCH & BAIRD, of the county of Philadelphia, was dissolved on the 13th of August last, by mutual consent. The business will hereafter be conducted by EDWIN R. BENNET, of 48 and 50 Duane st., New York city. Mr. Bennet having purchased all our right, title and interest in the manufacture and sale of Spark Arresters for Locomotive and other Engines, we beg for him a continuance of the liberal patronage heretofore extended to us.

R. FRENCH.
M. BAIRD.

Philadelphia, October 3, 1850.

The undersigned hereby gives public notice that he is the sole manufacturer of the above article, under the French & Baird patents, of whom alone it can be purchased in the United States.

He also keeps on hand a full assortment of "PATENTED IRON" for the above Spark Arrester.

RADLEY & HUNTER'S Patent Spark Arrester.

The undersigned is also sole manufacturer for the U. States, of Radley & Hunter's celebrated new invention, and now offers to the public a perfect Spark Arrester, which possesses the advantage over all others of being of the most simple construction, and much more durable than any ever used. The manufacturer invites an examination of this Arrester by the railroad public, confident that it will meet universal approbation.

Roads upon which the above invention is used.

New York and Harlem,	New York and Erie,
Hudson River,	Boston and Providence,
Hartford and N. Haven,	Pennsylvania Central,
New Jersey,	New Jersey Central,
Reading, and a very large number of others.	

EDWIN R. BENNET,

Office 48 and 50 Duane st., New York.

To Contractors.

PROPOSALS will be received, at this office, until the 3d day of next month, for the graduation of fifteen sections of the Orange and Alexandria Railroad, lying between the 30th and 60th miles from Alexandria.

Also, for the masonry of six important bridges, one of them across the Rappahannock river; and a large number of square culverts.

Bidders unknown to the undersigned must produce testimonials of character. The successful bidders will be required to devote their personal attention to the work, and to complete their jobs within the current year. Plans of the masonry and qualities of material to be seen at this office. By order of the president and directors.

T. C. ATKINSON, Chief Engineer.

Engineer's office, Orange and Alexandria railroad, Alexandria, Va.

Jan. 1, 1851.

Railway Iron.

THE Subscribers will contract to deliver, in the course of the ensuing Spring and Summer, the best English Rails, made by a particular specification, and of any pattern required.

DAVIS, BROOKS & CO.,
68 Broad st.

On hand for sale, English rails of 58 lbs. to the yard, made by particular specifications.
January 10, 1851. 2m

A New Spark Arrester.

We have recently examined a model of a newly invented Spark Arrester, for Locomotive Engines. It appears to us as not only superior to anything in use, but as accomplishing most effectually its object, and that too by a contrivance of a most simple character. The sparks are arrested by a principle or law, just as natural in its operation, as that which now carries them with so much force to the top of the chimney.

Externally the chimney presents the same appearance as the one in common use, with the exception of a conical top. By an enlargement of the smoke pipe, and by a very simple arrangement at this enlargement, the sparks are taken out of the draught, and fall by their own gravity into a chamber provided for them.

It is somewhat difficult to describe the invention without a cut. But we are satisfied that no person can examine it without being fully convinced of its perfect fitness to secure the object in view.

The superiority of this contrivance to all others of a similar kind, are—

First. It is a perfect *spark catcher*.

Secondly. It leaves the draught of the smoke pipe entirely free, without opposing to it any obstruction whatever.

Thirdly. It dispenses altogether with all perforated iron, or net work, which are now used to arrest the sparks by mechanical force.

If this contrivance is what we have stated it to be, and we feel convinced that we have not exaggerated its qualities, the travelling public will certainly feel it to be one of the greatest desiderata to the comforts of railroad travelling. Sparks are the great annoyance to travellers. The moment a window or door is opened, a person is covered with a shower of these little missiles, some of them burning coals, which insinuate themselves into his eyes, nose, mouth and ears, and into every crevice or opening in his clothing, soiling everything a person wears. By closing the car, to shut them out, a person suffers almost as great an inconvenience, as from the tainted atmosphere of a crowded room.

In addition to annoyance to travellers, the fires that are very frequently caused by lighted sparks, are sources of constant loss and expense to railroad companies. All will therefore appreciate the importance of an invention which shall remedy all these evils.

That our readers may see that we have not overstated this matter, we give the following certificates from persons who have thoroughly tested the invention, and who are well known to the railroad public.

Tonwanda Railroad, Rochester, }
April 26, 1850. }

Mr. Hunter—

We have given your Spark Arrester a thorough trial, and find it goes beyond our utmost expectations for draught—and throws no fire. I have no hesitation in saying it is decidedly the best and only pipe that ought to be used on any railroad. You may cover the car with powder, next to the tender, and I will ride on it with 8 or 10 cars behind the engine, without any fear. I think all the compa-

nies on this line will find it for their interest to put them on immediately. With respect, yours,

WM. HAYDEN.

Corning, Steuben Co., N. Y.

To whom it may concern—

This is to show that I am now using one of Radley & Hunter's Spark Arresters, and think it is by far the best spark in use. At any rate, I have used a number of different kinds, and can say with safety, it is the best one I ever tried; for it not only catches all the sparks and dust, but makes an engine steam nearly or quite as free as the open pipe—besides this, it is the most durable pipe ever offered to the public: therefore, as an engineer, I feel it my duty to recommend it.

BENJ. A. WIGHTMAN,

Engineer of Engine No. 253,

Boston Locomotive Works.

Running on N. Y. & E. R. R.

Sup't Office N. Y. & Harlem R. R. }

New York, Feb. 23, 1850. }

Mr. E. R. Bennet, New York—

Dear Sir: We have had one of Messrs. Radley & Hunter's Patent Spark Arresters in use for the past two months, during which time we have tried it on three different engines, both freight and passenger, and have no hesitation in saying it has proved to be the best we have ever used, both for making steam and arresting sparks.

I consider it more durable than any other now in use, for the reason of the wire cloth and perforated iron being dispensed with in its construction.

M. SLOAT, Supt.

This is to certify that the Hartford and N. Haven railroad company have had in use one of Radley & Hunter's Patent Spark Arresters during the last three weeks, and it has proved itself to be admirably adapted to the purpose.

As a Spark Arrester, it is perfect even to the finest dust; and its draught is almost, if not quite, equal to an open pipe.

It has been used on an engine running one of the express trains, and has made steam more freely than any pipe ever used on the same engine.

I am familiar with most of the different kinds of Spark Arresters got up for locomotive engines during the last 14 years, and do not hesitate to pronounce Radley and Hunter's the best I have ever seen.

E. M. REED.

Master of Machinery, Hart. & N. H. R. R.

Hartford, March 27th, 1850.

Harrisburg, Sept. 9, 1850.

I have put one of Radley & Hunter's Spark Arresters on one of our Passenger Engines, and found it to be superior to anything I have seen, and do not hesitate in recommending it to all railroad companies.

LEA PUSEY,

Master Machinist, Harrisburg Shop,
Pennsylvania Railroad.

The manufacturer of this article is E. R. Bennet, 48 and 50 Duane street, New York. He also refers to the following persons, who have had the opportunity of witnessing its operation upon the roads with which they are connected.

Chas. Minot, Sup't Erie R.R.

John Brandt, Master of Motive Power Erie R.R.

Wm. Raymond Lee, Sup't Bost. and Prov. R.R.

Geo. S. Griggs, Sup't Motive Power, Boston and Providence R.R.

M. W. Baldwin, Philadelphia.

Matthew Baird,

Sam'l Moore, Sup't Machinery, N. Jersey R.R.

A very extensive demand has already arisen for the above invention, which require the utmost exertions of the maker to supply. It is now being rapidly introduced upon a large number of roads.

Baltimore and Ohio Railroad.

The great Tunnel on the Baltimore and Ohio Railroad, in Preston county, Virginia, is progressing rapidly. The contractors, (Messrs. Lemmon, Gorman, Clarke & Co.) work over three hundred hands, and have penetrated two thousand and four hundred feet, which is more than half the

length of the tunnel when completed. In describing the mode and effect of the operations at that point, the Cumberland Civilian says:

Operations are carried on at five different points, and the whole work is expected to be completed by the first of June next. The stupendous undertaking has caused the village of Greigville to spring up in its vicinity, which already boasts of 80 houses, 2 churches, 2 schools, 7 stores, and a post-office. The miscellaneous population of the place is kept in order by a permanent guard of twelve men, employed by the contractors, and well armed and equipped.

Ohio Cleveland and Pittsburgh Railroad.

The directors of this company have submitted to the stockholders the annual report of their doings for the past year. The report presents the affairs of the company in a very favorable light. In the course of the present month the laying of the track will probably be completed from Cleveland to Ravenna. This will open a considerable portion of the road for operation, and the company will begin to reap the fruits of their enterprise. The grading and masonry on the remaining portion of the line and the provisions for the superstructure are so far advanced that the laying of the track can be commenced as soon as it can be undertaken at the opening of the spring.

The necessary iron for the road, has been purchased and paid for, at a cost not exceeding \$40 per ton, delivered at Cleveland.

"Spacious depot grounds" [to copy from the report,] "have been procured both on the lake shore and on the table lands in Cleveland, and at all points where needed on the line, at a cost to the company unusually low.

"The requisite building for passenger and freight stations, wood and water accommodations, car houses, repair shops, &c., have been prepared or are in progress, at Cleveland, Bedford, Hudson and Ravenna, so far as present exigencies demand. Others will be added as they shall be needed.

"Six locomotives have been procured, two of which, of 22 tons weight, are from the Taunton manufacturing company, and are of a character which will sustain the high reputation of that company's constructions as unexcelled by any other; two, also of the first class and of the same weight, will be delivered in the spring, by the Cuyahoga Steam Engine Company; and the remaining two of less power were purchased at second hand, and have been used in the distribution of iron and other materials of construction.

"Three first class coaches have been received at Cleveland from the well known manufactory of Eaton, Gilbert & Co., of Troy, which in convenience of arrangement, material and style are equal to the latest and best eastern manufacture.

"The board have taken the requisite preliminary steps, on their part, for extending the road to Beaver, to connect with the Ohio and Pennsylvania road at that point. It is expected that the additional cash funds needed to construct this extension will be furnished along the line of the extension and at Pittsburgh.

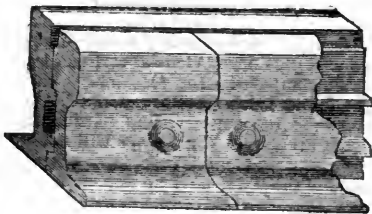
"The Ohio and Pennsylvania railroad is now in an advanced stage of progress. It is anticipated that early in the fall both roads will be in readiness to reciprocate exchanges of business at Alliance. By this connection, the wheat products from that portion of the State will find a more ready access to our line for market at Cleveland, while at the same time, a railroad communication will be opened to Pittsburgh."

The finances of the company are represented as in a very favorable condition, and no doubt is expressed but that the road will be completed without any embarrassment in its financial concerns. The affairs of the company, have, from the outset, been managed with great ability and this has contributed most essentially to success, by securing the entire confidence of the public.

In addition to the connection which is proposed to be formed with the Pennsylvania and Ohio railroad, and with several projected branch roads, the company also propose to connect with the Steubenville and Indiana railroad, for the purpose of opening a communication with the roads of Central and Lower Ohio.

We have frequently spoken of the above as one of the most important roads of Ohio, in connecting Lake Erie, with the Ohio river, by the shortest possible route, and by a line of less than 100 miles. It will also open to the Lakes a direct outlet for the coal fields of the eastern portion of the State, a matter of vast importance to the commerce of our great inland seas, and particularly so to the city of Cleveland. By this road, coal can be delivered at the lake, at the low price of two dollars per ton. The transportation of this article alone would give a large business to this road. In addition to this, it traverses one of the finest agricultural portions of Ohio, and we have no doubt that its business will equal the most sanguine expectations of its friends.

We can bear testimony to the able manner with which the concerns of this company have been managed, and when this work is completed, we have no hesitation in saying that the stockholders will find themselves in possession of a first class road, constructed at a low cost, and one that will prove to them a very profitable investment for their money.



Continuous Rail for Railroads.

We give above, a cut, which will convey a pretty good idea of a newly invented rail, by which it is proposed to obviate the defects of the rail in common use. We will not here attempt to point out the evil resulting from the fact, that our lines of rail are now made up of distinct and isolated parts, from 15 to 20 feet long, as every person familiar with the operations of a railroad, will better appreciate them from his own observation than from any description of ours. The rail in use is bad in principle, and of course must be bad in its results. It is not only the cause of an enormous wear and tear both to the road and machinery, and of a great majority of accidents which occur, but the source of the greatest annoyance to travellers.

It will be seen that the above invention is applicable to any pattern now in use. We will, therefore, only refer to its advantages as furnishing a continuous line of rail.

The present form of rail has always been considered as very objectionable, and as a matter of course, invention has been constantly at work to provide a substitute—though thus far without much success. Various kinds of compound rails, composed partly of cast and partly of rolled iron, have been tried. The ends of rails have also been confined together by a small plate of iron riveted to each. But this contrivance has been found to last but a short time. The enormous pressure of the engines acting with a leverage of the whole length of the rail would very soon work the rivets loose

and render them useless. In practice, the use of the rail in its present isolated and unconnected form, has been found more convenient and economical than any other form yet tried, and its use has consequently been continued.

To meet the objection which all must admit, a rail has been constructed upon an entirely new principle, the form of which we give in the cut. We now present it to the consideration of the railroad public. It secures the great desideratum of a continuous line. So far it is a vast improvement upon the short rail, and should take the place of the other altogether, unless it possesses other defects which overbalance this superiority.

As far as cheapness of construction is concerned, it can be manufactured for about the same price as the solid rail. From a more economical distribution of the material, we believe that it is as strong a pattern as a solid rail of the same weight. The two pieces of which it is composed can be rivetted together at a very slight expense. The great objection that will arise in the minds of those examining it will be, the fear that the rivets will become loose, allowing the two parts of the rail to "work." Now this is a matter which can only be determined by experience in its use. Opinion is not worth much here, because there are no parallel cases to reason from. Experience, as far as any test could be made, has shown that this objection is entirely unfounded.

The first experiment made with this form of rail was upon the New York and Erie Railroad, where about 300 feet was laid, in September, 1849, near the company's depot at Piermont. Over this the whole down traffic of the road has passed since that time. This rail is as sound in every part as when first laid down. It exhibits not the slightest appearance of any starting or working in the rivets, or any change in the relative position of the two parts of the rail. As far as the general appearance of the rail is concerned, it has shown very much less wear than the old-fashioned one adjoining. The former appears to have suffered only in a very slight degree from the action of the trains, while the latter shows the same evidence which we witness on all roads, of the destructive effects of the wheels upon an isolated and unconfined bar of iron, in battering down its sides and ends, and in pounding up that portion of it held by the chains, and in the abrasion which so rapidly wears off its top. It will be borne in mind, too, that the engines of the Erie Railroad are of the heaviest class. This experiment, under the most trying circumstances, has thus far proved entirely successful.

The next experiment was tried upon the Utica and Schenectady Railroad, where about one quarter of a mile was laid with the above rail, in October, 1849. This, up to the present time, has remained in a perfect condition, under the great amount of traffic on that road. It has given such perfect satisfaction, that the company have recently laid ten miles more with this pattern. These are the only instances where this rail has been used. The last named company believed the fact of its success so well established, that upon the strength of the experiment made under their own observation, they considered themselves justified in permanently adopting it. All evidence that exists in the matter is in its favor, and it would be difficult to find among our roads a company whose opinion is entitled to more consideration than the one that has adopted its use.

So much in reference to the life and cost of the

rail. If it is equally economical with the form in use, as far as cost or durability is concerned, its superiority in all other respects must effect a change in the economy of making railroads, the extent of which we can hardly estimate. With the present rail, the cars are constantly passing over an unequal surface. It is impossible so to confine the ends of the rail, as to preserve them in the same plane. This rail requires a very large increased amount of motive power, and the increased friction is constantly acting upon the machinery and strength of material. The loss due to this cause can only be ascertained by the use of the new rail. Almost the entire cost of adjustment of tract, an item of no small importance, will be saved. But the question of economy we do not propose to discuss at the present time. Our object has been to place this invention before the public, with all the testimony which exists in its favor, for the purpose of calling attention to it, and to promote further enquiry and investigation.

Georgia.

Report of the President and Directors of the Augusta and Waynesborough Rail Road.—We are indebted to the President of this road, Alex. R. Lawton, Esq., for his annual report. It is explicit, to the point, and altogether satisfactory. The actual surveys indicate clearly, that the best point of departure from the central road has been adopted viz.: the 79 mile station. It is demonstrated, we think, by Mr. Holcomb, the engineer, that the route selected is the shortest, the cheapest, and the most practicable, that could possibly be found. The officers of the company have therefore acted with becoming impartiality and good faith in fixing upon it. The road will be in operation to Waynesborough by the 1st of July next. From this point, a connection with Augusta will at once be established by post coaches, and soon thereafter from Graves' Store, seventeen miles this side of Augusta, at which point the resources of the company now in hand will be exhausted.

The President does not propose to make any compromise with the actual condition of affairs so as to insure an inferior road, but recommends its prosecution on its present scale of excellence. We regret to find that a few of the citizens of Burke county have thrown great obstacles in the way of the company, which will involve them in litigation for the right of way.

The total number of shares subscribed is 4,272. It was predicted that citizens of Burke would take 1,000 or 1,200 shares, but as usual, it is has been left to Savannah to shoulder almost the entire responsibility. The City and citizens of Savannah have taken 3,931 of these shares, those of Burke county only 283, and those of Augusta only 58. The City of Augusta and the Georgia Rail Road have both declined lending a helping hand to this great enterprise. The Georgia Rail Road, it is true, has offered a subscription, but it is coupled with crippling restrictions and conditions to last some twenty years or so. We hope it will be at least twenty years before the company will comply with any such proposals.

The whole located line of railroad will be between 52 and 53 miles; the distance from the 79 mile station on the Central Road to Waynesboro' being 20½ miles. The road, when finished, will be as good a one as ever was built in the United States. The amount received and disbursed up to the 31st of December last was, according to the report of Jos. Bancroft, Secretary, \$175,583 66.

Mr. Holcomb, the chief engineer, makes the following estimates for the first twelve sections, beginning at the Central Road, thirty-three and a half miles in length: Grading \$273,033 19; Depots at the 79 Mile Station, Central Rail Road, \$10,000; Way Stations, \$5,000; Superstructure, \$212,290; Engineering and Contingencies, \$27,500: making the total estimates from the Central Road to the end of section twelve, 33½ miles, to be \$527,873 19. This makes the average estimated cost per mile for that portion, \$15,757 42. From the end of the twelfth section to Augusta, about nineteen miles, the estimated cost for every thing is put at \$272,968 32. The average per mile on this part of the road is \$13,998 37. The total cost of the whole road is estimated at \$800,841 51, and the average cost per mile at \$15,254 10.—*Sav. Republican.*

Railroads in Progress and Projected.

Railroad from the Coal Region to Philadelphia.—The Pottsville Miner's Journal states that an application is about being made to the legislature of Pennsylvania, for a charter of a new railroad from that place to the city of Philadelphia. This new road, it is estimated, can be built and equipped for about \$7,000,000, which amount, compared to the cost of the Reading, will enable them to realize good dividends to the stockholders. This new road, it is said, will be able to bring coal to Philadelphia at \$1 per ton. The project at present is to locate the road on the opposite side of the Schuylkill, connecting it with the Norristown railroad. A grant of two millions of acres of the public lands will be applied for in aid of the projected improvement. New avenues of communications are promotive of trade, and consumers receive the benefit of an increased competition.

Baltimore and Ohio Railroad—Sale of State Bonds.—We rejoice exceedingly, says the Baltimore Patriot, to have it in our power to announce that arrangements have been made which place the Baltimore and Ohio railroad beyond contingency, as to the means necessary to its vigorous prosecution.

At a meeting of the board to-day the whole amount of her sterling bonds was sold to Messrs. Brown, Brothers & Co.

The company, in deciding upon the proper course to be pursued in relation to a sale of the sterling bonds, have looked to *certainly* in the prosecution of their great work. There are now upwards of four thousand laborers and one thousand horses employed upon the extended line, and the board could not have felt justified in delaying, for a single moment, the maturity of their financial plans. We congratulate the public, and the friends of this great enterprise, that the Rubicon is now passed, and that the road will be pressed with the utmost vigor, to its final completion.

The Newark and Mansfield Railroad.—It will be seen by the following from the Newark Gazette, that the people of that goodly town, now have the benefit of railroad facilities entirely through to the Lake. We sincerely congratulate them on the completion of their road. We do not wonder at the "noise and confusion" upon the arrival of the first train.

Through at Last!—The railroad is done! The cars have come through and no mistake! The last link in the road was laid on Monday, about two o'clock, P. M. The Sandusky cars, led off by the new and powerful locomotive "Newark" and commanded by that best of conductors, Mr. Patterson, reached our expectant city on Monday evening, about 6½ o'clock. When the shrill whistle of the "Newark"—so different from that of the

"Richland" which alone we have heretofore heard—broke the silence of the evening, a shout of triumph and rejoicing went up which echoed and re-echoed from the South Fork to Log Pond Run, and, and from Pataskala to Raccoon—crowds rushed out to greet the new arrival and rejoice over the final success of human skill and perseverance, and the power of iron rails and steam. It is, indeed, an event of no small importance to our rapidly growing city, and in view of it, reflections upon our past and our future crowd upon the mind.

We hope by next week that the officers of the company will furnish the public with items pertaining to the history of the road which will prove highly interesting to the reader.

Virginia.

North-Western Railroad.—We learn from the Parkersburgh (Va.) Gazette, that a bill has been introduced, into the Virginia Legislature, to incorporate a company with power to construct a railroad from Parkersburg, to the line of the Baltimore railroad at or near the mouth of Three Fork in the county of Taylor.

Indianapolis and Bellefontaine Railroad.—The Indiana State Journal says that the executive committee at their recent session, directed the engineer to prepare the estimates for letting the grading and bridging the west line of Randolph county, to which the contracts now extend, to the Ohio State line at Union. The company expect to have the cars at Muncie, the coming autumn, and at the State line by the fall of 1852, by which time it is believed that the line from Pittsburgh, Cleveland, and Sandusky, from the northeast, and from Columbus, through Urbana and Piqua, from the east, will be completed to our State line, uniting the New York, Philadelphia, and Baltimore lines at that point.

Indiana.

We learn from the recent message of the Governor of this State that the ordinary expenses of the State government, for the fiscal year ending the 31st day of Oct. 1850, were \$83,615 10. The expenditures for the ensuing year, (exclusive the expenses of the convention,) are estimated by the auditor of the State at \$80,000. The whole amount of revenue paid into the State treasury during the past year was, on all accounts, \$450,491 65, which exceeds the amount of the previous year \$18,197 98. The total value of taxable property, as returned for 1850, is \$137,443,565, which is an increase over the previous year of \$4,014,404. The number of polls returned for 1850 is 149,986, being an increase over last year of 6,266.

The subject of an improvement in the revenue system of the State is urged by the Governor in connection with the auditor of State. He recommends the adoption of a system to assess at its cash value every species of real and personal estate.

The entire population of the State at the present time is about 988,000, being an increase since 1840 of upwards of 300,000. The total valuation of real estate and live stock, exclusive of other personal property, is about \$200,000,000—being \$63,000,000 over the entire assessment for taxation. If to this be added other descriptions of personal property, the entire State valuation cannot be less than \$350,000,000. The Governor estimates that by the year 1852 the State will be able to appropriate the sum of \$100,000 to the payment of the principal of the public debt. It is believed entirely practicable to liquidate the entire debt in seventeen years from the first payment. Works of public improvement are progressing rapidly, there are 400 miles of plank road, costing from \$12 to \$25,000 per mile,

and 1,200 miles additional are surveyed and in progress. There are 212 miles of railroad in successful operation, of which 120 were completed the past year; and more than 1,000 miles of railroad are surveyed and in a state of progress.

Massachusetts.

Manchester and Lawrence Railroad.—An adjourned meeting of the stockholders of this road was holden in this city, yesterday. The committee appointed at the last meeting to report upon the condition of the road, presented a long report. The debt of the road is stated at about \$50,000, to meet which the committee recommend the creation of new stock.

The report censures severely the management of the road, for a want of diligence, foresight, and economy, and states that the accounts have been carelessly kept, and in many cases of expenditure the proper vouchers are not to be found. A large sum was paid for preliminary expenses before the charter of the road was granted, most of which went into the pockets of the directors.

The report of the committee presented the affairs of the road as in a prosperous condition, much more so than the committee anticipated on commencing their investigations.—*Manchester Mirror.*

Stony Brook Railroad.—At a meeting of the stockholders of the Stony Brook railroad, holden yesterday at the Merrimack House, in Lowell, the following named gentlemen were chosen directors; Tappan Wentworth, John Clark, Wm. A. Burk, John Wright, Sewell G. Mack, John W. P. Abbott, Zifa Gay.

At a meeting of the directors, Tappan Wentworth was chosen President, George H. Carleton was chosen Treasurer, and Charles Hovey was chosen Clerk, in place of Isaac S. Morse, who declined a re-election.—*Lowell Courier, 7th.*

Georgia.

Central Railroad—Its Influence.—The abstract of the earnings of the Central railroad for December, 1850 compared with December, 1849, which will be found below, discloses some facts of general interest to the country, and particularly to the people of this city. The reader will not fail to observe a remarkable increase in the item of way-business of the road, both up and down, in freight and passage. This fact is interesting, inasmuch as it shows that there has been an increase in the business of our merchants with the people along the road, and that railroads actually *create* business which otherwise would not have existed. Among important facts in this connection, is, that an increase of way travel is an evidence not only of an increase of intercourse between Savannah and the interior, but of the prosperity of the country.

In other words, the local travel up and down the road has increased—the way-freight has increased—the business of the people in this city and Macon, and along the road, has been extended—and the intercourse between them is steadily improving. The corollary from all this, is that railroads exert a prodigious influence in the development of the country and upon the prosperity of the people. They add to the value of land through all the region which they penetrate, inspire the people with a spirit of enterprise and improvement, increase their intelligence and intercourse, and create business and wealth where there was none or but little before.

If the Central road produces such results in the section of country between this place and Macon, and at this point, what will be "the tale to be told" when the Waynesboro' road is completed to Augusta; when the Milledgeville and Eatonton branch is opened—when the connection is formed at Macon—when the south western road is completed to the Chattahoochee—when the branch to Columbus is finished—when the connection is made at Chattanooga and Dalton with the Tennessee improvements—and when the teeming valley of the Mississippi and the far west are penetrated? All these improvements are but arms reaching out in every direction, gathering up the products and wealth of the land and pouring them along the lines of our railways into the lap of this ancient city. They give and receive wherever they go, conferring their benefits not merely upon this place or that, but up-

on every interest throughout the country within the range of their influence.

It gives us pleasure to state in this connection, that the citizens of Savannah have subscribed upwards of \$10,000 to the Milledgeville & Eatonton railroad. This road, which connects with the Gordon & Milledgeville road at the latter place, penetrates the heart of the State, and cannot fail to have a beneficial effect upon the business of the Central road and of this city.

Abstract of Earnings of the Central railroad for December, 1850, compared with Dec. 1849.

	1849.	1850.
Up thro' freight..	11,571 15	17,659 27 6,088 12 inc.
" way "...	3,967 97	6,888 66 2,920 69 "
Down thro' "...	35,467 07	32,096 83 3,370 24 dec.
" way "...	11,466 92	14,734 46 3,268 24 inc.
Up thro' passage.	2,233 62	2,870 64 637 02 "
Down "...	1,360 48	2,094 59 734 11 "
Up way "...	1,736 85	3,095 83 1,358 98 "
Down "...	1,650 50	2,691 70 1,041 20 "
Mails,	1,600 00	1,600 00

\$71,053 86 \$83,731 98 12,678 12 inc.

—Savannah Republican.

Baltimore and Ohio Railroad.

The following statement shows the amount of transportation eastwardly into the city of Baltimore, of the principal staples, for the month of December, 1850. The increase in the revenue is \$8,621 18 over the corresponding month of the preceding year. We copy from the Patriot:

Bark.....	12 tons	Lime.....	1½ tons
Coal.....	10,229 "	Live stock, viz.:	
Fire brick....	23 "	26,860 hogs	2,686 "
Firewood....	143 "	180 sheep..	12 "
Flour.....	48,546 bbls	158 horses &	
Grain.....	94 tons	mules.....	61 "
Granite.....	260 "	493 hhd cattle	233 "
Iron.....	797 "	Meal & shorts	181 "
Iron ore and		Pork & bacon	123 "
manganese	136 "	Tobacco....	100 hhd
Lard & butter	130 "	Whiskey....	695 bbls
Leather.....	147 "	Miscellaneous	395 tons

The revenue for the month has been as follows:

	For Passengers.	For Freight.
Main stem.....	\$26,203 09	\$98 387 51
Washington branch..	19,760 27	6,589 93

\$45,963 36 \$104,977 44

Making an aggregate of \$124,590 60 on the Main stem, and \$26,350 20 on the Washington branch—the total being \$150,940 80.

The above, compared with the corresponding month of last year, shows an increase of \$8,621 18, being \$6,350 48 on the Main stem, and \$2,270 70 on the Washington branch.

Important Reduction.—We learn that the directors have reduced the price for the transportation of coal 25 cents per ton on the railroad from Cumberland to Baltimore, to take effect in June next.

Canada.

Ontario, Simcoe, and Huron Railroad.—The contractors for this road, Mr. Storey, Mr. DeWitt, and the chief engineer, Mr. H. C. Seymour, arrived here early yesterday morning, having been detained a week on the road by the snow. They had an interview with the directors, and William Armson, Esq., (Warden of the county of Simcoe,) Thomas McConkey, Esq., George Lout Esq., and J. Laur, Esq. These gentlemen, representing the council of Simcoe, were bearers of the official document, under the county seal, confirming the grant of £50,000 to the railroad. The interview which lasted several hours, was most satisfactory to all parties, and resulted in a confirmation of the proposals made and accepted, and in entering into a contract for the undertaking and completion of this important work. The parties propose to set out northward this morning on a tour of inspection, preparatory to a general survey of the line being made, which will be undertaken and reported upon as early as the weather will permit. We are, therefore likely to have the work in operation very shortly, and we congratulate our fellow citizens on the prospect which now presents itself, of realizing the hopes of the supporters of this important measure, to whom too much praise cannot be awarded

for their exertions to bring it to a final issue.—Colonist.

Maryland.

Baltimore and Ohio Railroad.—Sales of State Bonds.—We rejoice exceedingly to have it in our power to announce that arrangements have been made which place the Baltimore and Ohio railroad beyond contingency, as to the means necessary to its vigorous prosecution.

At a meeting of the board to day the whole amount of her sterling bonds was sold to Messrs. Brown, Brothers and Co.

The company in deciding upon the proper course to be pursued in relation to a sale of the sterling bonds, have looked to *certainly* in the prosecution of their great work. There are now upwards of four thousand laborers and one thousand horses employed upon the extended line and the board could not have felt justified in delaying for a single moment, the maturity of their financial plans. We congratulate the public, and the friends of this great enterprise, that the Rubicon is now passed, and that the road will be pressed with the utmost vigor, to its final completion.

Finances of New York.

We give from the comptrollers report the following statement of the amount of the general and canal debt of the State, of the receipts into, and payments from the treasury during the past year

STATE OF THE TREASURY.

Balance in the treasury on the 30th September, 1849. \$471,725 57
Amount received into the treasury on account of all the funds, (except the Canal fund,) during the year ending on the 30th of September, 1850, [see Statement A.]..... 2,535,354 30

\$3,007,079 87

Amount of warrants drawn on the treasury, on account of all the funds, [except the canal fund,] during the year ending on the 30th September, 1850, [see Statement B.]..... 2,498,275 90
Amount of warrants drawn on the treasury, remaining unpaid on the 30th September, 1849..... 148 73

2,498,424 73

Less, amount of warrants drawn on the treasury, remaining unpaid on the 30th Sept. 1850..... 277 01
2,498,147 62

Balance in the treasury on the 30th September, 1850..... \$508,932 25

THE CANAL FUND.

It will be seen that the canals of this State continue to justify the anticipations so frequently expressed by the advocates of a liberal system of public improvements. The gross revenue of the canals during the last fiscal year, including interest on the deposits and rents of surplus water, was \$3,486,172 30, being an increase over the receipts of the preceding year of \$43,275 68.

The amount received for canal tolls during the last season of navigation, as far as yet ascertained, was \$3,276,903, being an increase of \$8,677 upon the tolls of 1849.

It is proper to state that the receipts for the fiscal year ending September 30, 1850, fall below the estimate of the commissioners of the canal fund at the commencement of the year \$55,826 70.

After deducting from the gross revenues of the last fiscal year the sum of \$644,762, for the expenses of collection, superintendence and repairs, and \$191,203 81 for new locks, &c., on the Oswego and other lateral canals, their remains a net income of \$2,650,206 49. Of this sum \$1,850,000 has been carried to the sinking funds and the general fund, in compliance with the constitutional requirements, leaving \$800,206 49 applicable to the appropria-

tions made by the last legislature for the completion of the Genesee Valley and Black River canals, and the Erie canal enlargement.

Adopting the last year as a criterion, the present value of the canals is equal to a capital of \$44,170,108, invested at six per cent. interest. The average net income, for the last five years, is \$2,518,044 87, which is equal to a capital of \$41,967,414 50 at six per cent. interest.

The entire cost of all the canals, including the expenditure on the Erie enlargement, the Genesee Valley and Black River canals, to 30th Sept. last, was \$35,115,237 75.

THE STATE DEBT AND THE SINKING FUNDS.

The entire amount of the State debt on the 30th of September, 1850, was \$22,530,802 48, exclusive of the contingent debt, [loans to railroad companies, &c.] amounting to \$933,036 16.

GENERAL FUND STATE DEBT.

The amount of the general fund state debt on the 30th of Sept. 1850, was \$6,359,693 32. The amount required to pay the annual interest on this debt is \$353,071 37.

The amount set apart from the canal revenues, as a sinking fund, to pay the interest and redeem the principal of this debt is \$350 000 per annum until the canal debt shall have been extinguished, when the general debt sinking fund will receive \$1,500,000 per annum, until the entire debt shall be discharged. The present sinking fund appropriation is insufficient by \$3,071 37 to meet the payments of annual interest; and this deficiency is provided for from the surplus in the sinking fund, which amounted to \$12,247 08, at the commencement of the present fiscal year.

Of the general fund debt, \$1,271,384 93 consists of comptroller's bonds, bearing 6 per cent. interest, which are held by the State as investments of the capital of the literature, common school and United States deposits funds.

THE CANAL DEBT.

The amount of the canal debt, chargeable upon the sinking fund, created by section 1, article 7, of the constitution, was on the 30th Sept. 1850..... \$15,928,523 67
Add, loan to provide for extraordinary repairs, chapter 370, section 2, laws of 1849..... 50,000 00
Loan for the purchase of Albany basin, chapter 200, Laws of 1846..... 192,585 49
\$16,171,109 16

The canal debt was reduced during the last fiscal year by the payment of \$436,000 of stock, which fell due on the 1st August, 1850. It was increased by the 5 per cent. Albany basin loan above referred to, \$192,585 49, [which yielded \$203,415 36, being a premium of about 5½ per cent.] making the actual reduction of the debt \$243,404 51.

From Valparaiso.

The Copiapo Railroad.—Mr. Campbell the engineer of the Copiapo road has communicated to the government his impressions, received during his late tour of observation. He reports that great obstacles are to be encountered on the Concon river route; but still that a line may probably be carried through. At least he regards the probability strong enough to warrant a more exact examination. The government has appropriated \$2000 a month to defray the expenses of a preliminary survey of the route through the above mentioned valley.

The work of this railroad progresses in a very favorable manner. The force now employed is 600 men, 15 miles are graded and ready to receive the rails, leaving but 9 miles to finish between Caldera and the Valley. This whole distance (24 miles) will be graded by February. It embraces the roughest portion of the work. The remaining distance through the valley is quite smooth, and can be completed in a few months.

The whole route of this road is now definitely established. The exact distance from Caldera to the city of Copiapo is 50½ miles (English). Of this 30 miles are straight, and 11½ curved; but the curves are very gentle, and will offer no impediment to speed. The line in this respect is un-

usually favorable. The maximum gradient is 60 feet per mile ascending towards Copiapo, this inclination occurs near Caldera. From the mines towards the coast there is no ascending gradient exceeding 25 feet per mile. The city of Copiapo is 1,200 feet above the sea.

The Britannia Bridge.

The Britannia Bridge.—The permanent public opening of the new line of tubes for the crown line from London to Dublin has taken place, the great structure being now in all important respects made complete. On the day of opening, Captain Simmons, the government inspector, went over it early in the morning, and instituted, in conjunction with the engineers, a long series of experiments. The first experiment consisted in passing two locomotive engines through the tube, and resting them at intervals in the centre of the sections.

At nine o'clock, a train of twenty-eight waggons and two locomotives, with 280 tons of coal, was drawn into all four of the tubes, the deflections being carefully noted. These deflections were ascertained to be exactly three-fourths of an inch under this load. After repetitions of these experimental ordeals, which occupied several hours, the train of 280 tons, with its two locomotives, was taken about a mile distant from the tube, and then suddenly shot through it with the greatest attainable rapidity; and the result was, that the deflection at this immense velocity of load was sensibly less than when the load was allowed to remain at rest on the tube. It is stated that the harvest gales through the Straits do not produce so much motion over the extent of either tube, as the pressure against the sides of the tubes of ten men; and that the pressure of ten men keeping time with the vibrations produces an oscillation of one inch and a quarter, the tube itself making sixty-seven double vibrations per minute.

The strongest gusts of wind that have swept up the Channel, during the late stormy weather, do not cause such a vibration of more than a quarter of an inch. The broadside of a storm causes an oscillation of less than an inch; but when the two tubes are braced together by frames, which is now being done, these motions, it is expected, will cease. The action of the sun at mid-day does not move them more than a quarter or three-eighths of an inch. The daily expansion and contraction of the tubes varies from half an inch to three inches, attaining either the maximum or minimum about three o'clock, A. M. and P. M.

Mineral Wealth in Sussex.

It was stated at the meeting at Stanhope, on Thursday, that there was not in the whole Union, not even in the gold region, a county of the mineral wealth of Sussex; and from the evidence adduced we are disposed to believe the assertion. It may be declared, we think with perfect correctness, that no district can be found combining in such a wonderful degree, all the richness of various mineral wealth and the quality of soil which renders it peculiarly fertile. The two ranges of mountains which pass through what is termed the mineral district, are rich in various metals, with mines easily worked, and with water power for the most extended enterprise. It is stated by Mr. Hewitt of the Sussex Mine Company, that he had frequently taken up a piece of ore containing seven different metals; and in Iron, Zinc and Copper, this territory is found unfailling. These great mineral resources are surrounded by an agricultural region, that can scarcely be surpassed. The valleys of the Muscotecong and the Hopatecong, are in a high state of cultivation, and capable of producing all that could be needed for a crowded population. This rich tract of country with its uncounted wealth and resources, remains undeveloped.—*Newark Mercury.*

Phosphate of Lime

It seems singular that in the property of the New Jersey exploring and mining company, about 12 miles from Dover, in this State—and it is well known possess one of the richest mines of red oxide of zinc in the world—there should also have recently been discovered the only mine it is supposed of phosphate of lime, that has anywhere been found in a mass. It occurs in a vein of rock, one side of

which is gneiss, the other serpentine. The vein of phosphate of lime is about six feet wide at the surface, broadening as it descends. It has been ascertained to extend two miles in length. A specimen has been analyzed by Dr. Antisell, of New York, who states it contain 93 percent. of pure phosphate of lime. It is, in fact, the same materials as calcined bones, dissolving entirely in muriatic acid. We have seen a specimen but not the vein itself, and presume there is no doubt of its great value. It is an admirable manure, an article so widely needed through the State. In the vicinity, it must be largely useful, and its benefits can only be limited by the obstacle to cheap and easy transportations. These are the same as now possessed by the Zinc company, namely, a cartage of three miles, to Hopatecong lake, down the lake to the Morris canal, on which it may of course be easily transported to Newark and New York.—*Newark Adv.*

Massachusetts.

Vermont and Massachusetts Railroad.—That portion of the above road from Grou's corner to Greenfield has been opened for travel. It gives us a continuous line from Boston to Greenfield, making the distance 106 miles—about 30 miles nearer than by the present route, by way of Springfield. The Greenfield Patriot says:—

"The length of the Greenfield branch is eight miles, of which three miles, including the crossing of Connecticut and Deerfield Rivers, has been constructed during the past year. The bridges over these rivers are built upon 'Pratt's Plan,' so called, and are models both in principle and workmanship. The Connecticut river is crossed 58 feet above low water mark, by three spans of one hundred and eighty feet each; the Deerfield by two spans of one hundred and fifty feet, sixty above the water and twenty feet less in height than the Cheapside Bridge on the Connecticut river railroad."

Indiana.

Wabash and Erie Canal.—We copy from the Message of the governor of Indiana the following information relative to the progress of this important work:—

"The work on the Wabash and Erie canal, under the judicious management of the trustees, has been prosecuted steadily toward completion. By the contracts which they have made, the canal will be finished to Evansville within the time fixed. Beginning the work at Coal Creek, where the State left it, they have finished and brought into use 79 miles from that place to Point Commerce. The Newbury and Maysville division, extending from Point Commerce to Maysville, 49 miles, is nearly finished.

"The entire balance of the line from Maysville to Evansville is under contract, and the work in progress to be completed by the first day of November, 1852.

"The length of the line now under work from Point Commerce to Evansville is one hundred and eleven and a half miles, upon which there has been employed, during the past season, an efficient force of near two thousand men.

"The actual cost of the completion will not materially exceed the estimates which were made in 1845, prior to the transfer.

"The cost according to contract prices, from Coal Creek to Evansville, one hundred and ninety and a half miles, (exclusive of damages for the right of way) will not vary much from \$2,012,000.

"The certain and speedy completion of this canal, the longest in the United States, through the territory of Indiana to the Ohio river—a work which has ever been regarded with such interest by our citizens, and the partial completion of which has already conferred such direct benefits upon so large a portion of those living along and near to it, and upon the whole state in the addition which it has been the means of making to its population and taxable property—it is a subject of sincere congratulation.

"And when we consider that the result has been attained by the agency of the holders of our bonds, and by means advanced by them at a time of great

embarrassment, it would seem to add to the obligation resting upon us, if anything can add to the sacredness of State faith and State honor, an additional reason for maintaining with scrupulous fidelity the arrangements with them, and throwing around them every possible security; as their only reliance for protection and indemnity rest upon it. The revenues of the finished portion of the canal show a gratifying increase in its traffic and usefulness. The tolls received for the year ending November 1, 1850, are reported at \$157,153 38; being an increase of \$22,499 35 over the tolls for the previous year. The trustees report the sale of 25,468 22.100 acres of land in the Vincennes district; and 33 986 25.100 acres in the Longansport office, during the year; exhibiting an increasing demand of canal lands for settlement, for nearly \$110,000 in cash."

Extraordinary Case--The Connecticut River and Ashuelot Railroads.

The sudden stoppage of the running of so important a railroad as the Ashuelot, just after its completion, is a most extraordinary step, and seems to call for some explanation from the parties interested. When these roads are chartered, a loud cry is always set up of the urgent need which the people have of them, and of the plentiful accommodation and advantage of all kinds which they intend to furnish to the public. Yet here is a piece of railroad (specially important to the public on account of its forming the connecting link of many long and expensive lines,) suddenly discontinued and turned over to waste, abruptly checking the vast current of travel which had begun to pour through it, and putting the traffic and travel of at least six states to the greatest inconvenience in the dead of the winter. The matter is made worse by the fact that there is really no substitute for this all important piece of railroad. Its stoppage subjects travellers between New York and the north to the alternative of a slow and tedious ride in stages for part of the distance, or of going more than a hundred miles out of their way. In every respect it is certainly a case which requires not merely explanation, but very strong reasons to justify it, being the first instance of the kind, so far as we know, which has ever occurred in this country.

The real state of the case is substantially as follows:—The Connecticut river company contracted to lease the Ashuelot railroad for ten years, from 1st of January, 1851, at 7 per cent per annum, with the privilege of ten more at 8 per cent. Upon the faith of this lease, and of this alone, the stock was taken and the road built. Several thousand dollars of the stock were subscribed in this town at the urgent solicitation of Gen. Wilson, of Keene, and others. The road was tendered, finished, according to contract, to the Connecticut river company, on the 1st of January, 1851. They declined to receive it, and stopped their engines and cars, which they had been previously running by consent. The ground of refusal was that the Ashuelot company had agreed to obtain the necessary charters from New Hampshire and Vermont, and that the Vermont charter was loaded (by the friends of a rival road, and in a scoundrelly, furtive, and fraudulent manner,) with certain unusual restrictions, which destroyed the value of the Ashuelot road to the lessees.

To all this the Ashuelot road reply with great force. 1st. That they did not [as clearly they could not] agree to obtain any particular kind of charter; secondly, that they could not prevent Legislatures, at any time, from modifying or altering the charter; and thirdly, [which is their strongest point] the Ashuelot company had bought and owned the whole right of way covered by their road in Vermont [about half a mile] before any charter was applied for, and consequently needed no legislative sanction to make and run a road over their own land, any more than an individual would over his private property. Eminent counsel have told them consequently that no charter was necessary, and common sense this time agrees with the counsel.

The key to the whole affair is perhaps this. It was thought that the building of the Ashuelot road would stop the building of a second road to Bellows Falls, one road being adequate to all the business. But it did not. Foolish men enough were found to undertake it, and the consequence is that both roads

will be worthless, or nearly so, as property, and barely pay their expenses. Hence the desire of the lessees to get out of the scrape through any feasible opening.

If they succeed in this, it would be a very severe blow to those who took the stock and bonds on the faith of the lease. It would annihilate half a million of property at a stroke. The road cost \$450,000, divided as follows: \$150,000 cash subscriptions, and \$200,000 7 per cent bonds, and \$100,000 stock taken by Boody & Co., the contractors. It is pretty well parcelled out among the farmers and needy persons, who will feel the loss severely.—Part of the bonds were put off for the iron upon a virgin company of iron masters in Pennsylvania, who will begin to think that there are some worse things than the tariff of 1846. If the lease is finally broken, neither the stock or bonds will be worth any thing.

Should the Connecticut river company be compelled to carry out the contract with the Ashuelot company, the discontinuance of the road at this time can only add to their loss, besides disappointing the just expectations of the public, and putting them to great inconvenience. The receipts of the Ashuelot road, if in operation during the present winter, would, owing to various causes, necessarily be considerably larger than for any corresponding season hereafter.—*Hartford Times.*

From Lake Superior.

The *Green Bay Advocate*, of the 24th ult., has news from Lake Superior, derived from Mr. W. H. Stevens, who came across the country to Green Bay, on his way to Washington:

"The mines are represented as doing well this year. Fifteen hundred tons of copper have been shipped, of which the Cliff Mine, the largest, shipped 800 tons. The whirlwind of speculation and fraud has now passed over, and there are no 'fancy' operations; and every company organized has got a real location, and is doing an actual business in getting out copper.

"One of the greatest expenses in getting the copper ready for shipment is in the cutting of it up into moveable masses, which is effected by a tedious process with chisel and hammer. Various have been the expedients devised to facilitate this operation; machines have been rigged in various ways, and at great expense, to saw the blocks, but the copper is so mixed with stony particles, that the saws cannot be made to work. The miners are now about trying a new plan; they are constructing a gigantic furnace to melt the masses and cast them in such pieces as can be handled. This seems feasible, and if it proves to be so the expenses of mining will be very materially lessened.

"The traces of ancient mining continue to be found, and in greater numbers and extent, and these prove of great service to the miners of the present day, by directing to the best locations, and in presenting to the miner excavations which could only be effected in years of labor. The people there estimate their age to be at least two thousand years, but nothing has been found to trace their connection with any existing race, except that the copper mined was carried off by way of St. Mary river and the lakes. This has been determined by detached portions found along the way from the mines to Ste. Marie.

"In regard to the route from Green Bay, the *Advocate* says: "A road from Green Bay to the most southerly point of Keewenaw would be less than 200 miles in length, and while it would shorten the travel over the present route at least 100 miles, would open one of the most beautiful and fertile sections in the Union—a section which will remain unknown and unoccupied until such a road is opened by the Government. The Lake Superior people need it most especially for procuring supplies, driving cattle, &c.

"The traveller finds the whole distance, to within a few miles of Lake Superior, abounding in every resource which will make a country wealthy and prosperous. Clear, beautiful lakes, are interspersed, and these have plenty of large trout and other fish. Mr. S. informs us that speckled trout, a foot in length, are found in them. Water and water powers are everywhere to be found, and the timber is of the best kind—maple

groves, beech, oak, pine, &c. He says that though the country is sufficiently undulating, he did not in the whole distance see a hill or knoll that could not be tilled or ploughed with facility. Nothing is now wanted but a few roads to open this rich country to the settler, and it will soon teem with villages, schools, mills, farming operations, and every industrial pursuit which the more southern portion of our state now exhibits."

From the Merchant's Magazine.

Internal Improvements of the State of New York.

MANAGEMENT OF THE SURPLUS REVENUES OF THE ERIE AND CHAMPLAIN CANAL FUND.

Continued from page 18.

When these canals were completed, it was estimated by the commissioners of the canal fund, that there would be an annual surplus, applicable to the payment of the debt created for their construction, of \$610,000, for ten years succeeding 1825, of which sum over \$400,000, it was supposed, would be derived in each year from auction and salt duties. One portion of the debt was payable in 1837, and another portion in 1845; and it rested with the commissioners of the canal fund to determine how the surplus revenues should be disposed of in the meantime. In constructing the canals, the large sums which were borrowed for the purpose, and the revenues derived from auction and salt duties, were deposited in the Manhattan Bank in the city of New York, and the State Bank, and the Farmers and Mechanics Bank at Albany, without interest. In fact, the money with which the canals were commenced, in 1817, was loaned by the Albany Banks before named, on condition that the \$200,000 borrowed by the state should remain in deposit in these banks until required to be paid out on contracts, and when this period arrived, the notes of these same banks were to be used in payment; and to insure a fulfilment of the last condition, the banks, in some cases, sent a clerk along the line with the commissioner, who acted as paymaster.

Anticipating an accumulation of several millions of dollars, which by the constitution and the laws, could not be used for any other object than the cancellation of the canal debt, which was payable at the end of 10 and 20 years thereafter, the welfare of the fund required that an arrangement should be made to obtain interest on the surplus as it accrued, until it could be applied to the payment of the debt for which it was pledged. The commissioners of the canal fund therefore resolved to offer the money to such banks in Albany and Troy as would pay interest therefor, and at the same time answer the drafts of the commissioners at sight for the current expenditures of the canal fund. In pursuance of this resolution, the Comptroller, (Gov. Marcy,) in June, 1826, addressed a circular to the banks in Albany and Troy, soliciting propositions for the deposits; which resulted in an agreement with the Bank of Troy and the Farmers Bank of Troy, for an interest of 5 per cent. on the first \$100,000, 3½ on the second, and 3 per cent. on all sums over \$200,000. The next year, the Mechanics and Farmers, and State banks at Albany, obtained the deposits at 3½ per cent. interest, and they have continued to the present time, as depositories for the moneys required for the current expenses of the canals.

In 1830, the accumulations in the Albany banks were so great, that the fund commissioners made arrangements with the banks on the lines of the canals which received the tolls from the collectors, to retain the amount at 4½ per cent., or pay it over at their option. This arrangement took effect in the spring of 1831, and during that season the collecting banks received \$803,000, of which amount they voluntarily paid to the Albany banks \$488,000, retaining \$315,000, at 4½ per cent.

During the same season, the sum of \$500,000 was loaned to seven banks in the city of New York, on condition of being drawn on a notice of 60 days, or paid over on a similar notice. At the close of the fiscal year in 1832, there was deposited in thirty banks \$2,500,000, and invested in stocks and bonds \$465,000, at 3½, 4½ and 5 per cent. interest. At the time a sum sufficient to pay the entire debt of the Erie and Champlain canals, was set apart, in 1836,

there had been realized for interest on investments and deposits of the canal fund surplus, the sum of \$843,176 03; and at the date of the payment of the last instalment on the debt, 1845, the interest realized on investments and deposits amounted to the sum of \$2,065,796 77. The mode of investment adopted by the fund commissioners, enabled them at all times to command the surplus moneys, when they could be advantageously used for the payment of the debt, and at the same time to add over \$2,000,000 to the fund from interest on deposits; although several hundred thousand dollars of the loans to banks were at one period unavailable, the actual loss to the fund will be limited to a few thousand dollars.

PAYMENT OF THE CANAL DEBT.

When the Erie and Champlain canals were finished, the outstanding stock which had been issued in making loans for these works, amounted to the sum of \$7,737,770 99. Of this amount \$270,000 was paid from the surplus revenues of 1826, the loan being a temporary one, and payable in that year. The general fund at that time had \$450,000 of canal stock, which in subsequent years was redeemed by the surplus canal revenues, and the money was used for the support of the state government. Although the act of 1826, in relation to the canals, authorized the fund commissioners to purchase and cancel the stock for which the surplus canal revenues were pledged, whenever, in their opinion, it could be obtained on advantageous terms, yet the ruling price in the stock market was such that none of it was bought from individuals from 1826 to 1833. The annual report of 1833 showed a balance in the hands of the commissioners applicable to the debt, of \$3,055,000, of which more than \$2,500,000 was deposited in fifty or sixty banks. The commissioners, in the annual report made to the Legislature on the 2nd of January, 1833, called the attention of the Legislature to the amount and condition of the surplus fund, and of their desire to apply these funds to the extinguishment of the debt which they were designed to pay, "but hitherto all efforts to purchase these stocks on advantageous terms have failed." After alluding to the distribution of the money among the numerous banks of the state, the report said—"The commissioners cannot, in justice to themselves, leave this topic without expressing to the Legislature their great fears of the effect upon the banks, when, in July, 1837, it shall become their duty to draw from them about \$3,500,000 to pay off the stock which will then be redeemable. Should the time be one of ease and plenty in the money market, they have no doubt that the call may be met without distress or disaster; but should a scarcity of money prevail, this heavy amount might draw too largely upon the disposable means of these institutions for the entire safety of the community."

A few days after this report was made, Mr. Wright was chosen U. S. Senator, A. C. Flagg Comptroller, and John A. Dix Secretary of State. And in the course of the same month a proposition was made to the fund commissioners for the sale of 6 per cent. stock of 1837, at a premium of 9 per cent. The board, then consisting of Lieut. Gov. Tracy, Greene C. Bronson, Simeon De Witt, and A. Keyser, in addition to the persons before named, resolved to purchase the 5 per cent. of 1837 at a premium of six per cent., and the six per cent. at a premium of 9 per cent., until the 1st of August following, when the commissioners reduced the premium 1 per cent. At this time the Comptroller sent a circular to the holders of the stock of 1837, offering to pay the premiums of 5 and 8 per cent. until January, 1834.

The following is an extract from this circular, as given in the annual report of 1834:—

"The holders of the Erie and Champlain Canal stock are reminded that the surplus moneys now in the hands of the commissioners, are, by the constitution of the state, pledged to reimburse the principal of this stock, and cannot be diverted from that object. It is therefore morally certain, that on the 1st of July, 1837, the entire sum which shall remain unpaid of the stock which is redeemable in that year, will be paid off at par; and with the means of redemption in the hands of the commissioners, it is equally certain, that as the time

approaches when they can legally redeem this stock at par, the premium which is now offered will gradually diminish until it reaches that point.

"The holders of this stock will perceive, that if they can re-invest their money at 4 per cent., it will be for their interest to sell at the premiums now offered. The surplus canal fund upon which the commissioners are drawing for the redemption of this stock, are deposited in sundry banks, and yield an interest to the State of 3½ and 4½ per cent. The commissioners readily admit what must be inferred from the high premium offered, that they are very anxious to apply the money in their hands to the redemption of the Erie and Champlain Canal stock. In making a small apparent sacrifice to effect this object, the State gets rid of the hazards incident to the management of \$3,000,000 or \$4,000,000; and by gradually possessing itself of the stock of 1837, the serious pressure upon all the monied operations of the State will be avoided, which might result from allowing the canal money to accumulate in the State banks—to be diffused by them through every department of business—and then to be drawn for on the 1st of July, 1837, to the amount of \$3,500,000, for the redemption of the stock then payable."

In eight months, from the 28th of January to the 30th of September, 1833, stock was redeemed and cancelled to the amount of \$1,478,376 87, on which there was paid a premium of \$87,933 46. This included about \$30,000 of the 5 per cent.'s of 1845, on which a premium of 18 per cent. was paid, and also \$393,347, held by the Savings Bank of New York, for which other stocks were exchanged at par.

On the 30th of September, 1835, there had been paid for stocks, \$2,773,326 67, and for premium, \$213,974, making a total of \$2,987,300 67, and yet, such was the productive power of the canal fund, that there remained a balance in the hands of the commissioners of \$3,406,809 72, exceeding the amount in hand when the purchase of the stock commenced, by the sum of \$350,000. In June, 1835, the commissioners gave notice that means were provided to pay the whole debt of 1837, and that interest on the stock would cease on the 1st of July, 1837; at the same time offering to redeem the certificates, at a premium of 5 per cent., on the 6's, and 3 per cent. on the 5's. On the 1st of October, the rates were reduced to 4 and 2 per cent. until January, 1836, adding the current interest from October to the date of purchase. In 1835, a premium of 12 per cent. was paid for the 5's of 1845, and a premium of 24 per cent. for 6's of the same year. In September, 1835, the rate was reduced to 22 per cent. on the 6's. At the close of the fiscal year in 1836, there had been cancelled of the stock in four years, the sum of \$3,418,803 13; amount paid on account of premium, \$251,233 14; total, \$3,673,036 27.

The report of 1837 says:—"If this course had not been adopted, the accumulations of the surplus deposited in the banks would have amounted, at the close of the year for which this report is made, (Sept. 30, 1836,) to seven millions and a half of dollars, besides the investments in stocks."

On the 18th of July, 1836, the whole amount necessary to extinguish the Erie and Champlain Canal debt, had been collected and invested.

Annual Interest.

It consisted of invest-		
ments in the 5 per		
cent. stocks.....	\$333,933 59	\$16,696 67
Deposits in 70 banks.	3,537,198 53	170,420 41
Total.....	\$3,931,132 17	\$187,117 08
There was then out-		
standing of the stock		
of 1837, the sum of \$1,479,911 64		\$51,738 20
And of the stocks of		
1845.....	2,282,344 85	119,407 76
Total.....	\$3,762,256 49	\$201,145 96

The amount of interest on the funds invested was not equal to that on the outstanding stock, but there was an excess in the principal set apart to pay the debt, of \$155,875 63. And as interest to the amount of \$92,788 20 was to cease on the debt of 1837 in the subsequent year, by the application of less than \$1,500,000 of the principal, the pro-

vision was considered fully adequate for the cancellation of the debt.

After July, 1836, the auction and salt duties were transferred to the general fund, as authorized by an amendment of the constitution. During a period of about 20 years, these sources of revenue had yielded to the canal fund \$5,647,497 11, being \$392,626 41 more than the whole sum paid for interest on all the money borrowed from 1817 to 1836, for the construction of the Erie and Champlain canals.

The outstanding stock in 1836, was held as follows:—

Amount held by foreigners.....	\$2,946,903 45
" held in the State of New York..	624,232 71
" held in other States of the Union	42,107 29
Total.....	3,613,243 45

Notice was given in July, 1837, that 1 per cent. premium would be paid on the 6's of 1837 until January, after which they would be paid at par. Before July, the debt payable in that year was reduced to about \$1,250,000. The banks, in the meantime, had suspended specie payments, and the commissioners paid the holders of the stock \$100 in the paper of the New York banks for each \$100 of stock. It was decided by Mr. Gallatin, Mr. Newbold, and Mr. White, to whom the commissioners submitted the question, that this rate of payment was equivalent to a payment in gold and silver.

Manufacture of Flax.

We copy from the London Chronicle the following description of the new mode for the manufacture of flax, of which we presume our readers have seen some account:

The Preparation and Manufacture of Flax.—One of the greatest obstacles which has hitherto stood in the way of an extended cultivation of flax, viz. that of the trouble, delay, and expense attendant upon its steeping, in order to prepare it for the market, has now been removed, by an invention which entirely dispenses with that process, and enables the grower at the smallest possible cost to send his fibre into the market. By this process, of which Mr. Donlan is the inventor, the results are obtained by a combination of chemical and mechanical means; and as it avoids all the expenses connected with steeping, the fibre may be prepared at a cost considerably below that incurred in the present process, and may be made, we are assured, applicable either for fabrics of the coarseness of nail bags or canvass or of the fineness of the most beautiful Brussels lace. But not only is the expense considerably less, but the time consumed in the preparation of the fibre, which, by the old process, ranges from ten days to three weeks, does not exceed as many hours by the unsteeped mode. It also possesses a vast superiority on account of the extreme simplicity of the means adopted, which may be made intelligible to and performed by a mere child. But by far the most important and valuable part of this invention is,—that it produces a fibre perfectly clean, and in its natural state, without any of the stains or impurities which necessarily attach themselves to the fibre during the process of steeping, and it also possesses the advantage of securing that regularity and uniformity of strength which to a greater or less extent is wanting in the steeped fibre.

Application has been made for a charter of incorporation for a company which will be prepared to purchase the flax produced upon 100,000 acres in Ireland, at £12 per acre, and to prepare it for the market in cases where the grower may not possess the necessary facilities for preparing it himself. The uniformity of strength and freedom from stain or impurity which exists in the flax prepared by the unsteeped process, has, within the last four days, led to the practical demonstration of an invention, of the value and importance of which, to the agriculturist and manufacturer of this country, it is impossible to form any adequate idea, and which consists, among other things, of the adaptation of the flax fibre to cotton machinery. The patentee of this invention is M. Le Chevalier P. Claussen, member of the Brazilian Institute, well known as the inventor of the circular loom, and by his collections of objects of natural

history and plants of South America in the British Museum, and in the Museum of Paris. We stated on Monday last that we had placed in our hands a quantity of flax rovings and yarns spun upon cotton machinery by the inventor. Since that period we have had an opportunity of personally inspecting at Manchester, the whole process connected with the invention, and the result has fully convinced us of its practicability. The finest portion of the yarn spun, in our opinion, and we were confirmed in it by a gentleman of great experience and long connection with the cotton trade, was equal in fineness to 120's cotton, the coarsest being equal to 60's. The application of such a test as that of 120's for the first time was certainly a most severe one. The result, however, was perfectly successful. A slight difficulty arose at first with the machinery, in consequence of the length of the fibre, this however, was easily obviated by a slight alteration in the position of one of the rollers. As the fibre, however, may be prepared to any length, there will be no necessity in future for even this alteration, the existing cotton machinery being perfectly adapted for the purpose of spinning flax prepared according to the process patented by M. Claussen. The patent granted to M. Claussen for England, is for the preparation of flax in a short staple, so as to produce a substitute for wool and cotton capable of being spun upon cotton machinery, and also for the mixture of the materials thus obtained, which can be carded together with silk, cotton, or wool, or separately, as cotton for spinning yarns. The right is also secured for preparing long fibres as a substitute for silk, for bleaching, in the preparation of materials for spinning and felting, and also in yarns and felts. The inventor does not, however, confine himself to flax for the purpose of producing a fibre adapted to his purpose, but states that he can obtain similar results from hemp, jute, Chinese grass, and, to use his own expression, from "an old tar rope, or a bamboo cane." As the patents are not yet secured for several continental States, and some portions of the United Kingdom—for our absurd patent laws require that separate patents should be granted for each of the three kingdoms which form what is termed the United Kingdom—we are not at liberty to state the nature of the process, or the means adopted for the purpose of bringing the fibre into the required state. We may state, however, that from 14 cwt. of the flax fibre prepared and cleaned upon the unsteeped process, one cwt. of a substance, identical with clean cotton, can be produced at a cost for material of less than half-a-crown. The cost of manual or mechanical labor required in its preparation, including the expenses of bleaching, an operation performed in a few seconds, does not amount to more than 7-16ths of a penny per pound. The mixture of the two substances, viz. wool with flax reduced to a short staple, forms a fabric exceedingly durable, while its cost may be judged by the fact that while wool costs 4s. 6d. the flax prepared and ready for spinning may be obtained for sixpence per pound, so that with flax and wool spun together in equal quantities, the cost would be reduced by nearly one half. Of the actual value of the invention, and of its practicability, the most convincing proof is to be found in the fact that a native of Holland, who has for several years directed his time and attention to the subject, and who has also succeeded in producing a fibre of the same quality and nature as M. Claussen, has been offered by the Dutch government the sum of £20,000 for his invention, which has been refused, the sum demanded being £50,000. The negotiations are still pending, and the 17th instant is fixed upon as the day upon which a final answer is to be given by the Dutch government. We believe that on Wednesday a formal application was made by M. Claussen to the board of trade, requesting that machinery might be placed at his disposal, in order to enable him to produce at least one ton of yarn, and to make a series of experiments, as to the best mode of adapting the fibre to the machinery; the experiments to be conducted in the presence of some impartial and well qualified person, to be selected by the government, and we have reason to believe that the application has been favorably received, although no answer has yet been given on the subject.

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HENRY V. POOR, Editor.

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ASSISTANT EDITORS,

J. T. HODGE, *For Mining and Metallurgy.*
GEN. CHAS. T. JAMES, *For Manufactures and the Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & CO., 136 NASSAU ST.

Saturday, January 25, 1851.

European and North American Railway.

We copy from the published proceedings of the Railway Convention at Portland, the Speech of JOHN HAMILTON GRAY, Esq., of St. John, N. B., a newly elected member of the Provincial Parliament. The speech, so full of noble sentiments, so rich in imagery, and illustration, so full of classic beauty, while abounding with sound and manly argument, cannot fail to repay a careful perusal. The report says:

"Mr. Gray spoke in substance as follows—
Your Excellency and Gentlemen of the Convention, I cannot enter upon the few remarks I have to make, without adding my acknowledgements to those of the gentlemen, who have preceded me, for

the courtesy and attention we have received since coming to this city. I would add, however, that while they have admitted the stupendous character of this work, they have failed to notice the peculiar aptitude of your countrymen to originate it. If they would but look back at the career of the United States, during the last few years, they will find that it is not simply in undertakings of a commercial character, having pecuniary results for their object, that the people of the States have been prompt and zealous—but that they have been, and are equally ready at the calls of science, or suffering humanity.

When I find that the officers of the American Navy, animated by a desire of acquiring knowledge, and of adding to their country's fame—can brave the deserts of Syria, triumph over the waters of the Dead Sea, and plant their country's flag, where swims no breathing thing—or face with equal hardihood, the terrors of the Arctic Sea, in search of Sir John Franklin—when I find the people of these States coming forward, as it were with one spontaneous burst of feeling, and throwing from the rich abundance of their wealth, food and comfort into the lap—of afflicted Ireland, I say—they may go forth I care not where, amid what nations, empires, colonies or kingdoms you please, and claim their proud position, "haud nulli secundus." [Cheers.]

You originate this scheme. Who are they who come forward to aid you in this work?

Look at that map—where the bold coasts of Labrador and Nova Scotia roll back the waves of the Atlantic—follow the sun as he rises above the eastern cliffs on his westward course, till he sets beneath the far waters of Huron and Superior—pause with that sun at his noonday height over still Ontario, and follow his rays till they are lost in the measureless distance of the north. Look down upon a country rich with every natural advantage, watered by a thousand streams, pregnant with every element of greatness—climate, minerals, forests, soil—equalling in size the continent of Europe; peopled by the Anglo Saxon race, nervous, energetic, determined to advance—and tell me what tongue shall dare to limit its destinies, or deny it "place" amid the nations of the earth?

The people of this country come forward to aid you in the work. In this noble enterprise, we may ask to become the brothers of a race, which sprung from the same Ancestral Home, has rivaled its parent's power, and become that parent's pride. [Tremendous cheering.]

Sir—There was a beautiful idea expressed by the Reverend gentleman who opened this Convention. He said, that the elements of power which were now making so subservient to our use, had always existed—but that Providence gradually unfolded them to our view, as in its wisdom it saw we were adapting them to good purposes. And sure it is, these elements of power have always existed. The lightnings played when first the world began; the

motive power existed, when the planets to their stations rolled. Yet when Franklin first brought lightning down from heaven, who would have foretold that in less than the life of man, that lightning itself would have been chained to our will, and made to bear the message of our love or hate, from the St. Lawrence to the Gulf of Mexico. As little can we tell, what may be the consequences of the great undertaking we have met to discuss.—We know, judging from what is already before us, that the time of transit between Great Britain and the United States will be shortened by several days—but to what extent, ultimately, it is impossible to say.

In the consideration of the question, this Convention must come calmly and deliberately to a sound conclusion. They are not the sole adjudicators upon this point. The capitalists of London and New York, of Liverpool and Boston, are to pronounce upon it. And unless they sustain the conclusion to which you come, it is of little consequence what it is. To them it must be presented as one great stupendous work—sinking intermediate points, bringing prominently to view the two great termini, London and New York, and showing that the time between those two places will be materially shortened by this route—and further that as a pecuniary investment it will pay. The immediate question before us is whether this great object can be attained by a route composed of steam communication and railroad, crossing the Bay of Fundy from St. John to Digby, or by a continuous land route round the head of the bay. To have a broken communication is at any time a serious objection, and it may well be doubted, whether passengers who come out in the steamers, would disembark at Halifax, if the prospect of another embarkation, and sea voyage were before them, and more particularly of the character described by the several gentlemen who have already spoken of the bay.

I have no desire to malign the waters, which wash the shores of my own home, but it is well known, that the Bay of Fundy has a character abroad, which would utterly doom the cause, with the capitalists of London and New York, if associated with it. Two thousand years ago it was described in language too accurate to be forgotten—

"Statio malefida carinis."

"Quod Latius mundi, nebulae, malusque Jupiter urget."

Certainty to a business man is as essential as speed. The advocates for a bay route, can at the utmost, claim for it but one or two hours advantage, allowing that winds, tides, storms and fogs never intervene—but with such elements of opposition, it would be impossible to count upon accuracy. The increased expense of the land route is urged as the strongest objection. It may be questioned whether, when you take into consideration, the expense of building, equipping and maintaining steamers and wharves in a bay where the tide rises and falls 40

or 50 feet, and runs like a sluice, with the disasters from fogs and snow storms, and the cost of insurance, how far the amount of the one would exceed the amount of the other—but the question of expense is of secondary importance, when compared to the advantage gained; and of none at all, if it can be shown that the investment is a paying one. The capitalists of England, will look not to the amount, but to the security; and it is not likely that the men who built the tubular bridge across the Menai Straits, at an expense of £2,000,000 sterling, to save twelve miles, will hesitate at a quarter of that sum, where a highway of nations is concerned.

We must therefore examine this land route as a matter of business—will it pay or not? Of that portion of the route which will pass through New Brunswick, to which it is my duty to ask your attention, 108 miles have been surveyed, laid out and reported upon by an experienced engineer, appointed by the government, who has calculated the expense and given the estimates for the work along the whole distance, including station houses, etc. the wharves and buildings at Schediack terminus on the Gulf of St. Lawrence, and St. John the terminus on the Bay of Fundy. At the time that Mr. Wilkinson was engaged in this work, about two years since, traffic tables were taken by order of the government, at three different stations, to see whether there was sufficient local traffic to authorise the undertaking.

By an examination of this report and these traffic tables, which I beg to lay upon the table, we shall be able to form a correct estimate. It should be remarked that these tables were taken during the three harvesting months, when the agricultural population were otherwise engaged than in travelling, or in the transportation of traffic. By reference to the report it will appear, that by the returns from two stations, 70 miles apart, Hammond river and the Bend of the Peticodiac, the annual estimate of travellers by the former was 23,368, by the latter 87,700—total, 111,068—mean amount, 55,534. It should here be remarked, that this route lies through a thickly settled farming country, affording a continuous level nearly the whole way, owing to the singular circumstances of two river running in opposite directions; one emptying into the Head of the Bay, the other into the Saint John. Regarding these numbers, says Mr. Wilkinson, "as derived from a faithful registration of points upwards of 70 miles apart, they must nevertheless fall short of the truth by the large number of travellers entering or clearing the main road, on either hand before approaching those points. One mode of viewing the relation of these statistics to prospective revenue, is by comparing the same with the statistical returns of such railway in actual operation as may afford a fair example of passenger traffic, say of the Western railroad in Massachusetts.

"The average yearly number of through passengers on this railway during the five years from 1842 to 1846 inclusive, was 23,704, and of way passengers 196,487. Now it is extremely improbable that any considerable number of the travellers, at either of these points of registration between Saint John and Schediack were travelling at a greater average distance than 34½ miles on the same day. In order therefore fairly to represent the traffic on the whole distance, at least one intermediate station should have been registered. This would have fallen on Sussex Vale, the centre of the best settled portion of the line. A registration at that place would no doubt have shown a considerable greater number than at Hammond river, and perhaps less than a mean at the Bend. It will be reasonable to assume that it would not have been less than a mean of the two, or 55,534. This number may be taken as a third registration, in order to represent nearly the whole way traffic according to an average experience of five years on the Western railway thus:

At Hammond River.....23,368
At Sussex Vale—mean.....55,534
At Bend of Peticodiac.....87,700

Total of way passengers.....166,602

"Viewing the amount of way traffic with respect to the extent of country traversed, it is as compared with that of the Western railway as follows: For the number 196,487 way passengers in a distance of 156 miles, the proportion for 107 miles 134,770

—but by the above computation, the number who travel within the latter extent without a railway, is already 166,602, or 23 per cent. greater than on the principal railway in Massachusetts. This fact alone is sufficient to remove doubt on the question of prospective revenue. It shows that the time for the establishment of a railway on this line of country is not yet to come, but that it has long since arrived."

The following table based upon that report, and the traffic table, referred to, will give an idea of the results from the present existing state of facts, and show a clear surplus, after paying working expenses, and five per cent. interest on the capital invested, namely:

Towards St. John—	
55,534 passengers, at 20s. (\$4) 108 miles	£55,534 0 0
157½ horned cattle, at 2s. per mile, 108 miles, at 18s.....	£1,414 9 0
160 tons hay, at 18s.....	144
624 tons baggage, 18s.....	561 7 0
20,000 bushels of potatoes, at 40 bushels to a ton, 500 t. at 18s.....	450 0 0
4,636 hogs and sheep, at 1s. 10d., 108 miles.....	424 19 4
	£3,045 3 4

Outward freight of flour, groceries, &c. to the interior, are equal to.....	£3,045 3 4
	£6,090 6 8

Off 40 per cent. for working expenses &c. £24,400	
Interest on £540,000, at 5 per cent., being 108 miles, at £5,000 per mile.....	£27,000
	£51,400 0 0

Clear surplus.....£10,224 6 8

These calculations show, that without counting upon the government contract for carrying the mails, or any increase of business, that that portion of the line would be a remunerative investment.

Mr. Dickey, one of the delegates from Cumberland, has tables and statistics to show similar results for the line through Nova Scotia; and there can be no doubt, judging from the experience of the existing lines in the United States, that that portion in your own country will pay.

The next point to which attention should be called, is the saving with regard to time. And the question arises—will any, and what, saving of time be gained, by the proposed European and North American railway, over the present route from London to New York.

An examination of the following table will afford convincing proof:

	days. h. m.
From London to Holyhead, 263 miles, at 35 miles per hour, average speed of express trains, including stoppages	7 30
Holyhead to Dublin, 63 miles, at 18 miles per hour, the present speed of the channel boats.....	3 30
Dublin to Galway, 120 miles, at 30 per hour.....	4 00
Galway to Halifax, 2,165 miles, at 16½ miles per hour, the Cunard boats having attained 15½, and with less weight of coals, will increase their speed....	5 11 15
Halifax to boundary between New Brunswick and Nova Scotia, 120 miles, at 30 miles per hour.....	4 00
Through New Brunswick, via St. John, to Calais, in Maine, 210 miles, at 30 miles per hour.....	5 10
Waterville to New York (line in actual operation) 410 miles, at 30 miles per hr	13 40

Total running time.....7 8 5
Add 4 hours for delays, trans-shipments &c. 4

Whole time between London and N. York 7-12 5
Thus shortening the time by at least four days,

or four days and a half. (Cheers.) Such are the practical views in which this great subject may be regarded; but if we look at it in the light designated by the 4th resolution laid before this convention, it assumes an importance which language is powerless to convey. It is no local matter—the highway of the world from St. Petersburg to San Francisco. It must ever be without a competitor, because its geographical position ensures it precedence. It traverses empires, kingdoms, colonies and states, for the benefit of all. Connected with no systems of Europe and America, its arms embrace the civilized world; the ties of brotherhood are fostered by its means; the humanities of life extend; generous impulses are imparted; national differences are forgotten; and this European and North American railway will link the eastern and western worlds together—one great commonwealth of nations. (Tremendous cheering.)

Sir, I cannot, like the honorable gentleman who preceded me, claim any local lineage to invest my arguments with favor in your eyes; I am of an English family, and I would not, for the applause of your whole country, admit aught in derogation of my own. (Cheering.) I can only present this matter before you in a plain business point of view, one that will result in incalculable benefit to both countries, and to express the ardent desire of the province to which I belong, to co-operate in the great work.

Mr. Gray sat down amid the most enthusiastic demonstrations of applause."

Pennsylvania.

Ohio and Pennsylvania Railroad.—We have just received the late annual report of the directors of this company, submitted to the stockholders at their meeting in Pittsburg on the 9th inst., which presents the following statement of the progress of this work.

The grading and masonry of the line are now under contract for a continuous distance of one hundred and thirty-two miles, from Pittsburg to Wooster, and a large part of the work is already completed.

The iron rails, chairs, and spikes are purchased for the road from Pittsburg to Massillon, one hundred and seven miles, and the delivery of the rails upon the line is already begun. The timber for the track is also under contract, and some of it delivered. Great efforts have been made to urge the work forward with energy, and it is the expectation of the board that the road will be opened to Beaver and New Brighton in July, and to Alliance and Massillon in the autumn of this year.

It is intended to commence the laying of the track as soon as the frost is out of the ground in the spring, and to press the work forward as rapidly as possible. The rails are of the inverted T pattern, in lengths of 20 feet. Their weight is sixty pounds per yard, and each bar weighs four hundred pounds. They are symmetrical in their form, the inner and outer sides being similar, so as to permit the bar to be reversed, when it may have worn so as to render it expedient. The pattern was designed by the Chief Engineer, who has had large experience in the manufacture of railroad iron.

Three thousand tons of rails, intended for the track, from Pittsburg to Beaver, and New Brighton, are under contract with Brady's Bend Iron Company, on the Allegheny river. The rails which they have already delivered are manufactured in a highly satisfactory manner.

Eight thousand tons of rails, for the track from New Brighton to Alliance and Massillon, are contracted for with the house of Bailey, Brothers, & Co., of Liverpool, England. Three thousand tons are to be delivered at New Orleans, and brought up the river to Beaver; and five thousand tons are to be delivered at Quebec, and taken by lake to Cleveland. Bills of lading have been received for two thousand seven hundred and fifty tons of rails

shipped to New Orleans. The contract for the spikes, and for the wrought iron chairs, required to secure the ends of the rails, has been made with Corning and Winslow, of Troy, New York.

The road between Allegheny city and Beaver is generally a dead level, and has no curve upon it of a less radius than half a mile. The distance is twenty-five miles, and the road is graded and bridged at once for a single track; all the streams being crossed with stone arches. On this part of the line there is a large amount of culvert masonry, and it was only by very urgent efforts during the autumn that the contractors were made to bring the work to its present state of advancement before the setting in of winter. The difficult foundations are all in, and many of the arches are turned.

The population of the twin cities of Pittsburg and Allegheny, with their suburbs, has increased from 31,204, in 1840, to 83,954, in 1850; being an increase of 52,750, or 169 per cent in ten years. As a site for a great manufacturing city, Pittsburg is without a parallel in the country. The Ohio and Pennsylvania railroad is emphatically the railroad of Pittsburg. It will bind her with links of iron to her best customers. The droughts of summer, the frosts of winter, and the fogs of all seasons, which interfere so much with her river trade, will find her railroad ever ready to bring her customers promptly to her doors, and to convey their purchases speedily to their destination. The board assure the stockholders that they are thoroughly satisfied that the best route has been adopted, and that no other road can ever be made so important to Pittsburg as this.

The board believe that the stock of the company will be highly profitable, and that long before its bonds mature, they will be converted by the holders into capital stock.

The Ohio and Pennsylvania railroad is the extension of the Pennsylvania Central railroad westward from Pittsburg, into the state of Ohio, by the best route. Its charter is a unit in both states, and it is free from the annoyance and losses caused by divided counsels and a double management. It costs less than one-half as much per mile as the Pennsylvania railroad, and its traffic is free from taxation. It runs through one of the richest wheat growing regions of Ohio, and it has upon its line immense beds of bituminous and cannel coal, and ample water power; and, in its immediate vicinity, more than thirty towns and villages. It will command an amount of way business sufficient of itself to make the road profitable, and which, it is believed, no other line in the state of Ohio can equal.

Its geographical position is that of a "back bone line" traced over the table lands, about sixty miles south of Lake Erie, intersecting the various roads running from the Ohio river to the lake; and forming a part of the shortest geographical line for a railroad from New York, Philadelphia, and Pittsburg, to Canton, Massillon, Wooster, and Mansfield, in Ohio, and thence to Fort Wayne, Chicago, Peru, Rock Island, and Council Bluffs, and to the South Pass in the Rocky Mountains, on the direct route to California and Oregon. An examination of the map of the United States will illustrate this last fact, which is alluded to, not with reference to the present value of the road, but as showing the future importance of its geographical position.—The fact, however, that our road will offer the shortest route from New York and Philadelphia to Cleveland, Sandusky city, Toledo and Chicago; is of immediate importance, and very great interest. As the way trade will sustain the road, we will be in a position to compete for the through business at very low rates.

As the second link in the great central chain of railroads from Philadelphia to St. Louis, by the way of Indianapolis, our road occupies a highly important position; and the companies constituting the chain, have aided each other, by mutual efforts, to draw public attention to the vast consequences which will flow from bringing together the several links of this grand communication, which is now advancing to a speedy and successful consummation.

Since the last annual report was made by your board of directors, the city of Cincinnati has undertaken the construction of the Ohio and Mississippi railroad, which is intended to be a direct line

from Cincinnati to St. Louis, by the way of Vincennes. This adds another reason to those before existing for the early construction of the cut-off line, from our road west to Wooster, by the way of Mount Vernon, in Knox county, to connect with Cincinnati. The citizens of the counties through which that line will pass, now propose to make the connection at Springfield, in Clarke county, at the point where the Little Miami and Mad river railroads connect, and from which there will be two alternative railroad lines to Cincinnati, each eighty-four miles long, the one by Zenia, and the other by Dayton and Hamilton.

The whole length of the Ohio and Pennsylvania railroad will be 185 miles; extending from Pittsburg, by Beaver, Salem, Canton, Massillon, Wooster, Loudonville, and Mansfield, to its point of intersection with the Cleveland, Columbus, and Cincinnati railroad, at Crestline near Galion. At this point it is expected that the Bellefontaine and Indiana, and the Ohio and Indiana railroads, will connect with our road, as the topographical features of the country plainly indicate it as the most favorable point for the purpose. The steepest grades upon the line are less than fifty feet per mile, the minimum radius of curvature is one thousand feet; and upon its whole length, our road crosses no large stream except the Big Beaver.

The eastern division, extending from Pittsburg to the point of intersection with the Cleveland and Wellsville railroad at Alliance, is 81 miles long, and is under the immediate supervision of Edward Warner, Esq., as Resident Engineer. The western division, extending from Alliance to Crestline, is 104 miles long, and is in charge of Jesse R. Straghan, Esq., as Resident Engineer. The whole road is superintended by the Chief Engineer, Solomon W. Roberts, Esq., who has had charge of it from the commencement of the undertaking. The board are well satisfied with the manner in which the duties of the Engineer Department have been discharged; and gentlemen composing it have labored assiduously to promote the interests of the work; and good order and attention to duty have characterized the conduct of the engineer corps generally.

As soon as the eastern division of the road is completed, a continuous railroad communication will be effected between Pittsburg, Cleveland, Columbus, and Cincinnati. It will require the completion of only 81 miles of our road to accomplish this object, by which Pittsburg will be brought within six hours of Cleveland and eighteen hours of Cincinnati. This the board expect to accomplish this year, and when done it will be certain to secure a large revenue to the company. At the same time, it is intended to open the road to Massillon, the most important wheat mart on the Ohio Canal.

Between Massillon and Wooster, twenty-five miles, a large part of the grading and bridging is already completed, and the board hope soon to be able to make arrangements for the superstructure on this part of the line.

West of Wooster the work is not yet under contract, because the local subscriptions required to complete the grading and bridging are not yet filled. The amount remaining to be provided is not large, and from the active efforts now making to obtain it, the board believe that they will be able to put the work under contract to its western terminus in the coming spring.

The financial system adopted by the board they believe to be the best that can be devised under the circumstances of the company. It requires that the amount needed to grade and bridge the line shall be raised by local subscriptions to the stock; so as to complete that part of the work without debt, and to make the road a domestic interest to be protected by those who are to be mostly benefited by its construction. After a safe basis for credit has thus been made, convertible bonds are issued and sold by the company, to procure the iron and equipments for the road, to lay down the track, and bring it into use.

By pursuing this course with caution and energy, a vast deal has been accomplished in the space of about two years, and the board believe that a steady adherence to the same policy will in a short time bring the whole enterprise to a successful completion.

Convertible bonds to the amount of one million of dollars have been negotiated, secured by a deed of trust upon the road from Pittsburg to Massillon. About half of these bonds were disposed of in purchasing railroad iron, chairs, spikes, locomotives and cars, and the remaining have recently been sold for cash, on highly favorable terms, by the house of Winslow, Lanier, & Co., of New York—the payments for which are all to be made by the first of May next.

The above extracts present the principal matters in the report that are of general interest. This road is a very important one and occupies, and justly so, a very important place in the public eye.—While this company have made the most satisfactory progress in the work of construction, they have been equally successful in securing public confidence both at home and abroad. Their securities command higher prices in this market, we believe, than any other of a similar kind, which is due in part to the judicious manner in which they were brought before capitalists, and, in part, to the able management of the company's affairs at home.

The directors of the company for the ensuing year are:—

Wm. Robinson, Jr. of Penn.,	President.
Frederick Lorenz,	"
J. H. Shoenberger,	"
James Wood,	"
John Larwill, of	Ohio.
Arnold Lynch,	"
Zadok Street,	"

New York.

Troy and Boston Railroad.—The annual meeting of the shareholders of this road was held in Troy on the eighth instant, and the following gentlemen were elected to serve as directors and officers for the ensuing year:—

Jared S. Weed,	President.
E. Thompson Gale,	Vice President.
George Goud,	Sec'y and Treasurer.
Samuel F. Johnson,	Chief Engineer.
Directors —Jared S. Weed, E. Thompson Gale,	
Amos S. Perry, Charles H. Merritt, Isaac B. Hart,	
Elias Johnson, Ephraim Carpenter, Hiram Slocum,	
Job S. Olin, Daniel Robinson, Isaac Talmadge,	
Cornelius Lansing, and L. Chandler Ball.	

The above road is to run from Troy to the Vermont State-line at Pownal, and is now under contract from Troy to Hoosick Falls. From Troy to Eagle Bridge, it is also the trunk line of the Rutland and Washington, and the Troy and Rutland. A contract has also been made by this company with the Western Vermont railroad company, by which the latter agree to construct a railroad from Rutland, Vermont, to the State-line between Vermont and New York, at a point in the town of Hoosick, within 5 1-4 miles of the Troy and Boston railroad; the Western Vermont railroad company are also to construct a spur from their main line at North Bennington to Bennington, a distance of 4 1/2 miles. The Troy and Boston railroad company have agreed to lease of the Western Vermont railroad company that portion of their road between the State-line and North Bennington, a distance of about two miles, at 6 per cent per annum on the cost thereof—which cost is not to exceed \$27,000 per mile, including the use of depots and other fixtures necessary for the operation of the road between North Bennington and Troy, for a term of ten years—all renewals and repairs, except the surfacing of the track, to be done by the Western Vermont railroad. The Troy and Boston railroad company have also agreed either to lease the portion of road between North Bennington and

Bennington, the length of which is to be about 4½ miles, at a fixed cost of \$100,000, including depots and other fixtures, at an annual rent of 6 per cent on the cost as aforesaid—all renewals and repairs, except surfacing, to be made by the Western Vermont railroad company—or to furnish the motive power of their regular through trains only, for operating said road, at a cost of 30 cents per mile for each and every mile so run—in either case, the contract to be for the term of ten years. A company is now being formed for the purpose of constructing the connecting link of railroad between the Troy and Boston railroad in the town of Hoodsick, to the Western Vermont railroad, at the State-line, a distance of 5½ miles, which this corporation expect to lease for a term of ten years in order to form a connected line of railroad from Troy, (via Bennington to Burlington, Vermont) which can be readily accomplished during the present year.

The characteristics of the above road are as follows, viz:

Total length of line.....	4-66 miles
Total length of straight line.....	22-80 miles
Total length of curve line.....	11-79 miles
Maximum curve.....	2865 ft. radius
Maximum grade.....	40 ft. per mile
Total rise.....	572-05 feet
Total fall.....	112-80 feet
Total length of level grade.....	11-65 miles

Georgia.

Muscogee Railroad.—At a recent meeting of the stockholders of this road, the following gentlemen were elected directors for the ensuing year:—John H. Howard, Harvey Hall, Robert B. Alexander, S. A. Bailey, Robert A. Ware, Hines Holt, and Daniel Griffin. Col. Howard was subsequently chosen President.

Massachusetts.

Troy and Greenfield Railroad.—The North Adams Transcript of the 9th inst., states that ground was broken in that village on the 8th inst. in the construction of the above road.

Ohio.

Cleveland and Pittsburg Railroad.—At the late annual meeting of the stockholders of the Cleveland and Pittsburg railroad, the following persons were unanimously re-elected directors:—Zalmon Fitch, Henry N. Clark, E. G. Williams, Cleveland; James Butler, H. N. Day, Hudson; Cyrus Prentiss, J. B. King, Ravenna; J. Stuart, J. Mackintosh, D. McDonald, Wellsville, and Charles Knight, Jr. Pittsburg.

At a meeting of the directors, Cyrus Prentiss, Esq., was re-elected president, Samuel Foljambe, Secretary, and W. Wadsworth, general treasurer.

Vermont.

Southern Vermont Railroad Company.—At a meeting of the stockholders of this company, held at Pownal, Vt., on the 6th inst., the following gentlemen were elected to serve as directors for the ensuing year:—

J. M. Potter, Pownal, Vermont.
B. E. Brownell, " "
J. L. Carpenter, " "
G. Bimmer, " "
E. Perkins, " "
C. Bates, " "
J. Myers, " "
J. Kimball, North Adams, Mass.
E. L. Hawis, " "

At a subsequent meeting of the directors, Mr. J. M. Potter was elected President, B. E. Brownell Vice President, and C. Bates Secretary.

We believe that the above road, in connection

with the Troy and Boston, and Troy and Greenfield, forms the proposed line of railway from Troy to the Vermont and Massachusetts railroad, the whole line being generally known as the Troy and Boston railroad.

New Jersey.

Another attempt is to be made at the present sitting of the New Jersey Legislature to obtain a charter to construct a railroad from the city of Camden, in the county of Camden, through Burlington, Ocean and Monmouth to Keyport, or some point east of it on the Raritan Bay.

Pennsylvania.

The Pottsville Mining Register, in speaking of the route of the proposed road from the coal fields of Pennsylvania to New York, thinks that the route should not be by Easton. It says:—"It is thought that if we leave the Lehigh at Allentown, we can get a descending grade to the head-waters of the Johicken and thence reach the Delaware at some point near or perhaps considerably above Trenton so as to strike the New Jersey railway and the Delaware and Raritan Canal, with a descending grade all the way; having the choice of taking boats or small vessels there, or of going on to Jersey City direct.

Canada.

Montreal and Prescott Railroad.—This project seems to be making rapid progress in securing the means for its construction. The following subscriptions have already been obtained from municipal corporations, viz:—

Prescott and Russell.....	\$40,000
Two Mountains.....	30,000
Prescott Town.....	7,400
Stormont, Dundas & Glengarry.....	40,000

\$117,500

A large subscription is expected from other municipalities, particularly the city and county of Montreal. Only one half of the cost is to be raised from private means, the Provincial guarantee being available for the other half.

Ohio.

Cleveland, Norwalk and Toledo Railroad.—That portion of the Toledo and Newark road between Toledo and Fremont has been put under contract to be finished within a year.

Railroad from Greenville to Winchester, Ia.—It is stated that the railway from Greenville, Darke county, to Winchester, Indiana, is all under contract for grading and masonry.

Pennsylvania.

A survey has been made by George R. Eichbaum, Esq., of a route for a railroad from Wellsburg on the Ohio, opposite Steubenville, to Washington, Pennsylvania, for the purpose of connecting the Steubenville and Indiana railroad with the Pennsylvania Central. The distance from Washington to the Pennsylvania State-line is 8½ miles, and the total rise 194 feet. The distance from the State-line at Washington is 16½ miles—and total distance from Wellsburg to Washington 25 miles.

The estimated cost of graduation, masonry and bridging from Wellsburg to Washington—25 mls. is estimated to be \$311,400, being an average of \$12,546 per mile. The cost of superstructure with rail weighing 60 lbs. per yard is estimated at \$9,200 per mile—making on the 25 miles \$230,000—and making the total amount of estimated probable cost of graduation, bridging and superstructure with rail \$541,400—being an average cost of \$21,656 per mile. The distance between Wellsburg and

Greensburg, on the Pennsylvania Central railroad, is 74 miles.

Louisiana.

Attakapas Railroad.—The subject of connecting the western part of Louisiana with the Mississippi by railroad is now attracting much attention in that section. In speaking of this project, the Lafayette Republican says:—"Attakapas has four routes of egress to reach New Orleans; only two of which, however, are said to be practicable for transportation purposes, viz: the route by sea, and that by the way of Plaquemine. The distance from Franklin to New Orleans in a direct line is less than 130 miles. The distance by sea is 280 miles, viz: From Franklin to the mouth of the Atchafalaya 40 miles; thence to the mouth of the Mississippi 130 miles; and thence to New Orleans 110. The Plaquemine route is shorter; it being 110 miles from New Orleans to Plaquemine, and 80 miles via Grand Lake and Lake Chicot, to Franklin—total distance 190 miles. The third route is by the way of Red river, and is 380 miles; it would only be accepted as a choice of evils by travellers. The remaining route, called the "mail route," is a mere connection of mail carts, skiffs, and a fraction of the way by steamboats. The distance by the latter route is less than either of the others—being only 148 miles. It takes about eight or ten days to make a trip from Attakapas to New Orleans and back, by the sea route, under ordinary circumstances, at a cost of \$16 for passage, and \$3 50 freight per hhd. for sugar. The Plaquemine route is never certain as to time or safety, and often long detentions occur—steamers run with no regularity, but withdraw from the trade whenever a cargo attracts them elsewhere.

By the proposed railroad route the whole distance from Franklin to New Orleans will be about 140 miles, viz: Franklin to Pattersonville 48 miles; thence to Grand river (steamboat) 20 miles; thence to Donaldsonville, 22 miles; thence to New Orleans 50 miles. Here would be a tangible reliance for the travelling public, as well as a safe and speedy means of transportation. Are not here evidences enough of the need of internal improvements in the interior?"

There is a plenty of inducement to the construction of this work, in the present difficulty and cost of transportation, and in the ease with which it can be carried out. All that is wanted is a "will" on the part of those interested. This would construct a road under similar circumstances in almost any part of the country, and we see no reason why it should not here.

Indiana.

Jeffersonville Railroad.—In an article on this road, the Louisville Journal speaks as follows:—"We learn, with much satisfaction, that the work on this important road is steadily progressing, notwithstanding the inclemency of the season. Fourteen miles of the road are now in operation, and the cars are making two trips daily, affording a convenient opportunity to our citizens for an excursion of pleasure and a visit to their friends, many of whom have already tested its advantages, and we advise others to follow their example, and we will promise them that they will not only enjoy the trip, but will then be able to see and fully appreciate the advantages that they are to derive from the road upon its final completion.

The people upon the route are already experiencing its benefits, and the business doing upon the road affords proof of the immense amount of com-

merce that is awaiting its completion and the profitable investment that it will prove to its stockholders.

But when we view the immense resources of this road, and the advantages that will be derived by the people of Indiana and the travelling and commercial public generally, we are in a measure lost in contemplation. It passes through one of the most fertile regions of the State, settled by a most industrious people, producing grain and stock of every kind in abundance, unsurpassed by any part of the west. At Columbus it will connect with the railroads leading, in almost every direction, thro central and northern Indiana, and the extension of the road from that point to the Ohio State-line at Union, a survey of which route has been made by the company, and an appropriation of \$300,000 for the construction of which will doubtless be made by our city council, will give it a connection, at Cambridge city, with the railroads now in progress of construction through central Ohio, with Dayton, Columbus and Pittsburg; and thence by the central railroad of Pennsylvania, with Philadelphia; and at Union it will have a connection with a railroad leading to Cleveland and Dunkirk, where travellers will have ready access by other roads leading either to Boston or New York. And, looking forward to the early construction of the Louisville and Nashville road, it cannot be doubted that the Jeffersonville road will be one of the greatest thoroughfares in the western country.

South Carolina.

Charlotte and South Carolina Railroad.—This road, which is designed to connect Charlotte, N. C., and Columbia, S. C., by railroad, has been completed as far as Winnsborough, and the cars ply regularly upon it. Charlotte is but fifty miles from Salisbury, N. C., the point to which the friends of the Danville railroad hope to carry that great improvement. For whatever some may say or think of it, it is a great improvement—great for Richmond and great for Virginia. And if the hopes of continuing it through North Carolina have been a little dampened by the avowed policy of some of the public men of that State, it is one of those enterprises which cannot be long stopped by sectional jealousies; it must triumph over them; and when once connected with the South Carolina roads, it will become one of the most profitable public works in the south.—*R. Dispatch.*

Maine.

Kennebec and Portland Railroad.—This road is now open to Richmond, and vigorous operations are being made upon other portions of the line.—The company are now in possession of ample means for the construction of the whole road.

Indiana.

Evansville and Illinois Railroad.—We learn from a letter addressed by John Ingle, Esq., one of the directors of this road, to the Evansville Journal, that the above company are making good progress with their road. Already about one-half of the grading between Evansville and Princeton is completed.—For this distance, the rails have been purchased and paid for, and are now arriving. The necessary machinery has been contracted for, and it is expected that a portion of the road will be opened on the 4th of July next. The distance to Princeton is to be completed during the present year.

Beyond Princeton, a survey has been made to Vincennes, showing a very favorable route. The construction of this extension is spoken of as a

matter of consequence, on the completion of the first division.

This company has not made much noise in relation to their project, but none, as far as we have had opportunities of judging, have had better management in their financial matters. Very favorable contracts for the company were made for their iron by an exchange of their securities, and the agents of the company who negotiated these, left behind them a very favorable impression in relation to this work and its management.

Illinois.

Alton and Springfield Railroad.—We are pleased to state that notwithstanding cold winter is upon us, the work upon the above road is rapidly progressing. The force employed on the first of the month was 739 men, 95 horses. The Newton Waggoner arrived from below, a few days since, bringing 5,200 cedar cross ties, to be used in the construction of the road, and the Buena Vista also delivered another lot of the iron, making the total receipts of iron to date 514 tons. The cedar ties are twelve inches broad, and eight feet long, and will be laid thirty inches from centre to centre in the road. For size and quality they exceed any thing of the kind we have ever seen. The contractors are hauling out and distributing the iron, preparatory to the commencement of laying the permanent track, which will be undertaken as soon as the season will permit.—*Alton Telegraph.*

Ohio.

Columbus and Lake Erie Railroad.—The Sandusky Clarion states that this road, from Maysville to Newark, was opened for travel on the 6th instant. The distance between these two points is about 60 miles. The road is substantially built, with a heavy T rail, and is not only one of the best constructed, but traverses a portion of Ohio unsurpassed for its resources and wealth. As it intersects near its northern terminus the Cleveland and Columbus railroad, it will have the advantage of two outlets to the lake, terminating at Cleveland and Sandusky. The completion of that portion of the Central railroad via Newark to Columbus, will be a virtual extension of the Columbus and Lake Erie railroad to the latter place and to Zanesville, and will very materially add to its traffic. The Scioto and Hocking Valley railroad, now in progress, will connect the above with the Ohio at Portsmouth, thus forming a complete line of railroad from North to south, through the centre of this great State.

The Columbus and Lake Erie railroad is leased to the Sandusky and Mansfield company, which pay the former 8 per cent, annually upon its cost, an arrangement which must make its bonds and stock equal to the best securities in the market.

Missouri.

Hannibal and St. Josephs Railroad.—The county of Buchanan has voted \$50,000 in aid of the above road by a nearly unanimous vote.

New Hampshire.

Cocheco Railroad.—This road is to be extended to Alton Bay, at a cost of \$250,000 to be raised by the issue of an eight per cent preferred stock. The extension is to be completed by July 1, 1851.

Maine.

York and Cumberland Railroad.—The western division of the above road, from Great Falls to Alfred, Me., has been placed under contract.

Maryland.

Baltimore and Susquehanna Railroad.

We have received the 23d annual report of this company, from which we present the following exhibit of its receipts and expenditures for the past year:

Revenue and expenditures of the transportation department of the Baltimore and Susquehanna railroad company, from October 1st, 1849, to Sept 30th, 1850.

Revenue between Baltimore and York.

Passengers, No. 132,845...	\$76,818 43
Merchandise, lbs. 228,954	
75.....	162,435 75
United States Mail.....	5,833 33
	\$245,086 51

Revenue between York and Columbia.

Passengers, No. 27,181....	\$43,005 48
Merchandise, lbs. 131,068,-	
009.....	25,338 06
United States Mail.....	1,166 67
	39,510 21
	\$284,596 72

Expenditures.

Tolls to Wrightsville, York, & Gettysburg railroad.....	\$26,878 40
Tolls to Columbia bridge....	3,659 28
	\$30,537 77
	\$156,129 30
Repairs of locomotives.....	\$13,870 00
Rebuilding do..	11,790 01
	\$25,660 01
Fuel.....	\$31,178 90
Running expenses.....	49,597 26
Repairs and incidental expenses.....	49,693 13
	\$186,667 08
	\$97,929 65

A statement of the receipts and expenditures for the year stated in a different form than No. 2.

The net earnings from transportation for the year ending 30th Sept., 1850..... \$97,929 65

And received during same period,

From Wrightsville, York & Gettysburg railroad company for interest on \$161,887 81.....	9,713 27
From sale of lot in York....	2,000 00
From sale of Howard street depot.....	8,500 00
From neglect private switches.....	350 00
	\$119,492 92

And have paid away,

To State of Maryland.....	\$75,900 00
Legal expenses.....	138 95
Calvert station.....	44,126 19
Construction.....	8,936 58
Old claims.....	540 00
Slave and child.....	1,051 80
New locomotive.....	7,369 80
Improvements of depots....	639 44
Stock Wrightsville, York and Gettysburg railroad company.....	4,560 00
Ground rents.....	418 87
	\$24,782 71

Amount of available and unavailable funds 30th September, 1849..... \$245,932 39

Amount of available and unavailable funds 30th September, 1850..... 221,149 68

The receipts for the year 1849 were \$274,893 27

The increased revenue from passenger traffic has been equal to 12 1-10 per cent over the previous year. The revenue from tonnage has been about the same as last year. The fact that there has been no increase of western trade is attributable, says the report, to the high rate of tolls on the line of the Pennsylvania canals, the only commercial revenue available for the trade of Baltimore and Philadelphia. In relation to the matter of the rate of tolls, we copy the following from the report:

Accompanying this report will be found the toll sheets of the New York and Erie and Ohio canals, and also a table carefully made up of the freights charged last year on some of the leading articles of trade, both by steam and sailing vessels, between all the important shipping points on Lake Erie and the city of Buffalo, with the prices of freights charged on the New York and Erie canals, on the same articles, during the same period. In obedience to the enlightened spirit which has always characterized the management of this great commercial thoroughfare, it is proposed, on the completion of important improvements, which this work is undergoing to enlarge its capacity, to make a further reduction of tolls. Upon an examination of the figures presented in these tables it is obvious that, to enable Baltimore and Philadelphia to retain their present western trade and successfully compete with their northern rivals, Boston and New York, it will require low tolls, with corresponding rates of transportation, not only on the lines of communication now in operation, but also on those about to be completed.

In speaking of the connections recently made by the completion of other roads, the report states:

On the 1st of October last, the branch road of the Harrisburg and Lancaster railroad company, between Columbia and Middleton, was opened for passenger trains only. This company immediately availed itself of the connection thus formed with the Pennsylvania railroad, which was open and in successful operation for some weeks, as far west as Hollidaysburg, where by the use of the State Portage road over the mountains, a junction was formed with the eastern division of the Pennsylvania canal, thereby forming an improved line of communication with Pittsburg, 280 miles by railway and only 104 miles by canal. During the short period this route was available for the conveyance of passengers, prior to the close of the canal, the patronage it received induces the board to believe that on the opening of the line in the spring, furnished with additional accommodations which are now in the course of preparation, that this route will be favorably regarded by the travelling community.

The York and Cumberland railroad, when completed, will form an important link in the chain of railways just noticed, connecting with the Pennsylvania railroad at Harrisburg, advantageously by means of the Cumberland valley railroad bridge, at the same time reducing the distance between that place and the city of Baltimore twelve miles, enabling the trains of this company for the west to leave at hours which will not only suit the postal arrangements of the government, but will give greater accommodations to travellers, besides securing box and all contingency, a regular connection with the morning mail trains from Philadelphia.

The York and Cumberland railroad, and also the Cumberland valley railroad (which has been relaid in the most substantial manner, with heavy iron, throughout its entire length,) we are assured will both be in operation by the 1st of January, 1851. It is expected by the officers of these companies that a large trade and travel will be thrown on this road during the coming year. The western division of the Pennsylvania road, between Johnstown and Pittsburg, under the management of its energetic officers, is rapidly progressing to completion. "It will be opened to Bolivar, 22 miles west of Johnstown, in May, to Blairsville, in July, to the Monastery, eight miles east of Greensburg, in December 1851; leaving a gap of 25 miles by the Southern turnpike to Turtle creek, to which point the road east from Pittsburg will have been completed during the spring of 1851."

The Pennsylvania and Ohio railroad west from

Pittsburg will be so far completed as to form a connection with the Cleveland and Wellsville road at Freedom, the point of intersection, in the autumn of the present year; to which place the latter road, 58 miles south of the city of Cleveland, on Lake Erie, will be finished by the 1st of June, before which time the line of road between that city and Cincinnati will be open for travel. So it will be seen that, in the month of December, 1851, a continuous line of railway (with the exception of a short gap between Greensburg and Turtle creek, heretofore mentioned,) will be in operation, via Columbus, Cleveland and Pittsburg, connecting Cincinnati, not only with Philadelphia, but also with Baltimore and Washington. Assuming 20 miles per hour as the running time, and allowing 5 hours to overcome the distance of 25 miles of staging by the southern turnpike, it will be found the trip between the National Capital and the lakes can be accomplished in 30 hours, and between the same place and Cincinnati in 51 hours.

The effect of opening this line of railway communication, connecting the remote points just referred to, with the unsurpassed local advantages it will possess both in trade and travel, and that to a period when other routes will be affected by the casualties of the season, besides proving highly beneficial to the revenues of the companies forming the line, will secure to the government greater despatch in the transmission of mails.

An important branch of this road, to the flourishing town of Hanover, in York county, Pennsylvania, a distance of 13 miles, is now in progress. This, besides attracting to the main stem a large business from its line, it will secure the trade and travel to and from Gettysburg, the county seat of Adams.

Another branch is also projected to Westminster, and active measures are in progress to procure the necessary means for its construction; when completed to Westminster, the inhabitants of the western portion of Carroll, Frederick and Washington counties will aid largely in its extension to Hagerstown—at which place it will form a connection with the Franklin road, which is now being relaid. The distance between Chambersburg and the city of Baltimore, by this route, is only about ninety miles. The completion of the Pennsylvania Central railroad is looked forward to as a matter of great importance to the above road, as, in connection with this, it will form one of the great lines of railroad from Baltimore west.

In relation to the present condition and future prospects of the company, the report says:

The stock of the company is now selling at more than eight times the price it commanded four years ago, and within two years from the present time this road, forming, as it will, a link in a continuous line of railway, connecting the western and northwestern portions of our country with the Atlantic seaboard and national capital, will present one of the most prominent routes in the Union, and one inferior in importance to few, if any. We may confidentially calculate that it will then pay the entire interest upon the capital invested, to the state, the city, and to the private stockholders, to which end the best exertions of the board and executive department of the company have been, and will continue to be directed, so long as they are honored with the confidence of the constituency they represent.

Pennsylvania.

Lebanon Valley Railroad.—The Reading Journal states that a sufficient sum has been subscribed to this work to authorize an incorporation of this company; and it is believed, to authorize the commencement of the work of construction. The following description of the route with estimates of the cost, etc., will be read with interest:—

The road commences nearly opposite the freight depot at Reading—curves to the left and encounters some heavy cutting. Crosses the Schuylkill below the Tulpehocken 71 feet above water by a

bridge spanning the river Schuylkill and the Union canal. Thence it passes westward ascending at the rate of 26½ feet per mile with intermediate levels for 5 miles, and crosses the Harrisburgh turnpike near the first tollgate, and reaches the subordinate valley between South mountain and Slate hill, near the village of Sinking springs, where undulated grades commence and continue until the table lands of the Susquehanna are reached, a distance of 44 miles. After leaving Sinking springs the line continues south of the turnpike crossing a number of small tributaries of the Tulpehocken. Passes near Reading furnace, Womelsdorf and Newmans town, crosses Milbach at the eastern slope of the main dividing ridge, and follows the summit to within 3 miles of Lebanon, leaving Myerstown 2 miles to the right and Schaefferstown 3 miles to the left. From the summit the line crosses the turnpike and passes through North Lebanon, crossing Market street about midway between the borough line and Benjamin Zeller's hotel. It continues on very favorable ground to Millerstown, where the Quittapahilla is crossed and a direction taken towards the turnpike company's Swatara bridge, passing midway between Palmyra and Campbellstown. The Swatara is crossed by a bridge spanning both it and the Union canal near the centre of the great bend. Five and a-half miles further on, the summit dividing the Swatara and Susquehanna is passed and the table lands of the latter river reached, leaving Middletown 3 miles to the left. At the summit the main westward descent commences at the rate of 21 feet per mile, and continues with intermediate levels 7½ miles to the western terminus, passing within one mile of Highspire and the precipitate slopes dividing the Susquehanna flats and table lands 4 miles below Harrisburgh.

The length is 56½ miles, 4½ miles longer than the turnpike, and makes the distance to Philadelphia from Harrisburgh, with the Reading railroad, 114½ miles, or 7½ miles longer than the route by way of Lancaster.

The cost of work, grading masonry, laying track, bridges, &c., is estimated at \$1,333,045 45; land damages, engine houses, water stations, &c. \$129,521 25 making the entire cost of the road \$1,462,574 70.

Eastern Allentown and Hamburg Railroad.—The Reading Journal states:

"That the commissioners named in the act incorporating this company, with a number of other persons, met at Grim's hotel, in Kutztown, on the 8th January, for the purpose of pushing forward the work. David Kutz, Esq. was chosen president. We learn from the preamble to the resolutions that an act to incorporate the company was passed in '38, provided 6000 shares were subscribed. The law run out in 1843, but was renewed for eight years longer. The resolutions recommended the immediate re-opening of the books, for the purpose of obtaining a sufficient amount of subscriptions to procure a charter for the company in compliance with the provisions of the act, and appointed a committee in each of the counties of Berks, Lehigh and Northampton, to attend to the same."

Canada.

St. Lawrence and Atlantic Railroad.—The annual meeting of this company was held in Montreal on the 15th instant. The following is the statement of its financial affairs:

Balance Sheet of the books of the St. Lawrence and Atlantic railroad company—30th November, 1850.

	Dr.	
Capital stock.....	£241,875 0 0	
Preferential stock.....	125,000 0 0	
The lease of the road.....	3,000 0 0	
Forfeited instalments.....	7,994 1 0	
Land Bonds.....	2,917 5 0	
The Seminary loan.....	25,000 0 0	
The B. A. land company loan.....	25,000 0 0	
Bills payable.....	20,878 0 3	
Outstanding accounts.....	10,206 0 5	
		31,084 0 8
		£461,870 6 8

	Cr.
Outstanding Instal- ments.....40,523 16 9	
Bills receivable....4,942 14 4	
	245 465 11 1
Transportation 1849 and '9.....2,689 16 1	
Open accounts.....1,174 10 11	
Construction 1st Section.....226,960 6 11	
Construction 2nd Section.....164,375 0 0	
	391,335 6 11
Equipment.....20,636 15 9	
Banks and bankers.....568 5 11	
	2461,870 6 8

The additional amount required for the completion of the road is to be furnished by the stock taken by the contractors, and the provincial guarantee.

The report states that satisfactory progress has been made in the work of construction, and that the contractors will undoubtedly complete the road within the limit agreed upon.

The above road which was the first work of the kind, of any magnitude, ever undertaken in the Canadas, is the parent of the numerous lines which are now either in progress or perfected, and which have put a new face upon Canadian affairs. The extension of these numerous schemes requiring the co-operation of the government, and of all classes of its citizens, has produced an unity and concert of action which strikingly contrasts with the apparent disorganization of society, and mutual alienation of all classes which existed a few years since. Canada, through her railroads is acquiring a sort of nationality, not only in her external aspects, but in an unity of interests and consequently in a concert of action, which these works tend to promote. Active measures are now in progress for the construction of a continuous line of railroad from Montreal to the western boundary of the province, opposite Detroit; and there seems to be no doubt but that this will soon be accomplished. A road is also about to be constructed extending from the Atlantic and St. Lawrence railroad, at Richmond, on the St. Francis river, to Quebec. These two roads will form a very direct line of railroad between Montreal and that city. In reference to the great project of a railroad from Maine, through the lower provinces. The report speaks as follows:—

"In the course of the past season the directors have observed with sincere pleasure the active and energetic proceedings which have been had with reference to the project of a railway between Portland, Maine, and Halifax, Nova Scotia. The European and North American railway they see every reason to consider as one promising the most certain advantage to the British Provinces in general. But it is to the city of Montreal and to this company in particular that the easterly extension of the line of which their road forms so large a portion must be beneficial, and even if the idea had not been originally expressed by themselves in a report made on a former occasion under similar circumstances to the present, the directors would have felt entitled to congratulate the shareholders of this company on the prospect which is now apparent of an early and spirited movement towards the practical commencement of this important work."

We copy the following allusion to the contemplated works in Canada, which will connect with the Atlantic and St. Lawrence railroad:

"The Proprietary are aware that their act of incorporation confers upon them all the powers requisite for their entering upon the construction of a line of railway from Richmond to Quebec. At the same time they will find in the establish-

ment at Quebec of a new company for this special purpose, only cause of satisfaction that the interests most directly concerned should be charged with the execution of so important a public work. In the determination which the Quebec and Richmond railway company already evince to carry out their object, there is the best augury of success, and the eastern portion of the province may look forward with every certainty to the possession of a perfect railway communication with Montreal as well as with Portland.

The directors have assumed the readiness of the shareholders to afford to so valuable a connection as the Quebec road must prove, every facility in the arrangement of a junction at Richmond, when that shall be desired.

Allusion may be made with equal satisfaction to the prospect of a western extension to the same great line.

The interest manifested by the citizens of Montreal, in the project of a railway from Prescott to Kingston, has been equalled by the lively agitation that has taken place in all the counties through which such a line can pass; and there is little room to doubt that while the fair prospects of a railway which must have the patronage of the whole western traffic of the province at least, will invite the investment of capital for direct profit, the advantages which the same work will afford to every district that it traverses, will lead the various sectional interests into a competition for a preference so warm as to secure their subscription of a considerable amount of the further resources required.

The directors will not dilate upon the advantages which must be realized by the St. Lawrence and Atlantic railroad, when, by means of a western extension, produce shall be received for transport throughout the whole year, and in the same manner, foreign goods supplied to the great western country, in all the season which the climate now closes against navigation.

But they may venture to allude to the benefits which must follow a general adoption of the Portland route by the passenger traffic between Europe and all western America—a consequence which must unquestionably follow the establishment of a continuous line of rail from Montreal to the most easterly port of the Continent.

For the completion of this entire line and its formation into one grand system, there will remain to be undertaken, only a connecting bridge across the St. Lawrence here, at Montreal, a work which has been also the subject of consideration before this company, and one which it would appear is daily becoming of more popular interest."

The report of Mr. Gzowski, the chief engineer has not yet reached us.

We have already stated that the people of Portland, who are constructing the complement of the above line, that lies in the United States, are taking measures to secure the completion of their portion within one year from the first of July next. Should this be done, we presume that the Canadian portion will be opened at the same time. These roads when opened, will undoubtedly prove a favorite outlet for the trade of the St. Lawrence, and will be one of the best and cheapest avenues for western produce, designed for exportation. It will be an additional road for the trade of the great Lake, with which the Erie canal will soon be called upon to contend. We have good reason to suppose that it will receive every encouragement possible both from the English and Canadian governments, for the purpose of bringing the trade of the lakes and the St. Lawrence as far down as Montreal, and through the St. Lawrence canals.

Tennessee.

East Tennessee and Georgia Railroad.—At the meeting of the stockholders in the East Tennessee and Georgia railroad, held at Athens on the 6th instant, the following gentlemen were elected directors in the company for the ensuing year:—Messrs. John H. Crozier and Thos. C. Lyon, of Knox; Alexander Ish, of Blount; I. T. Lenoir and

John Stanfield, of Monroe; A. D. Keys, Wm. F. Kieth and James H. Reagan, of McMinn; and David L. Knox, of Bradley.

The above company have advertised the letting of that portion of the line of the road between the Hiwassee river and Blair's ferry on the Tennessee river.

Georgia

Railroad Connection at Macon.—We learn from a private dispatch to a friend in this city, that the question of connecting the Central, Macon and Western, and Southwestern railroads at Macon was finally disposed of by the city council of that place on Thursday last. The contract between the railroad companies and the corporate authorities was being drawn up at the time the dispatch was sent.

The contract alluded to in the dispatch has reference, we presume, to the proposition which the railroad companies made to the city council some time the past year. That proposition was—that the companies should pay annually to the people of Macon the sum of five thousand dollars, in consideration of the injury they might suffer in regard to tolls upon their bridge from the proposed connection of the railroad across the bridge. No limit, that we remember, was fixed upon as to the time when this annual payment should cease.

We congratulate the officers and stockholders of these roads, and the people of this city upon this auspicious result. Indeed it is a cause of gratulation to the people of the whole state. The interests of all that region lying beyond Macon especially, as well as of this section, have long demanded a connection of the roads, and we rejoice in the belief that it will soon be made. When accomplished, it will give us a continuous line of railway from Savannah and Chattanooga, 431 miles in length, and all in this state.—*Savannah Republican.*

Macon and Western Railroad.—We have before us the fifth annual report of the president and superintendent of the Macon and western railroad company, giving a full exposition of its business for the year ending 31st of November last. It appears from these papers, that the road has been managed with great care and success. The gross earnings for the year amount to \$208,666 13, and its expenses to \$108,234 69—leaving its net profits \$100,431 44, an amount equal to 16 per cent. on the present capital of the company, which is \$630,000; and equal to 10 per cent. on one million and eighteen thousand five hundred dollars, the amount to which the capital is soon to be increased.

This statement of facts must be most gratifying to the stockholders, especially when, by a comparison of the business of 1850 with that of 1849, the following results appear, viz.: increase from passengers, \$26,625 20, decrease in freights, \$15,763 96—showing a total increase of \$9,861 24. The decrease in freights was in the downward trips, and was wholly to be attributed to the deficiency in the crops, of both cotton and corn. This fact is fully demonstrated, when it is shown that the falling off in the receipts of the latter article on the road amounted to 12,742 bales; and the decrease in grain and flour are in much greater proportion.

The report of Mr. Foote, the superintendent, goes into many interesting details, showing the improvements made upon the road and its equipments during the year; and contains many valuable suggestions in regard to the permanent prosperity of the company.

From the report of the president, Mr. Scott, it appears that the stockholders have, at his suggestion, adopted a plan for increasing the company's capital to \$1,018,500, for the purpose of re-laying the entire track with a new, heavy and substantial T rail. The funds for this purpose have already been raised, and the iron, of superior quality, purchased at the unusually low price of \$39 50 per ton, is now rapidly arriving and being placed on the road; and we are assured by the president, that he has every prospect of being able to report the whole track renewed by the first day of December next—after which, we venture to say, that both freight and passengers will be transported on this road in a manner satisfactory to the public and profitable to the stockholders.

No friend of railroad improvement can look

over the items contained in these reports, without feeling convinced that the Macon and Western road is one of the very best managed concerns in the country. None are run with greater regularity; none have had fewer accidents and delays; and none have made better average dividends. The lowest ever declared during the five years it has been in operation, has been equal to 9½ per cent. on the invested capital.

We are not surprised that the stockholders, at their meeting on the 7th instant, for the purpose of electing a president and directors for the present year, should have passed the very complimentary resolution copied in our last paper.

We ventured, more than a year ago, to call the attention of capitalists to the state of this road, as being one among, if not the best and most certain, dividend paying concerns in this State; and we now do so with even more confidence than before. —Macon Journal.

AMERICAN RAILROAD JOURNAL.

Saturday, January 25, 1851.

Wanted.

A Second-hand Locomotive, weighing from 10 to 15 tons. A note, addressed A. B., at "Railroad Journal" office, will receive attention, if sent soon. January 21, 1851.

Western Securities.

We have often taken occasion to speak of western railroad securities, for the purpose of calling public attention to their real value for investments, and of aiding in this way those works for the construction of which they are issued. The true rule by which to measure the value of such securities, are the results which these railroads will accomplish in increasing the value of the property, and consequently the means of those building them, and who are bound to refund the money. If, therefore, a road quadruples the means of those building it, its securities are certainly safer and better than those of a road which is the means of only doubling them; the value of the pledge or security in the outset being apparently the same, the results are what should properly, and do, give them their character for ultimate safety.

The great basis of the internal and foreign commerce of the United States, are our agricultural products. We have not existed as a people a sufficient length of time to allow the growth of a large number of manufacturing or commercial cities. Such as we have are situated upon the sea coast. The great seat of production which must supply them with food, and which must also furnish the materials for our foreign commerce, is the valley of the Mississippi and the great lakes. The cheapness and abundance of food, both for consumption and exportation, must therefore depend upon our means of transportation. Our capacity for production is unlimited, but much of our most fertile lands are worthless, simply because there exists no means of sending their productions to a market. In very many parts of this country corn may be raised at a profit at 20 cents a bushel, while the same article is worth 70 cents in New York. If it could be forwarded for 10 cents per bushel, the producer would make 40 cents additional profit. The reduced cost of transportation (the price remaining the same,) measures the increased profits of the seller. But it often happens in many parts of the country, that all surplus beyond the wants of the consumer is worthless. A railroad, therefore, gives a value to articles that had no commercial value before, and in this respect, creates wealth where none for practical purposes existed.

It is in this view, that we must estimate the im-

portance of railroads to the west, and the value of their securities. The producing portion of the country is far removed from the consumers. All the surplus products of the west require to be exported, and the capacity to produce is only measured by the means for transportation. The fact, too, that our present agriculture engrosses almost the entire attention of our western people, compels them to import all that their own farms and industry do not directly supply. Facilities for transportation, therefore, are what give the ability to purchase. Exports and imports bear the same ratio to each other, because the amount that a farmer can purchase is limited by the amount he can sell. Western railroads, therefore, produce in this way a double result, and create an import, while their original and primary object was to facilitate the export trade.

How is it with the management of the affairs of companies east and west? There is probably not much difference in this respect. In the east there is more experience, and in the west more disinterestedness, and a much greater amount of gratuitous services rendered. It has now become a very difficult matter to construct a road in the eastern states, the stock and debts of which shall represent its entire cost. In the older states, the disturbance of vested rights necessary for the construction of a railroad, costs an immense sum; in the west, nothing. There, all the lands required for way, and depots, and stations, are a gratuity. In the east, however much a landholder may wish a railroad built, he generally wrings from the company the last cent he can get. In the new states, the great item of cost is the iron; in old states it is the least. All these reasons combined easily account for the great disparity in the cost of railroads in the two different sections of the country. The cost of western railroads is only about one-third that of the eastern, while, as we stated before, their business must be vastly greater. All that is wanted to give their securities the preference, is time to show their superiority.

The Stock and Money Market.

The past has been an active week in railroad securities, and prices continue to be well maintained. Apparently we are no nearer the bottom in the money market, than we were six months ago; though a great many suspicious glances are thrown toward the future.

The principal operation for the past week was the sale of \$800,000 of the Mad River railroad bonds, which averaged as follows:

\$10,000 at 92½ per cent. netting.	\$9,250 00
1,000 at 92.....	920 00
61,000 at 91½.....	55,967 50
25,000 at 91½.....	22,875 00
12,000 at 91½.....	10,980 00
20,000 at 91½.....	18,225 00
241,000 at 91.....	219,310 00
216,000 at 90½.....	196,290 00
214,000 at 90½.....	193,670 00

\$80,000.....\$727,487 50

Now we must be excused for expressing our doubts as to the genuineness of the sale of all these bonds, and still greater doubts as to their netting the rates set down against them. The prices given are above their value, as compared with the average sales of other securities equally good. They are based upon a second mortgage. The road will lose nearly all its through business, by the opening of the Cleveland and Columbus railroad. These facts would naturally exert a strong influence in depressing its securities. On the other hand, the road is owned principally by Eastern capitalists, who re-

side in Boston, and who sold the bonds here, for the purpose of making New York furnish the money to relay the track. A very strong influence was brought to bear in the moneyed circles, and a great many persons were undoubtedly enlisted to "puff," and probably to bid, for the purpose of giving them a good start. The oiling of the complicated machinery necessary to gracefully shift a load of \$800,000 from the company, upon the shoulders of the public, cost no small sum, and will undoubtedly bring the net of this sale down to the mark of other securities equally good. However, the sellers played their cards well, and made a good hit upon popular credulity.

Another move, which has excited some stir, and to our minds a very foolish one, is the newly projected road from Schenectady to Utica, upon the south bank of the Mohawk, at the head of which is Azariah C. Flagg, with whom is concerned several capitalists of New York, Troy, and the Mohawk Valley. The Articles of Association, under the General Railroad Law, have been filed in the Secretary of State's office, for the organization of the "Mohawk Valley Railroad Company," "with a capital of \$2,000,000, (and the right to increase the same)"—a distance of nearly 80 miles. The following gentlemen are the directors named in the articles of association: Azariah C. Flagg, James I. Roosevelt, N. York; Abijah Mann, Jr., Brooklyn; Francis E. Spinner, Mohawk; John Paine, Troy; Robert E. Temple, Albany; Platt Potter, Schenectady; Isaac Jackson, Amsterdam; Benjamin Carver, Mohawk; Eliphalet Remington, German Flatts; Wm. C. Johnson, Ward Hunt, John F. Seymour, Utica. The 10 per cent. on the capital stock, it is stated, has been paid in, and all the other requirements of the law been complied with.

We go for free railroading, and think that there is less danger in entrusting to people the management of their own affairs, than to commit them to the care of a corrupt legislature. But if we are going to have rival roads, let us build these rivals where they can be made the means of a positive good to some, as well as harm to others. Let the rival occupy if possible a different route, where it can be the means of a local and public good, as well as of private pique or spleen. We do not think that the public are any worse off for the Utica & Schenectady railroad, though this company may have had a pretty sharp eye to their own interests as well as to public convenience. The company does not charge exorbitant tolls compared with other roads. They provide good accommodations for travellers and are always foremost in adopting all the improvements of the day. They have one of the best routes in the country, have built a good road and managed their affairs very ably; and by these means, have brought up their stock to a high point. We have no acquaintance with any of the members, but we think it very probable, that they may shew some "independence," which we understand is one of the charges against them. This is a very natural result of their position. But this route is soon to have a host of rivals for its through business, from which it derives a large part of its income, in the numerous lines branching off from the Central line to the Erie, and on the lines in progress and operation in the north, and this threatens to be sufficiently strong to bring their profits down to a reasonable limit.

We do not like the features of this movement, because they indicate to us some selfish end, or speculative scheme. There is clearly no necessity

for this road to meet the business of the route. Its construction, if built, must be justified by the misconduct of the existing road. Now, by doubling the capital we do not see how passengers are to be carried any cheaper than at present. The business certainly cannot be much increased. Here then are two or three millions of dollars to be expended without adding to the business of the country or promoting substantially public convenience. Rival lines gave the death blow to English railroads. Millions upon millions were thrown away in the same manner in Massachusetts. We do not like to witness the commencement of such schemes in New York. We have not money enough to throw it away upon them. Such as are based upon ill will or upon speculation are always dangerous, not only in results, but in the influence they exert upon the community, in fostering the same spirit that gave birth to the first. A scheme that has not a legitimate object should never be trusted. Its getters up are looking after their own ends, and the public will find that when these ends are accomplished, that they will be left to shift for themselves.

In the field of speculation prices are somewhat lower than at the close of last week. Railroad bonds are negotiated at about the old rates, the best class of 7 per cent. western bonds selling from 85 to 90 net. It is difficult to give the net of sale at auction. There is so much gammoning required to carry off a public sale handsomely, that only the sellers know how much it costs. Our friends must not suppose that because they see quotations all the way from 90 to 100, they can readily sell their own securities at that rate, no matter how good they are. These quotations are often the tricks of the trade, and they show the mark that particular cliques or parties wish to bring out some security at, rather than the price that any person is willing to pay. These quotations are merely an introduction of some stock to the public, before which it makes its bow, and then retires to be brought forward again in some suitable occasion. This process of training is kept up till the stock has become familiarized to the public and the public to the stock, and if it is good looking, and makes a good appearance, some person will come along who will take a fancy for it, buy it up at a good price, and take it out of the market. Stocks are purchased in Wall street, just as horses are at the Tattersals. The young and fresh ones in both cases, for what can be made upon their growth and improvement. The old and damaged ones are bought up for the purpose of giving them time to recruit, to slough over old sores, after which they come out as fresh as new, to tempt the unwary and inexperienced. The figure may be carried still further, and used to show the danger of too public an exhibition of the securities, that a person may have to sell; for as in the case of the sale of a horse, all will give it a bad name in hopes of being able at some time to buy it at a low price, so with stocks and bonds; the lower their first sale the greater the amount to be made by their rise.

It may not be inappropriate to state here the usual manner in which securities are negotiated. We have already spoken of sales at auction. These are considered safe to be tried only under peculiar circumstances. If one man is seen running through the streets, no person would think of following him. But let ten start together, and every person in sight will join in the chase. If these ten halloo the rest will halloo in sympathy; and if the leaders act in

concert, they will soon acquire such an influence over the feelings of those following, as to have them almost entirely under their control, and ready for any dare devil exploit that may have been planned. Persons are in this way easily brought into a state, when they "go it blind," indifferent, unconscious even, of any blows or contusions they may receive. So with selling railroad securities at auction. The great mass of operators will of course unite to break down the sale; and will do so, unless it is strongly supported. A few strong names must be selected to lead off, to puff and blow, and manufacture a public sentiment in favor of the what to be sold; to form the nucleus, and start off in the race, and the number and spirit of those that will follow, will bear an exact proportion to the apparent zeal and confident assertion of the leaders. After the public sentiment is brought up to the proper point, the managers must attend the sale, start and sustain the bids at a proper point, and take for the sellers what cannot be disposed of *bona fide*. All this process, as may be well supposed, costs something; so much, that sales made in this manner are only resorted to where a very large amount is to be disposed of. Securities sold at auction often bring more than those sold at private sale, but the expense is great, and the risk still greater. If the parties fail to make a good hit, the security loses *caste*, and must then be disposed of as a second hand article.

When securities are disposed of at private sale, the broker or operator to whom they are committed, makes up a party of his friends, among whom they are divided, each taking 5, 10, or \$20,000; for, notwithstanding we have some pretty capacious inaws in Wall street, it can boast of but few individuals who severally could comfortably digest a mass of bonds of \$500,000, without having the functions of his business stomach somewhat deranged. Even such a person prefers a variety of dishes to a surfeit of one. As soon, therefore, as the seller, with the greatest secrecy and confidence, imparts his scheme to the money lender or broker, he communicates with an electric despatch the same to some twenty or thirty others. The whole party must know and discuss the matter, as much as the principal who stands between them and the seller. If the seller, for the purpose of trying the market, and finding out what he can expect to sell for, goes to other operators, he strikes the wiles which carry his secrets around another circuit, composed of an equal number of names. In this manner, a person may not have been a day in Wall street before every important man on 'change will understand his whole scheme as well as the seller does himself. He has thus shown his whole hand, without knowing a card held on the other side. Now we do not pretend to say, that such a person may not be very well used by the party whom he may finally employ; but those whom he does not are at the same time possessed of his plans, and may have a great interest in defeating him. His scheme may interfere with some project of their own, even if they are governed by no more selfish object. No person wishes to invest his money in a security that is not popular with all parties—that will not always sell without requiring any efforts on his part to give it credit. The frowns of a half dozen leading operators are often sufficient to damn a good security, which would at once have gone into public favor under the smiles of the same persons. So long, therefore, as purchasers have a plenty of room for choice, they prefer securities

that are well known to those which must be pushed and crowded into favor by efforts of their own. Another evil which results from the exposure of a scheme in the manner stated is the fact, that unless securities are "placed" soon after they come into the market, the inference is, that there is some intrinsic defect in them which has prevented a sale. The securities in this way become *shop-worn*, and must be sold as second hand goods.

We have thus enumerated some of the modes, and some of the difficulties attending the sale of railroad securities in this market. Those who have gone through the mill will blame us for stating them on such feeble terms. When a person comes here for money, he must bear in mind that \$400,000 or \$500,000 is no small sum; that the delivering a capitalist of this is a long and laborious operation, requiring a skillful accoucheur, the fullest evidence in favor of the security, and innumerable formalities. He must remember that money is power, and that the holder can dictate to a great extent his own terms, and above all, he must bear in mind, that he is liable to encounter the opposition of parties he never heard of or dreamed of before, and that he will come in contact with those who, for life have made man a study, who, at a glance almost, detect his weak points, and lay their plans accordingly. Life in Wall street is a constant contest, and he who would sustain himself in it must prove himself superior to those he meets in their own way.

SALES OF STOCK IN NEW YORK.

	January 17. Sales.	January 24. Sales.
U. S '67 Loan.....	116½	116
Reading Bonds '70..	81	81½
Erie 1st Mort. '70..	110	
Erie R.R.....	89½	89½
Hudson River R.R..	86	87
Harlem R.R.....	70½	71
Stonington.....	53	46
L.I. R.R.....	18	24
Norwich & Wor....	66	67½
Albany & Sch'y R.R.	99½	92
Utica & Syracuse...	135	25
Del. & Hudson.....	139	135
Rochester and Syracuse.....		115
New York and New Haven.....		117½
Reading.....		69
Morris Canal.....		22
Hudson River 2d Mort. bonds.....		99½
Norwich and Worcester bonds 70.....		96
Reading Railroad bonds.....		85½
Erie income.....		99½

SALES OF STOCKS IN BOSTON.

	Jan. 16.	Jan. 23.
Old Colony Railroad.....	66½	
Boston and Main R.R....	104½ a 105½	106½
Eastern Railroad.....	104½	103½
Fitchburg Railroad.....	110½	111½
Michigan Central Railroad....	98½	
Northern Railroad.....	b 4 m 75½	74
Vermont Central Railroad.....	37½	37½
Vermont and Mass. R.R....	b 30 d 32½	32
Western Railroad.....	103½ a 103½	
Ogdensburg Railroad.....	s 30 d 40	
Rutland Railroad.....	59	
Sullivan Railroad.....	18½	
Portland, Saco & Portsmouth R.R.		
Boston and Worcester Railroad.	103½	106½
Rutland Railroad Bonds.....	89	
Vermont and Mass. R.R. Bonds..	89½	
Sullivan R.R. Mortgage Bonds...	79½	
Ogdensburg Railroad Bonds.....	99½	

The sales of stocks in Boston show a pretty strong upward tendency.

Ashuelot Railroad.

The Springfield Republican states that the new board of directors of the Connecticut river railroad have been unable to make a compromise with the directors of the Ashuelot road, in regard to accept-

ting the latter under the lease which had been made in favor of the former, and have consequently voted not to alter the determination of their predecessors who refused to operate the Ashuelot road under the lease. The point of difficulty is the charter given by the recent Vermont legislature to the Ashuelot road; this imposes such restrictions as would make the operation of the road by the Connecticut river company, or any other company indeed, entirely impracticable. It is a question whether the Vermont charter is of any binding force, since the Ashuelot road bought outright all the land over which it runs in that state, which is only about 200 rods. But legal opinions differ on the point, and so long as it is a matter of doubt, the Connecticut river road directors are not willing to enter upon the road under the lease without such guarantees or concessions from the Ashuelot Directors as they are not yet willing to grant.

Finances of Illinois.

The Message of Governor French, of Illinois, gives the following statement of the debt of the State on the 1st of January, 1851:

Principal debt funded under act of 1847	\$5,590,565 36
Interest on same to same date	1,020,278 18
Arreared interest fund	1,945,485 27
Unfunded int. impt. bonds	180,000 00
Other kinds of indebtedness	144,680 00
Interest on last two am'ts.	173,261 40
Wiggins loan, principal and interest	142,000 00
Liquidation bonds	150,000 00
	780,941 40

\$8,346,270 21

From which deduct:	
Interest paid from mill and half tax	\$273,354 43
Surrendered by Macalister & Stebbens	101,379 98
Sale of Quincy House	21,701 00
Purchased for school fund	45,660 90
From sale of N. C. railroad	1,800 00
From sale of Alton and Mt. Carmel railroad	300 00
From sale of Alton and Sangamon railroad	2,000 00
Received by auditors on sale of lands, etc.	98,269 27
Interest	17,323 09
	561,788 73
	\$8,784,481 48

The canal debt on the 1st of January, 1851, may be stated as follows, to wit:

Canal debt, exclusive of \$1,600,000 loan	7,079,117 08
Balance due on canal loan of 1,600,000	1,033,000 00
	\$8,112,117 08

From which deduct	
Interest paid from mill and half tax	255,818 51
Bonds and scrip redeemed and interest	13,270 14
	269,088 65

Total	\$7,843,028 49
Aggregate amount of State debt	16,627,509 01

Removal of Porkopolis.

The people of Baltimore and Philadelphia claim that the completion of the lines of railroad from these cities into the interior of Ohio and Indiana, will effect an entire change in the present mode, or rather, in the locality of pork packing. It is said that it will be about as cheap to transport the live hog, or its carcass before it is cut up, to the Atlantic ports, as it will after it is packed, and that by this means, the transportation of salt, the cost of

re-packing and the loss resulting from forwarding by way of New Orleans, will all be saved. We do not see why most of the pork designed for the Eastern States will not be carried thither on railroads. In this event, Cincinnati will have to doff a feather or two in her cap. However, she can supply the loss with a plenty of others. Railroads may give new directions to trade, but in the aggregate will vastly add to that of all our cities, and to none more than Cincinnati, though a portion of the pork trade which she now enjoys, may take a more direct route to market.

Railroad Traffic.

New York and New Haven Railroad.—The traffic for December shows a very flattering result. The receipts were:

Passengers, &c.	\$56,350 48
Freights	14,502 75

Total	\$70,853 23
Part other roads, including \$3,799 99 to the Harlem	16,536 89
	\$54,316 37
December, 1849	26,668 48

Increase, equal to 184 per cent. \$27,647 89
This is very large, especially when it is considered that the freight arrangements are as yet quite incomplete, and the accommodations for doing that business not sufficient.

Harlem Railroad.—The receipts of this road for December were \$40 548 58, and for the year ending 31st December, \$496,469 92, about \$3,500 below the estimate. The interruption to city business by the relaying of the city track, caused a loss of more than that amount.

Atlantic and St. Lawrence Railroad.—The receipts of the above road for the year ending Dec. 31, were as follows:

Receipts for the six months ending June 30, 1850:	
For freight	\$30,618 61
For passengers	37,291 08

Total receipts for freight and passengers, for first 6 months, 1850	\$67,909 69
Receipts for the six months ending Dec. 31, 1850:	
For freight	\$39,938 01
For passengers	46,656 49

Total receipts for freight and passengers, for 6 m'ths end. Dec. 31, '50 \$96,594 50
The entire receipts of the company, including the carrying of mails, rents, &c., were about \$162,000. The whole length of road running the past year is 47 miles. But few roads in New-England can show a more favorable exhibit, when the length of line and cost are taken into consideration.

Norwich and Worcester Railroad.—The receipts of this road for the two years past have been as follows:

	1848-9.	1849-50.
Through travel	\$17,826 95	\$12,833 04
Local travel	86,571 60	97,276 71
Through freight	20,935 48	20,347 45
Local freight	96,234 91	116,103 83
Mails, &c.	12,241 53	12,549 86
Rental	2,387 21	2,148 23

Total	\$235,197 61	\$261,259 12
Excess, equal to 10 1/2 per cent.	25,061 51	

The receipts of the six months just past have been	\$143,916 69
Running expenses, repairs, &c.	72,046 35

	71,870 34
Interest	28,255 71

Balance to profit and loss	\$43,614 60
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Out of this the directors have declared a dividend of 2 1/2 per cent on the scrip (85), equal to \$2 1/2 per share.

Old Colony Railroad.—The following is a statement of the operations of the above road for the past year:

Receipts for passengers, including mails	\$202,150
" freights, including gravel and city offal	91,333
" rents	3,281
" sundries	102

Total, against \$275,066 in 1849	\$296,866
Expenses, interest on bonds	\$19,728
Rents to South shore and Dorchester and Milton roads	27,692
General expenses, including renewals of iron	168,146-215,566

Net earnings	\$81,300
Equal to \$4 50 per share of \$100 each on 18,000 shs.	

Mad River and Lake Erie Railroad. —The earnings of this road for the past year were as follows:	
From Passengers	\$140,172 93
" Freight	146,691 90
" Mails, &c.	4,508 49

Total	\$291,373 32
Expenses	117,871 02

	\$173,502 30
Interest on debt	27,516 95

For Dividend Fund \$145,985 35

This road extends from Springfield, through Urbana, West Liberty, Bellefontaine, Huntsville, Richland, Bellecentre, Kenton, Patterson, Carey, Oregon, Tiffin Republic, Lodi and Bellevue, to Sandusky City, a distance of 134 miles. It has also a branch to Finley, fifteen and three-quarter miles, and an extension to Dayton, twenty-three and three-quarter miles, making 173 1/2 miles.

Albany and Schenectady Railroad.—The directors of this Company have to-day declared a dividend of 3 1/2 per cent. out of the earnings of the six months ending 31st inst.

The affairs of the company, as shown by the statement prepared for the Board, are in a very flourishing condition.

After paying the above dividend, there is left a surplus of over \$10,000 out of the the net earnings of the last six months, which has been carried to the revenue fund.

The gross earnings for six months, ending 31st inst.	\$113,155 41
For same period of last year	95,862 70

Increase, over 18 per cent. \$17,292 71

The earnings for the year ending 31st of January, 1851, are \$214,786 52

Expenses, interest, relaying, and re-grading 3 miles of track	\$129,278 63
Carried to new fund by previous vote of Board	5,000 00
	134,278 63

Making net earnings for the year \$80,507 89 which is an eighth per cent. on the capital stock, of which \$70,000 has been applied to dividends—\$10,000 of the remainder carried to the reserve fund, as also stated.

The hog traffic on the road in December, 18,356 hogs; weight, 3,913,267 lbs.

Ogdensburg Railroad.—The receipts on the Ogdensburg for the month of December, were \$16,531 13. The falling off is accounted for in fact from the non-completion of the Vermont and Canada road. There is, it is said, an abundance of freight at Rouse's Point, which is only waiting the completion of the above road to drive along the

great quantity of freight waiting to be forwarded to market.

Philadelphia, Wilmington and Baltimore Railroad.—The annual report of this road, made on the 30th of March, 1850, has been published. Heretofore the fiscal year has terminated with the 31st December, but in order to give more time to make up the various statements necessary to exhibit the operations of the road, to be submitted to the annual meeting of the stockholders, on the second Monday in January, the board adopted a resolution on March last, terminating the fiscal year on the 30th November. Annexed are the receipts of the road:

Passengers.....	\$406,535 89
Freight and express.....	56,741 19
Mail and rents.....	39,885 62
	\$503,161 20

The receipts of the New Castle line, from all sources, were..... 137,274 66

Total receipts.....**\$640,435 86**

The expenditures during the same period were on the Wilmington line—Transportation and maintenance of way.....\$198,475 60

General and miscellaneous

expenses..... 20,279 97

Interest accrued on all

debts..... 121,796 01

Due construction fund for

interest..... 14,175 00

New Castle line—

Expenses and tax on cap-

ital..... 98,339 50

Interest on debts..... 3,818 94

456,885 02

Less interest received.... 12,170 64

Total expenditures.....**\$444,714 38**

Surplus receipts.....**\$195,721 48**

Out of the surplus receipts two dividends have been paid during the year—one of $\frac{1}{4}$ per cent, and the other 2 per cent—amounting to \$135,885 75—leaving a balance of \$59,835 73, which, added to the balance on hand December 31, 1849, makes \$123,480 48. From this has been deducted \$69,269 28 carried to the renewal fund, which leaves for dividend 54,211 20 dollars.

The receipts of the company in December having been ascertained, the following comparative statement of the aggregate business during the past three years will prove interesting:

	Receipts.	Expenses and interest.
1848.....	639,192 22	468,364 21
1849.....	627,904 88	471,949 88
1850.....	687,700 27	482,000 00

Fall River Railroad.—The fifth annual report of the directors of this company states that the gross income from all sources, for the year ending Nov. 30th, 1850, was.....\$210,080 73

Total expenses..... 109,768 61

Leaving a balance of.....\$100,312 12

which has been used in diminishing the company's indebtedness, increasing construction account, and by an increase of the materials for working and repairing the road. The operations of the past year show an increase of earnings over the year 1849, of \$36,037 55, and a diminution of expenses of \$9,944 10. The reserved fund is \$26,712 77. The total cost of the road, on the 30th November, 1849, was \$1,152,167 01, from which deduct the amount of the past year's earnings credited by order of the directors, \$84,000, and the balance, \$1,068,167 01, is the cost of road and equipments reported to the legislature the present year.

Saratoga and Washington Railroad.—The following are the receipts of this road for the last two years:

	1849.	1850.
Passengers.....	\$75,592 54	\$102,870 85
Freight.....	10,426 72	15,659 03
Other sources.....	3,292 83	5,112 96
Total.....	\$89,311 99	\$123,642 84
		89,311 99

Increase.....\$34,330 85

A line having been perfected between Whitehall and Rutland, where it unites with the Boston railroad, and the Saratoga and Schenectady road having been re-laid, the respective companies are about establishing daily passenger and freight trains between Schenectady and Boston. Lines are also to be established between Burlington and New York, via the Saratoga and Washington railroad, which shall enable passengers to reach each place daily. These arrangements will very much augment the business of the road.

Georgia Railroad.—Statement of the earnings of the Georgia railroad in the month of December, 1849 and 1850.

	Passengers.	Freight, mail, etc.	Total.
1850....	\$22,740 70	\$52,509 78	\$75,250 48
1849....	18,063 85	42,195 87	61,259 72

Increase 4,676 85 9,313 91 13,990 76

Columbia and Philadelphia Railroad.—The following shows the amount of the receipts and expenses of this road for the past year.

RECEIPTS.	
Amount of railway tolls, as per report of collectors.....	\$303,111 65
Do. motive power do. do.....	335,177 60
Total.....	\$637,289 25

EXPENSES.

For repairs of road from Dec. 1, 1849, to Nov. 30, 1850, including all debts due..... 71,466 39

For motive power expenses, from Dec. 1, 1849, to Nov. 30, 1850, including all the debts due..... 201,810 83

273,277 22

\$365,012 03

Add price paid for one locomotive included in above motive expenses..... 8,200 00

Total..... 373,212 03

Deduct pay of collectors, weighmasters and cargo inspectors, etc., who receive their pay at the treasury..... 10,316 58

Net profits of the road.....\$362,895 45

or over nine per cent. on \$4,000,000, the original cost of the road and machinery.

Massachusetts.

Connecticut River Railroad.—The directors of this company for the current year, chosen at a late meeting of the stockholders, are, James K. Mills, Samuel Henshaw, Ignatius Sargeant, Lemuel Pope, and Gorham Brooks, Boston; H. W. Clapp, Greenfield; C. W. Chapin, Springfield; E. G. Howe, of Hartford, and C. E. Forbes of Northampton.

The following resolution was adopted by the meeting in relation to the Ashuelot railroad:

Voted, That the directors of this company be, and they are hereby authorized to adopt, any and all such measures in relation to the present contract, and enter into any and all such other further contracts, undertakings and agreements, with the Ashuelot railroad company, in relation to their railroad from the north line of Massachusetts to Keene, N. H., as they may deem expedient.

The directors have elected Chester W. Chapin,

of Springfield, president. A dividend of 4 per cent has been declared on the preferred stock of the company, payable on the 25th instast.

Fall River Railroad Company.—Directors for the ensuing year: Nath'l B. Borden, Rich'd Borden, and Jefferson Borden, of Fall river; Joseph S. Tiltinghast, of New Bedford; Nahum Stetson, of Bridgewater; Peter H. Pierce, of Middleborough; Royal Turner, of Randolph; C. C. Gilbert and Robert Waterston, of Boston.

Virginia.

Orange and Alexandria Railroad.—The Alexandria Gazette says, that the Orange and Alexandria railroad company have contracted, on favorable terms, to have the greater part of the machinery and equipment already ordered for their road, built by Messrs. Smith & Perkins, in that town, under the superintendence of Mr. Thatcher Perkins. The position of Mr. Perkins, as master of machinery on the Baltimore and Ohio railroad, with which he has been connected since the year 1837, is well known; and his reputation as a builder of locomotives is second to none in this country.

Canal Tolls upon the Railroads from Albany to Buffalo.

Below we give a memorial to the Legislature of this State, which is now circulating for signatures, for the removal of the tolls for the transportation of merchandise imposed upon the line of railroad from Buffalo to Albany, following the general route of the Erie Canal. We have often spoken of the importance and impolicy of this restriction. As a matter of economy, it is bad policy to attempt by legislation to confine the business between the lakes and the Hudson to the canal, simply for the purpose of keeping up its revenues. It is cheaper in the end to raise by direct taxation, any deficit, than to raise it in this roundabout and expensive way. It is whipping the Devil round the post, and getting additional pains for increased labor.

Another great reason for the removal of this burden, is the fact that the Erie and Ogdensburg roads, which are equally the rivals of the canal, are exempt from it. Let equal justice be meted out to all. If one line is taxed, let all be taxed. If any one free, all should be equally so. To allow the Erie the right of free carriage from Lake Erie to tide water, and refuse it to others is gross injustice, which we hope to see corrected at the present session of the Legislature.

The memorial of the subscribers, inhabitants of the county of * respectfully show that their attention has lately been called to the subject of tolls required by the State for the transportation of property on the central line of railway in our State. These tolls we find to be a charge on the property so carried. They amount to about one-fourth of the rates charged by the railway company. If they were not exacted by the State, we are assured that the price of transportation by railroad would be so much reduced. There is no difference in principle whether the State charges tolls on the railroad or on property carried in sleighs or wagons. The railroad company does not pay them, but they are taken from the pockets of the farmers and producers. This is taking a portion of the profits from the farmer without any equivalent, and without any sound reason to justify it.

We may ask why is property sent by railroad? Not, surely, for the benefit of the railroad company, but for that of the owner of the property. He chooses to send his property that way, because he considers it best for him. Why should he not have his choice? A law that should compel him to send all his property to Albany when he might think it best to send it to Troy, would be scarcely more unfair.

There is another aspect to this matter.—Property is carried upon the Erie railroad without toll. Why should there be this distinction? If there

was any reason for tolls on either, we submit that at least there may be found some reason why they should not be imposed on the Erie railroad instead of on the Central line. The State has contributed a large sum of money towards the construction of the former, and is now paying annually a large sum in the shape of interest for that contribution. There are no tolls imposed on the transportation of property on the Northern railroad, now completed from Ogdensburg to Lake Champlain. These differences should not exist. If it is right for the State to require tolls, then they should be imposed on all railroads. It is not right to discriminate and say one shall pay tolls and another go free. This principle, carried out, would soon be seen to be so wrong by the whole people as to produce an early remedy. It is discriminating between different portions of the country. It is taxing the property in one section of the country and allowing that of other sections to go free. This system will soon operate greatly to the injury of the towns along the central line. It will deprive them of the trade of such portions of farming country as may be influenced by reason of these discriminations to take property to lines free of toll. It is practically asserting the right to a monopoly of transportation in the State. It is depriving the country of the benefit of competition.

There is much misapprehension upon this subject in another view of it. These railroads, practically, belong to the people. They are authorized and made for public use: they would be worthless but for that use. No company can make and use a railroad in a private manner; the benefits which the public have in them is the cheapened and expedited transportation. To impose tolls to limit their capacity for usefulness, to weaken them in the very way in which they can be most useful. This, surely, cannot be the view which practical thoughtful men would entertain. It is not a question in which the railroad company is concerned half so much as the people. What would the fresh pork be worth in the western countries at this time if it could not be carried off by the railroad? Probably not near as much as now; perhaps not half. Suppose it increases the business upon the railroads; it will, therefore, enable them to do all their business at a lower rate. It will lead to a reduction in the price charged for carrying passengers; the tendency in every respect is to benefit the people, and we cannot suppose that the legislature, when this matter is fairly considered, will continue the imposition of these tolls.

The only reason urged for them is, that the State is in debt for canals, and the debt must be paid. There will be an abundant business for the canals; that debt will be paid under the present policy. It is seen that the tolls on the railroads are mainly paid in the winter, when the canals are closed; this shows that the canals can support themselves, and that the great bulk of transportation will always be upon them. The canal can discharge a boat with its hundred tons into the basin at Albany every ten or fifteen minutes, and a like quantity may leave there in the same time. This is so far beyond the capacity of the railroad as forever to secure the canal in its power and ascendancy; this policy is no where else pursued that we are aware of; it is always considered the proper exercise of government to cheapen transportation wherever it is practicable to do so, to increase production, and to encourage industry. The imposition of these tolls, so entirely unnecessary, is the opposite of all these; they may be so increased as to amount to a prohibition; they may be taken off, and then the reward of industry and the profit of production is increased to the farmer.

We ask the attention of the legislature to this matter, and that it may be carefully examined, and then we have full confidence that it will be found that these tolls are all wrong and unnecessary and their farther continuance will be dispensed with.

Pennsylvania.

York and Cumberland Railroad.—The annual meeting of this company was held at York, Penn., on the 9th inst. The following is a statement of the receipts of the company from the commencement of the work of construction, viz.:

From stockholders residing in Maryland, the sum of.....	\$368,180 06
From stockholders residing in Pennsylvania	24,567 00
From proceeds of sale of bonds of the company, payable in '70	130,397 02
Miscellaneous sources	973 23
	—\$524,117 31

DISBURSEMENTS.

The disbursements during the progress of the work have been as follows:

Amount paid Gondar, Burke & Co., under the contract with them for constructing the road.....	\$421,274 87
Amount paid for damages and for right of way.....	43,071 97
Am't paid to the York Haven & Harrisburg Bridge turnpike rd Comp'y, for release of damages, & for surrender of charter	8,000 00
Amount paid for real estate for depots, &c.	10,531 87
Am't p'd J. M. Goldsborough, ch'f engr'r, & engineer corps..	17,440 02
Amount paid officers.	6,226 84
Miscellaneous items.	17,572 04
	—\$524,117 31

AVAILABLE MEANS.

The amount yet available, as applicable to the completion of the road, and placing it in good working order, may be stated as follows:

From proceeds of sales of bonds yet in hand of the original issue of \$175,000.....	\$28,800 00
From st'k subscrip's chiefly in Baltimore	17,200 00
From st'k to be issued to the contractors, as part of the consideration for constructing the road.....	100,000 00

The bonds of this company, payable 20 yrs from date, secured by a 2nd m'tgage, & to be issued to the contractors, under compromise agreement of Jan. 7, '51, for pay't in full, and for release of all claims and demands whatever against this comp'y.....

25,000 00 —\$171,000 00

LIABILITIES.

The present liabilities of the company, and the sums estimated as yet necessary for the completion of the work are stated as follows:

Cash balance due the contractors.....	\$3,725 13
Amount of stock to be issued to ditto.....	100,000 00
Amount estimated as yet to pay for damages & right of way	2,000 00
Amount estimated as necessary to complete the road.....	30,000 00
Am't to be p'd Gondar, Burke & Co. in the bonds of the comp'y	25,000 00
Miscellaneous items.	2,798 37
Showing an estimated balance of available means after completing the road	\$9,476 50
	—\$171,000 00

Exhibiting the whole cost of this important work, when completed for use, in cash, and stock, and bonds passed to the contractors, at the sum of

\$685,641 81. The bonds, to the amount of \$25,000, made payable in twenty years from date, which constitute an item in the statement of available means, and of liabilities, are to be issued to Messrs. Gondar, Burke & Co., under the agreement of compromise with those contractors, dated Jan. 7, 1851. The performance of a large amount of extra work on the part of the contractors, and the justice of their claim for additional compensation, was admitted. The report states that—

"By the terms of the compromise, the road passes immediately into the possession of the company. And it may, and will, without doubt, be put into working order and operation, and be rendered subsidiary to the requirements of a large and growing commerce, at a much earlier day, and at less comparative expense, by the company, under this arrangement, than it could have been by the contractors, under the original contract of May, 1849. On this point there cannot be a question. And it is therefore apparent that the business wants of the country—the interests of trade and travel, not less than the best interests of the company, and indeed of both the contracting parties—were all taken into view or promoted by this arrangement."

The report states, that for the present the road is to be stocked and worked by the Cumberland Talley railroad.

The above road, forming, in connection with the Baltimore and Susquehanna railroad, a direct line from Baltimore to Harrisburgh, Penn., and thence connecting with the public works of the latter State, and, through them, with the Western railroad, will become an important thoroughfare for the general business of the country. Baltimore looks to the Pennsylvania railroad as an important avenue west, by means of which she hopes to add largely to her present flourishing business. In reference to the future prospects of this work, we copy the following from the report:

A word in conclusion, in reference to the prospects and promised usefulness of this road, when completed, to the trade and travel of the country, and of the commercial interests of every section through which it passes, or whose communications are improved, facilitated and shortened by the connection. It is not proposed to deal in extravagant or sanguine calculations, as to the beneficial results of this work of improvement, now happily on the eve of completion, and so near to the test and ordeal of experience. But this may well be said—and to reasonable minds conversant with the subject, it is enough—that nothing has heretofore occurred, or now exists, of a character to undermine the confidence felt by the mass of the stockholders, in the value and usefulness of this road as an avenue of commerce, when they undertook to furnish the means for its construction. It is believed on the other hand, that in its completion every just anticipation of that day will be fully realized.

Indiana.

Second Annual Report of the Board of Directors of the Terre Haute and Richmond Railroad Company.—In our first annual report, of 5th January last, we gave a full statement of the progress and condition of the road up to that time. It is very gratifying to us to inform you, that its progress during the last season has equalled our expectations, and that we can see nothing now to prevent the completion of the whole line to Indianapolis by the 1st of December next. The grading of the 20 miles mentioned in our last report, was put under contract at 2½ per cent. below the engineer's estimate, 26½ per cent. payable in the stock of the company. About two-thirds of all the grading is completed and received from the contractors, and the remainder is mostly light work—some sections nearly finished. Several miles on each end of the line being ready for the superstructure, there will be no delay in commencing to lay it down early in the spring.

The masonry for the bridge over Eel river is finished, and for that at White river so far advanced

as to be entirely secure from injury by high water. The superstructures for both bridges are under contract, and will be completed so as not to retard the finish of the work.

A contract for iron of the most approved pattern of heavy T rail, weighing 60 pounds to the yard, has been made on very favorable terms for the company, deliverable at New Orleans in season to be brought up the river during the spring freshets. The locomotives requisite for constructing and running the road the first season are also contracted for, and will be finished by the time we are ready to use them.

The right of way has mostly been secured; and for the balance we hope to settle in a very short time. The whole expenses for this item will not exceed \$5,500.

Our receipts to this date are.....\$235,312 36
And expenditures are.....231,167 21

Leaving a balance of\$4,145 15

The engineer's estimate for preparing the road for the iron, including right of way, superstructures, depots, machine shops, water stations, joint union track at Indianapolis, and incidental expenses, is \$498,451 52. Our stock subscription (which during the past season has been steadily increasing,) amounts to \$292,950 00. The amount paid and payable in stock on work under contract is \$80,782 71, and on work yet to be put under contract, such as depots, superstructures, &c., we may safely calculate that a further amount of \$35,727 00, will be taken in stock. To which add a loan of \$50,000 00, made by the company, payable 1st of January, 1855—making the aggregate resources of the company \$459,459 71, which deducted from the engineer's estimate as above, leaves a deficiency to prepare the road for the iron, of \$38,991 81, to be made up by a further subscription of stock. When this deficiency is made up, we shall have no difficulty in negotiating our bonds at a fair rate, to complete and stock the line with the necessary cars and machinery.

Our charter is liberal and perpetual. The line of our road is central, and so situated that it can never have a rival. It runs through a tier of the most productive counties in the State, and in the immediate vicinity of inexhaustible beds of bituminous coal. An extensive local business will be certain. Examine a map of the country, and view the connection of this road at Indianapolis, with every leading road east between the lakes and Ohio river. The three main lines to New York, Philadelphia, and Baltimore, are located, and only about one hundred miles on each not yet under contract. All these will probably be finished in two years from this time. Twenty-eight miles of the Bellefontaine is in successful operation, and under its enterprising president will be carried rapidly to completion. The Peru road, centering at Indianapolis, is also efficiently progressing, 20 miles of the same being now just finished. Two separate lines of road, one by way of Hamilton, Ohio, and one by way of Lawrenceburgh, Ind., are now in course of construction from Cincinnati to Indianapolis. Then there is the Madison road, with its immense business, and the Jeffersonville road, intersecting the Madison at Columbus—all accumulating together their westward bound freight and travel at Indianapolis, and pouring the same inevitably upon this line of road.

Two companies have organized at Illinois under the general law of that State, for the construction of roads from Terre Haute to St. Louis and Alton. Along both lines large amounts of stock have been taken, and it is not to be doubted, that one or both will be commenced the ensuing spring, and completed in three years. The lines which are to branch from Terre Haute to Evansville, St. Louis, Alton and Springfield—thence to Hannibal and Quincy, (those to the west crossing the great central railroad of Illinois, from Cairo to Chicago,) will make from all those points the most direct route of travel through Terre Haute and Indianapolis to the eastern cities. From New York to Terre Haute, by Philadelphia and the central line through Pennsylvania, Ohio and Indiana, the distance is 906 miles, and at the moderate speed of 25 miles an hour, it can be accomplished in 36 hours 15 minutes; and at 30 miles per hour—the usual rate of railroad travel on many of the eastern lines

—in only 30 hours, 12 minutes. From Terre Haute to St. Louis is 165 miles, and from the latter city to New York, by the same line and rate, the requisite time is 35 hours and 42 minutes.

The day is not far distant, when this great line of travel will be extended east to Halifax or the shores of Nova Scotia, and west to the bay of San Francisco, making one continuous line of railway of about 4467 miles, ultimately to become the highway of nations across this continent. The distance from London to San Francisco is about 6913 miles, and when the great works so contemplated shall be accomplished, this great distance by railroad through England and Ireland, and by ocean steamers to Nova Scotia, and thence through this great central line to San Francisco, can be overcome in 11 or 12 days.

In view of these astonishing facts, may we not confidently expect that the public interest along the line of our road will be aroused, and that not only the small portion of stock necessary to prepare the same for the iron will be soon taken, but a much larger amount. As an investment of capital, none can be more safe and permanent, and none can promise a richer return, either in dividends, or in the benefits resulting from an increase in all kinds of business, and an enhancement in value of all kinds of property.

We regret the necessity that any part of this valuable stock should fall into the hands of non-resident owners, who will semi-annually withdraw its proceeds from the State, and spend the same in enterprise and pleasure abroad.

The people interested in the construction of the road are able to take and retain the whole capital stock, and we earnestly urge that now while it is needed, and while there is opportunity, they take hold and secure the same to themselves and the country.

Alabama.

Selma and Tennessee Railroad.—We learn from the Reporter that the people of Benton county have subscribed within the last sixty days for \$100,000 additional to the capital stock of the Alabama and Tennessee river railroad—all reliable stock. Every thing connected with this enterprise looks cheering. On the southern end of the road, Messrs. Riddle & Co. have a considerable force now at work grading, &c., and are prosecuting their contract with that energy which distinguishes them. Beyond the Coosa river, arrangements are making to put speedily under contract the whole line from Talladega to Gadsden, and a corps of engineers, it is understood, is now en route for that purpose.

Smith's Railroad Alarm.

Mr. Charles A. Smith, of Batavia, says the Rochester Democrat, has invented an apparatus for ringing an alarm bell upon railroads, by which an alarm can be given at a station, a road or crossing, when the cars are a mile distant from the point. By this means collisions may be prevented at places where two opposite trains cannot be seen by each other until too late to check the speed. This is effected by placing a spring so that the wheels of the cars pass over it. To this spring is attached a wire which may be extended to any distance upon poles, like telegraph wires, the opposite end from the spring being attached to a bell, gives the alarm. It has been examined by many gentlemen connected with railroads, who are much pleased with its operations. The patentees are about to put one of the machines in operation upon the Rochester and Buffalo road. It is simple and effectual, and will no doubt come into extensive use.

From the London Mechanics' Magazine, Sept. 1850.

English and American Steamship Building. Ocean Navigation.—The Cunard and Collins Lines.

Sir—The publication of certain facts and drawings, in Nos. 1398 and 1408, relative to the rival steamships of the Cunard and Collins transatlantic lines, induce me to address you as heretofore, under the same signature, which, though anonymous, shall, I trust, be supported by facts and figures sufficient to neutralize that disadvantage.

And I may state my reasons for this course. I do not wish to make your pages a vehicle for personal renown or professional advancement. I shall

rigidly adhere to the truth, to the best of my belief, and utterly repudiate any personal allusions or antipathies. I should prefer to remain unknown; but I authorize you to give up my name to any one who, in your judgment, may require it for proper purposes.

The subject of my remarks, and to which I earnestly desire to draw the attention of your readers, of the public, and particularly of English engineers, is the merits and demerits of the two systems of engineering adopted in the vessels of the Cunard line, which have been built and manufactured in this country; and in those of Collins' line, the production of our brethren in the United States. Both are excellent in their way, and each, in the absence of the other, would have been—indeed has been—considered perfection; but competition, and a very proper and laudable rivalry, has shown which of them it is best and most desirable to adopt in extending Atlantic steam navigation.

They have shown this to a certain extent, but no more. Neither of these lines of steamers (as it respects their machinery) have developed the highest state of engineering knowledge now and for some time past existing in this country. Humiliating as it may be to British engineers to acknowledge that they are beaten, although by their next of kin, it is tolerably certain that we shall have to make that admission; and your intelligent correspondent in No. 1398 prophesies this: to the best of my belief this will be so, has been so, and it is capable of very easy proof why it should be so.

But, that it could not have been otherwise, I utterly deny. I assert, that means are known to us by which both these systems (and they differ but in small degree) may be immeasurably excelled, at a much cheaper outlay, diminished cost for repairs, both in engines and ships, and a far more efficient result in all respects; and that this is not only practicable, but has really become an acknowledged fact, it shall be my object to establish.

Steam engines are of various constructions and mechanical arrangements; in principle, they are as left to us by the immortal Watt. Modern necessities and ingenuity have introduced many deviations from his plans, and, as might be expected from extended practice and experience, with good result. Mr. Watt left us the "beam" or "side lever" engine—excellent in its way, and suitable to his time (it has many votaries even now); others have introduced the "direct engine;" others, tubular boilers in place of flue boilers; others, feathering or eccentric paddle wheels, in lieu of the common radial wheel.

Cunard's vessels possess none of these improvements; they have beam engines, flue boilers, and radial paddle wheels.

Collins' vessels have beam engines and radial paddle wheels; but the boilers are partly tubular, and alone are the cause of their superiority over their competitors. This has been so ably shown by your correspondent already quoted, in No. 1398, page 402, that I do not think it either necessary or just to occupy your space with further proof than to observe, that the great evaporative power of the boilers, and the extended grate surface, (a capacity to consume fuel with economy,) must be conclusive to the minds of all professional men, and that, all other things being the same, we must succumb. We must "go-ahead" again by merely availing ourselves of the means we possess, and we assuredly shall be triumphant in a superlative degree.

This is a matter of grave import for the consideration of those whose pecuniary interests are connected with the Cunard line of steamers; it is still more of importance to another great and flourishing company, of whom I shall speak hereafter, but whose infatuation and error is so utterly unaccountable, when we reflect that they ought to be—must be—fully aware of the great advantages they might have secured, by a more able and discriminating course, which, if taken, would have been the means of placing them at the head of the steam navigation of the world. It will be their ill-fortune to see the great mistake they have made in the spring of 1850.

It must be evident to all men, that small space occupied by steam machinery on board ship, and its minimum weight, compatible with strength and efficiency, must be that which is to be desired. All modern improvement has tended to this end;

indeed, diminished weight of machinery is really power, for thereby you decrease the immersion of your ship, lessen her resistance, and increase her velocity, with a greater capability to carry her cargo and make a voyage remunerative, without additional outlay in fuel.

To do this to the greatest extent, there can be no doubt that we must adopt *oscillating or vibrating steam engines, tubular* or other improved boilers, and eccentric paddle wheels.

I have already remarked, that Cunard's vessels are fitted with the ordinary main lever engines, common flue boilers, and radial paddle wheels; the workmanship of the whole is excellent—in fact, it is a splendid piece of mechanism, and of its kind perfect. It has also been noticed, that Collins' vessels differ only in the construction of the boilers, which are partly tubular; and this, though, but a small instalment of our knowledge, is still sufficient to establish a superiority, and therefore powerfully supports the position I have taken, and shall now proceed to make evident and patent to your readers.

The subject may be divided into the three portions already stated; namely, engines, boilers and paddle wheels: and these I will take *seriatim*.

I. *Beam engines* are the most ponderous of all constructions now extant. I have before me a list of about 150 pairs of these machines, which, with common flue boilers and water, radial paddle wheels, and coal boxes, average about 23 cwt. per nominal horse power. The weights may be taken as follows, in decimal parts of a ton, and may be useful to many of your readers:

Engines alone.....	= .515
Paddle wheels.....	.092
Boiler and apparatus.....	.310
Water in ditto.....	.207
Coal bunkers.....	.031 = 1.155

or just 23 cwt. per nominal horse power. I believe this to be an average weight of beam engines, &c., as detailed; but if report be true, the machinery of the Cunard steamers weighs even still more; it is said to be 1000 tons! which, for 800 horse power, is just 25 cwt. per nominal horse!

The superiority of Collins' vessels does not arise from *lighter* machinery, but from the greatly enlarged evaporative power of the boilers, without increase either in weight or space.

Beam engines are very expensive to manufacture. Oscillating engines, at £40 per horse, (boilers and paddle wheels being the same,) is a more lucrative order than beam engines at £50 per horse—which will appear evident, when we compare the quantity of *material* in the two kinds of engines. They are more expensive in repairs, use more oil and tallow from the number of the parts, are subject to transverse strains, requiring an enormously strong and heavy bed-plate to counteract the pressure upon the main gudgeon, which has to resist *double* the force of the steam upon the piston.

It is also dangerous to work beam engines under heavy pressures of steam, unless the motive parts are made more than usually heavy and strong—generally 2½ times the nominal power is the usual practice. I know one or two instances where three times has been obtained, but accidents have resulted, to which they will always be liable; but make the connections as strong and heavy as you please, these engines can never contend in this respect with the direct or oscillating engine.

The space occupied in the ship is also of paramount importance. Beam engines of 800 horse power will require not less than 35 to 36 feet in the most important part of the vessel. Oscillating engines of the same *nominal* horse power will have ample room in 14 or 15 feet, and they require less than one-half the timber foundation or "sleepers," to erect them upon.

The oscillating engine is self-contained; all its strains are direct—not doubled (as in the main gudgeons of beam engines); a great number of parts are banished, and simplicity in its integrity duly obtained; the centre of gravity of the whole is lower, and therefore tending to increase the stability of the ship; the wear and tear is less, and, when requiring repair, the cost is small from the few working parts. It may be made to bear almost any pressure by a slight increase in the crank shafts and piston rods. It goes at once to its work, which it does with vigor and certitude—indicator

diagrams fully proving a proper effect for every atom of steam that is used.

And, lastly, the *weight* of the oscillating engine is just *one-half* that of the beam engine. A pair of oscillating engines, properly constructed, (for we have quacks in engineering as well as in medicine,) will weigh no more than one beam engine.

Taking an average of upwards of 3000 horse power which I have designed, the engines alone weigh just .253 of a ton per *nominal* horse, or say 5 cwt. only.

Here, then, is a great secret, not so fully known as it should be; and I shall be amply rewarded if I succeed in convincing those of its truth who are so deeply and pecuniarily interested in this question.

It may be as well to insert here the weight of oscillating engines, tubular boilers, and mechanical wheels, which are as follows:

Oscillating engines.....	= .253
Patent paddle wheels.....	.110
Tubular boilers, having 16 square feet of absorbent surface per horse power and apparatus.....	.215
Water in the boilers.....	.100
Coal boxes.....	.030 = .708

or just 14 cwt. per nominal horse! and this is not supposition, but what the writer has done with 3000 horse power, and what has been done by Penn for several years past in some of the finest of our men of war. The Retribution may be quoted, as one instance of the advantages to be obtained.

To be continued.

The Iron Trade of Glasgow.

Subjoined is the yearly statement of the iron trade of Glasgow, from the circular of Hugh Ferguson, Esq.

The iron trade of this district has this year been marked by circumstances which have excited a good deal of attention in the mercantile world; and, in presenting my customary annual return, I have to remark that the details in the accompanying schedule, having been got up with the strictest regard to correctness, will bear the most searching examination. The market opened in January last somewhat active, with pig iron 47s 6d, and bars £5 10s, a £5 15s, and continued improving till the beginning of February, when the value of the former declined, and by the 1st of March had receded to 44s, from which it varied little from May up to the end of June; the price poised 46s a 46s 6d. From July till the middle of December, the price ranged from 44s a 42s. Comparing the results with those of 1849, they show the production of manufactured iron to be nearly the same in both years, and a decrease of 62,000 tons in that of pig iron in 1850, which is fully accounted for by the irregularity in the working of the furnaces elsewhere referred to. The shipments of pig iron have also fallen short of 1849 by 18,607 tons foreign, and 31,860 tons coastwise. In January, several brokers and extensive local holders closed an agreement to deposit in a yard a very large quantity of pig iron, which they at once commenced to buy and remove accordingly. Calculating on the co-operation of the English dealers, who formerly made this staple no inconsiderable part of their business, and on the market being influenced by their combined operations, as well as in a great measure under their control, the originators had the satisfaction of seeing the price rise to 50s a 50s 6d, by the first week in February, when, not having been joined by the English houses as they expected, the market gave way, and the re-action was more speedy and effectual than the previous advance, as, at the end of March, the price stood 43s to 43s 6d, and at the date in question, the stock had increased about 40,000. By latest advices from America, no measures had been taken to alter her tariff, and should no change take place in this respect, a good demand may be expected from that quarter: and the contrary, should her legislature impose a high specific duty on imported foreign iron. Our home demand is good as a whole, and the requirements of the country next year will in all probability equal, if not exceed, those of 1850. Did the continent of Europe present the same phases, the hopes and prospects of the iron trade would be more encouraging than at any time during the last two years;

and all interests concerned must concur in the desire that its revival may not be far distant. The market has been well supported these two weeks, both pig and manufactured iron being in better request; the former I quote 44s 6d, net cash, f. o.—by bars. £5 7s 6d a £5 12s 6d, and plates, £7 10s a £8 5s, less 4 per cent. discount for cash. For rails there is more inquiry, and good orders command £5 net cash: this price, however, is not considered sufficiently high to induce very extensive production in this district.

	1850.	1849.	1848.	1847.	1846.
United States	57,509	94,212	90,325	44,993	13,918
Average pr's	£244	£261	£245	£350	£3118

Census of Connecticut.

The following is the population of this State by the late census compared with that of 1840:

	1840.	1850.
Hartford County.....	55,680	70,015
New Haven ".....	48,619	65,841
New London.....	44,463	51,826
Fairfield.....	49,915	59,814
Windham.....	28,080	31,408
Litchfield.....	40,440	45,286
Middlesex.....	24,878	27,677
Tolland.....	17,908	20,079
	310,015	371,982

The following shows the population for every 10 years since 1790:

Population of the State..	1790	238,146.
".....	1800	251,002 gain 12,856
".....	1810	262,042 gain 1,104
".....	1820	275,248 gain 13,206
".....	1830	297,711 gain 22,663
".....	1840	310,015 gain 12,304
".....	1850	371,982 gain 61,967

Below we give the increase and population of some of the leading towns since 1810:

	1810.	1820.	1830.	1840.	1850.
Hartford...	6,003	6,901	9,789	12,798	17,966
New-Haven	6,967	8,327	10,678	14,390	22,529
N-London.	3,238	3,330	4,356	5,523	9,009
Norwich.	3,528	3,634	5,169	7,239	10,261
Waterbury.	2,874	2,882	3,070	3,668	5,137
Stonington.	3,043	3,056	3,401	3,893	5,434
Enfield.	1,846	2,005	2,129	2,648	4,470
Greenwich.	3,533	3,790	3,805	3,921	5,040
Windham.	2,416	2,489	2,812	3,382	4,636
Killingly.	3,512	2,803	3,261	3,685	4,545
N.-Milford.	3,537	3,830	3,979	3,974	4,508
Stamford.	4,440	3,284	3,795	3,516	5,004
Middletown.	5,382	6,479	6,886	7,210	8,791
Norwalk.	2,983	3,004	3,798	3,863	4,751
Danbury.	3,606	3,873	4,325	4,504	5,964
Bridgeport.	—	—	2,803	4,570	7,558
Litchfield.	4,739	4,610	4,458	4,038	3,957
Thompson.	2,877	2,928	3,388	3,535	4,728

New Electro Chemical Telegraph.—Recent and wonderful improvement in the transmission of messages by the electro telegraph, have recently been exhibited in France. The instrument is the invention of Mr. Bain, is called an *electro-chemical* telegraph, and conveys its message in the *very handwriting of the person who sends them!* It claims to have great advantage over the electro-magnetic telegraph in general use. While the latter transmits dispatches at an average rate of eight words per minute for each conducting wire, this new invention can transmit from 250 to 400 words per minute.

A committee of the French legislative assembly, at the head of which was the celebrated astronomer Le Verrier, was appointed to investigate the merits of this invention. They caused the experiments to be repeated in their presence. A message of several thousand words was transmitted to Lille and back, along a single wire (the wire being united at Lille so as to carry back the message,) at the rate of about 1500 letters, or nearly 400 telegraphic words per minute. The committee reported favorably of the project, and the government ordered a set of apparatus to be constructed, to be placed in the first instance on the line between Paris and Calais.

This line was completed in the early part of last month, and their performance was witnessed by a correspondent of a London journal, from whose

account of the discovery we gather our information. His own dispatch, which would occupy about a column of the Atlas, was transmitted and written by the apparatus in his presence at a rate of 1200 letters per minute. The characters were perfectly distinct and legible, and the dispatch was read from them also in his presence.—*Boston Atlas.*

Rochester Flour Trade.—The Rochester Daily Democrat publishes their usual annual statement of the flour trade of that city, from which we take the following:—

During the year past, some 50,000 barrels have been brought here by the Western railroad, the greater portion of which was shipped eastward by canal. There were 44,443 barrels left here by both canals.

The following is the number of barrels shipped east on the Erie canal for four seasons:

	1850.	1849.	1848.	1847.
April.....	38,039	.....	.....	.....
May.....	56,641	89,508	93,279	127,039
June.....	35,665	54,081	67,585	74,932
July.....	33,301	40,833	54,958	67,390
August.....	57,445	56,792	67,753	61,965
Sept.....	88,196	77,186	92,396	74,473
October.....	94,348	153,004	98,919	111,030
November.....	127,291	124,411	108,865	103,712
December.....	8,447	1,042	651	.....

552,729 570,757 500,326 631,574

Quantities shipped for a series of years:—

	bbls.	bbls.
1844.....	400,388	1847.....631,574
1845.....	518,318	1848.....500,326
1846.....	540,232	1849.....570,757
		1850.....552,729

During the suspension of navigation, last year, Auburn and Rochester railroad carried forward 23,279 barrels of flour, and since the close have taken nearly 6000 barrels. This is considerably less than the amount transported by railroad the year previous, when 59,137 barrels were entered for shipment. It is said, that flour has been sent via Ogdensburg from here, but if so, the amount must be small.

We have 22 mills, with 109 runs of stone; taking custom mills into account. Two of these are of a small class, but their owners claim that a run of these small stones can grind a per diem quantity equal to that turned out by a single run of the larger class. Taking this for granted, and calculating the daily product at 40 barrels for each run of stones, (they can grind 60 barrels whenever necessary,) and the amount of wheat required for the use of the mills is 21,800 bushels. The mills are supplied from various sources, the most considerable quantity coming in by canal. The following statement exhibits the amount left here by both canals during the last season:—

	1850	Genesee Valley.	Erie.
April.....	9,680	.....	.....
May.....	47,876	.....	28,420
June.....	36,349	.....	13,385
July.....	33,263	.....	47,824
August.....	58,576	.....	122,277
September.....	50,187	.....	124,018
October.....	83,328	.....	149,162
November.....	104,915	.....	226,465
December.....	29,499	.....	50,735
		453,673	762,296

The following is the quantity left by both canals for a series of years:—

	1844.....	1848.....	1849.....	1850.....
1844.....	884,141	1,443,133	.....	.....
1845.....	1,169,281	1,426,436	.....	.....
1846.....	1,503,546	1,215,759	.....	.....
1847.....	1,778,116	.....	.....	.....

The Tonawanda railroad brought down about 125,000 bushels during the year. By vessels from American ports, there were received during the past season of navigation 28,835 bushels; A small amount of Canadian wheat was also taken for milling.

Granting that each barrel of flour requires five bushels of wheat, which is something above the average, and our mills have required 2,432,825

bushels to manufacture the amount of flour sent eastward from here directly. Taking out the amount left here by railroad, canal and lake vessels and we have 1,063,231 as the amount furnished from other quarters. This supply has come, no doubt, from the country immediately about us, and was brought in by farmers' wagons. The construction of plank roads from the city to different country towns, has undoubtedly caused a much greater amount of wheat to be brought in by teams than formerly; and the falling off in receipts by canal may be in a measure attributed to this.

The census returns show the product of this county, excepting Clarkson, to be 1,268,321 bushels. In 1845, the entire product amounted to 1,338,685. Adding Clarkson as it was in that year and the whole now amounts to 1,398,168. It will be quite equal to that and probably more.

It was estimated by a well-informed gentleman, that there were 250,000 bushels of wheat held by our millers at the close of navigation.

Population of the West.—Returns of the new census have been received at the Auditor's office in this city, for the entire district of Western Virginia, from which it appears there is an aggregate white population west of the Blue Ridge and Alleghany mountains, of 494,763; slaves, 63,234—total 558,472—being an increase of about 132,000 since the last census.—*Repub. Adv.*

These figures compare with those of the two preceding decades as follows:—

	1830.	1840.	1850.
Whites.....	318,645	371,570	494,763
Free blacks...	6,343	7,548	7,475
Slaves.....	53,437	53,737	63,234

1378,425 432,555 565,472

Showing an increase of 54,430 from 1830 to 1840, and an increase of 132,677 from 1840 to 1850—total in twenty years, 187,047.

CENSUS OF MICHIGAN.

United States Marshal's Office, Detroit,
December 31, 1850.

Transcript, showing the population of counties in the State of Michigan, in alphabetical order, for the years 1837, 1840, 1845, and 1850:—

	1837.	1840.	1845.	1850.
Allegany.....	1469	1783	3185	5043
Barry.....	512	1078	2603	5070
Berrien.....	4863	5011	7941	11417
Branch.....	4016	5715	9070	12472
Calhoun.....	7960	10599	15719	19165
Cass.....	5296	5710	8078	10907
Chippewa.....	366	534	1917	2147
Clinton.....	529	1614	3011	5102
Eaton.....	913	2379	4613	7057
Genesee.....	2754	4268	9266	12035
Hillsdale.....	4729	7240	11125	18395
Ingham.....	822	2498	5267	8634
Ionia.....	1023	1923	5004	8488
Jackson.....	8693	13130	16852	19432
Kalamazoo.....	6367	7380	10192	13179
Kent.....	2022	2587	6153	12018
Lapeer.....	2602	4265	5314	7026
Lenawee.....	14540	17889	23011	26374
Livingston.....	5029	7430	10789	13477
Mackinaw.....	664	923	1667	3598
Macomb.....	6892	8716	13509	15532
Monroe.....	10611	9923	13356	14702
Oakland.....	20163	23616	30288	31266
Ottawa.....	628	704	1438	6490
Sanilac.....	.....	.....	.....	2613
Saginaw.....	820	892	1518	2675
Shiawassee.....	1184	2103	3829	5233
St. Clair.....	3677	4606	7680	10607
St. Joseph.....	6337	7068	10097	12788
V. Buren.....	1272	1910	3743	5802
Wash.....	21817	23571	26979	28566
Wayne.....	23400	24173	32267	42760

174169 212257 304280 400000

* Counties not fully returned.

Pork Trade of the West.—Messrs Coons & Dolyns of Maysville, Ky. furnish what they claim to be a reliable statement of the pork trade of the west for the past year.

We have obtained from reliable information the following facts with regard to the hog crop this season, as compared with last, and as it will doubtless be interesting to some of your readers, we will thank you to publish it; the statement we know can be relied upon as correct, or as nearly so as it is possible to give it. If it varies from the true quantity, it will not be an over estimate of this year's deficiency:—

DEFICIENCY AS COMPARED WITH LAST SEASON.

Mississippi, Missouri, and Illinois rivers at least.....	head..300,000
Wabash and Northern Indiana.....	100,000
At the various packing points Cincinnati.....	35,000
At the various points below Cincinnati except Madison and Louisville.....	25,000
At Cincinnati, and as far out as Columbus.....	175,000
Southern Kentucky and Tennessee.....	50,000

Making a grand total of.....645,000

Hogs short.

At Louisville and Madison there is certainly no excess this season over last in pounds of meat—if there is in the number of hogs. No one, we presume, will doubt this position.

We continue the statement and reduce the hogs to pounds, and the result is about as follows:

The number of hogs slaughtered last year was 1,500,000 head, and average weight 218 lbs. Total weight 327,000,000 lbs.

We put the number this year at 1,000,000 (throwing off the 185,000 head) average weight 191 lbs. Making total weight.....lbs.....192,000,000 deficiency in lbs.....135,000,000 Yield of lard last season 29 lbs. per hog making.....43,500,000 This season 23½ lbs. per hog.....23,500,000

Deficit in weight of lard.....20,000,000

We are satisfied that an exact statement, if it could be ascertained, will make the deficiency greater than we have given it.

Specie in the Bank of England.—The following table shows the amount of silver and gold in the Bank of England at the dates specified:

Silver, on the 1st January, 1847	\$11,977,026
" " " 1848	6,533,236
" " " 1849	2,463,359
" " " 1850	1,343,823
" " Nov. 16, 1850 only	221,484
Gold, on the 1st January, 1849	\$57,193,819
" " " 1850	77,411,980

Thus showing that in three years and a half, the silver was reduced \$11,775,542, and the gold increased \$20,218,161.

Benefit of Railroads.—The Wheeling Gazette states that in 1840 the average assessed value of the lands in Marion county was \$2 50 per acre; and in 1850 it is \$9 50 per acre: showing an increase in the value of real estate of near four hundred per cent. This increase is almost wholly owing to the fact that the Baltimore and Ohio railroad is being made through the country.

Great as this result seems, it is only the effect upon a single article, while like benefits accrue to the farmers and consumers of goods for almost everything produced or consumed. And it is to this fact that Georgia owes, in a great degree, her present unparalleled prosperity, extending as it does throughout all the ramifications of business and society.

Head-rest for Railroad Car Seats.—Mr. Alonzo Isbell, of Norwalk, Conn., has invented and taken measures to secure a patent for a new improvement on carseats, which will be very useful and convenient to all who use it. The improvement consists in a moveable pad for the head to rest upon, which is made to be carried by any person, and can be attached to the back of any railroad car seat, &c., and raised or lowered to the proper height for the head, either to recline for ease, or to take a comfortable nap when travelling or other-

wise. The rest is a pad, which slides in a sheath (folded up) and having a ratchet cut on its rod, is held by a spring at any desirable height. It can also be permanently attached, but its convenient qualities lie in being portable, whereby it clasps on to the back of any car seat, for the benefit of all whom it may concern.

Commerce of the Lakes.

The following is a statement of the moneyed value of the exports and imports at the several ports on Lake Erie and the lakes above Erie, for the year 1848; also the amounts and value of the tonnage enrolled in the different collection districts on said lakes in 1849:—

Ports.	Imports.	Exports.	Imports.	Exports.
Lake Erie.				
Buffalo.....	22,143,484	37,996,658	60,140,062	
Silver Creek...	212,819	107,081	310,900	
Barcelona.....	317,789	121,394	439,183	
Dunkirk.....	903,341	486,395	1,398,734	
Erie.....	1,300,897	2,531,955	3,832,852	
Conneaut.....	389,050	210,405	599,450	
Ashtabula.....	307,757	421,987	729,664	
Fairport.....	343,658	450,850	794,508	
Cleveland.....	7,030,957	6,555,556	13,883,514	
Black River...	203,815	154,529	357,844	
Vermillion....	150,000	207,200	357,200	
Huron.....	489,807	790,931	1,260,089	
Sandusky.....	7,010,304	3,099,939	10,110,043	
Fremont.....	189,162	108,300	296,463	
Port Clinton...	38,278	21,755	63,733	
Kelley's Island.		11,679	11,679	
Toledo.....	7,852,021	5,263,464	13,115,486	
Monroe.....	1,050,915	812,105	1,863,021	
Brest.....		18,956	18,956	
Gibraltar.....		13,816	13,816	
Detroit.....	3,502,666	2,781,192	6,283,858	
Lake and River St. Clair.				
Algonac.....	13,495	198,763	212,257	
St. Clair.....	51,043	71,524	122,567	
Trenton.....	7,325	25,553	32,898	
Mount Clemens	81,000	181,790	291,790	
Lake Huron.				
Sault Ste Marie	151,134	340,800	491,934	
Mackinac.....	143,400	212,818	356,218	
Lake Michigan.				
Green Bay.....	151,537	80,830	232,367	
Manitowoc.....	49,129	13,719	62,848	
Sheboygan.....	517,600	12,191	583,991	
P't Washington	278,311	48,267	326,576	
Milwaukee.....	3,828,650	2,098,469	5,927,119	
Racine.....	1,452,750	650,950	2,108,700	
Southport.....	629,791	583,608	1,213,399	
Waukegan.....	69,081	283,107	352,188	
St. Josephs....	672,882	543,894	1,216,787	
Michigan City..	28,915	369,198	398,063	
Chicago.....	9,751,872	4,151,905	11,903,779	
Districts.	Tonnage.	Value.		
On Lake Erie.....	85,569,86-100	\$3,450,374		
Detroit.....	34,067,19-100	1,847,710		
Mackinac.....	1,919,77-100	75,000		
Chicago.....	15,980,86-100	564,435		
Total.....	137,466	\$5,917,520		
Recapitulation—				
Aggregate value of Exports.....		\$72,341,612		
Imports.....		69,251,955		
Total value of Exports and Imports on all lakes.....		\$141,593,567		

The foregoing figures are for the lakes enumerated, exclusively of Lakes Champlain, Superior and Ontario. The returns for the latter I must present you in a consolidated form, as follows:

	Valuation.
Lake Superior—Exports and Imports,	
Lake Ontario	\$28,141,006
Lake Champlain	16,750,700
Total.....	44,891,700
And Lakes previously enumerated.....	141,563,567
Total.....	\$186,455,267

Thus it appears, that the aggregate valuation of the lake trade of the United States amounts to the enormous sum of \$186,455,267! or more by \$40-

000,000 than the whole foreign export trade of the country.

Commerce of Milwaukee.

The following is a comparative statement of some of the principal articles of imports and exports at the port of Milwaukee for the years 1849 and 1850, from the Sentinel and Gazette:—

	1849.	1850.
IMPORTS.		
Tons merchandize.....	30,587	27,681
Barrels, Bulk.....	50,902	90,548
Lard and Hams, lbs.....		230,000
Butter & Cheese, lbs.....		448,000
EXPORTS.		
Flour, bbls.....	136,657	100,017
Wheat, bus.....	1,136,432	297,578
Shot, lbs.....		150,000
Lead, do.....	2,184,070	1,050,000
Brick.....	200,000	750,000
Hides, number.....	7,930	12,552
Wool, lbs.....	65,100	126,596
Beef, bbls.....	913	1,426
Pork.....	950	476
Lumber, (ft.).....		Shingles.
1850.....	30,160,337	17,004,000
1849.....	25,987,203	11,613,400

Excess in 1850.....4,173,134 5,390,600
Arrivals at the port of Milwaukee during the year 1850.

Steamboats.....	810
Propellers.....	224
Brigs.....	58
Schooners.....	475
Total.....	1539

Clearances about the same.

Commerce of Chicago.

The Chicago Tribune gives an exhibit of the commerce of this city for the past year, from which we copy the following items:—

	1849.	1850.
IMPORTS BY LAKE.		
Lumber, ft.....	100,364,797	55,423,750
Lath.....	19890,700	
Staves and Headings, estimated.....		3,00,000
Flour.....	20,282	20,624
Iron, tons.....	2,142	400,897
Salt, bags.....	35,995	251,603
EXPORTS BY LAKE.		
Beef, bbls & tcs.....	30,257	
Flour.....	66,432	
Hams & Shoulders.....	2,306	
Lard.....	2,415	
Corn.....	262,013	
Hides, No.....	17,245	
RECEIPTS BY CANAL.		
Flour.....	5,509	
Bacon & Hams.....	2,108,524	
Beef, bulk.....	19,368	
Coffee.....	87,772	
Tobacco.....	158,633	
Furs Hides & Pelts.....	378,750	
Hemp.....	225,059	
Lard.....	684,219	
Lead.....	393,806	
Hardwood and Lumber, ft.....		270,899
SHIPMENTS BY CANAL.		
Lumber, ft.....	38,388,314	
Shingles.....	40,453,250	
Lath.....	11,208,170	
Leather.....	274,036	
Nails.....	295,205	
Stoves & castings.....	881,682	
Sugar.....		162,892
Flour, bbls.....		34,439
Furniture.....		1,586,526
Merchandise.....		8,804,557
Wheat.....		95,193
Salt, bags.....		14,580

The shipment of grain and flour the present year, compared with those of 1847, are as follows:

	1849.	1850.
Wheat, bus.....	1,936,264	873,644
Corn.....	644,848	249,285
Oats.....	26,849	158,054
Flour, bbls.....	51,309	100,872

Reducing the flour of each year to wheat, the shipment of 1849 amounts to 2,192,809 bus.—that of 1850 to 1,378,004—making the excess of shipment in 1849 over those of 1850, 814,805 bus.

Railroad Letting, in Virginia.

PROPOSALS will be received at the office of the chief engineer of the Richmond and Danville railroad, until 9 o'clock A. M., Monday, the 10th of March, to be decided the 13th of the same month, for doing all the grubbing, clearing, grading, ditching and masonry, on the Richmond and Danville railroad, in the counties of Amelia, Notoway, Prince Edward, Lunenburg and Charlotte, comprehending about 45 miles of road.

Profiles and specifications can now be seen at the office of the company in Richmond; and after the 10th of February, at the offices of the resident engineers, on the line, at Burkeville and Keysville.

By order of the board of directors,
ANDREW TALCOTT,
Chief Engineer R. & D. railroad.
Engineering department R. & D.
R. R. Co., Richmond, Jan. 22, 1851.

Wanted.

WANTED—A Situation in a Civil Engineer's office, by a Young Gentleman from Scotland—has had six years' experience as a practical Draughtsman, Architect, Surveyor, and Leveller in one of the principal civil engineering establishments in Scotland. First rate reference given. Apply to Messrs. Cooper & Hewitt, 17 Burling Slip, or to
JAS. SNEDDON,
23 Harrison st.

Railroad Letting in Ohio.

Bellefontaine and Indiana Railroad.

SEALED PROPOSALS will be received at Jacksonville, Darke county, Ohio, (known also as Versailles), until January 21st, 1851, for doing the Grubbing, Clearing and Grading on 25 miles from Loramie Creek to the junction with the "Indiana State Line. Profiles are now ready at the Engineer's Office in Sidney, Shelby county, Ohio, where information can be obtained from Israel Pemberton, Resident Engineer. Proposals may also be left at Sidney till the 20th of January.

SEALED PROPOSALS will also be received at Marion, Ohio, until February 5th, 1851, for doing the Grubbing, Clearing and Grading on about 40 miles between Marion and Bellefontaine. The work, and profiles on this division, will be ready ten days before the letting. Information can be obtained from Alexander Worrall, Resident Engineer, at Bellefontaine, and at the Chief Engineer's Office in Marion.

The above are the only portions on the route not yet under contract. This road is known as the "third link" in the "great central backbone chain" from Philadelphia to St. Louis, and likewise as the western continuation of the main lines from Boston and New York, through Cleveland.

By order of the Board of Directors,
W. MILNOR ROBERTS,
Chief Engineer.
Engineer's Office, Marion, Ohio,
December 10, 1850.

Wanted.

A Second-hand Locomotive of 10 to 15 tons weight. A note, giving lowest terms, addressed to A. B., Railroad Journal Office, will receive attention.
January 9, 1850.

American Railroad Iron.

1000 Tons, weighing 50 lbs, per yard, manufactured by Reeves, Abbott & Co., at the Safe Harbor Iron Works, and now lying in yard at Brooklyn, for sale by
CHOUTEAU, MERLE & SANFORD,
No. 51 New street.

Tubes, Tubes, Tubes.

THE undersigned have received special permission from, and are in direct communication with, the Birmingham Patent Lap Welded Iron Tube Company, for the sale of their very excellent and superior Boiler and Gas Tubes in large or small quantities.—These Tubes are sold very extensively in England and on the continent of Europe are sold exclusively by
WM. BIRD & CO.,
Iron and Tinplate Merchants,
44 Wall st., New York
5 Martin's Lane, City, London,
and 140 Buchanan st., Glasgow.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

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ASSISTANT EDITORS,
J. T. HODGE, *For Mining and Metallurgy.*
GEN. CHAS. T. JAMES, *For Manufactures and the Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & Co., 136 NASSAU ST.

Saturday, February 1, 1851.

Pacific Railway.

TO THE EDITOR OF THE R. R. JOURNAL:

Sir—I received yesterday your Journal of the 10th inst., and have read the communication of "A Western Man" therein, in objection to mine on the general subject of the Pacific railroad of the 14th December.

I respect the friendly zeal with which the writer defends Mr. Whitney as the projector and persevering advocate of the greatest railroad project of the age, but in common with many others, I remain unconvinced that Mr. Whitney's scheme is the best adapted to build the road promptly, or that Mr. Whitney, with a preconceived definition of

the route, is the most proper individual to ascertain without prejudice, and with a due consideration of all the interests involved, the best location of that route. I will readily grant that the devotion of such a man as Mr. Whitney to such an object is calculated to hasten its accomplishment by some years, provided that the scheme under which he works is that best calculated for its rapid execution; but Mr. Whitney's present scheme is by many considered to be deficient in this respect.

I will not follow the writer through the catalogue of errors which he has made me commit, because, besides that this would lead to a discussion of great length, the reader can himself judge of their relevancy to the great matter in dispute, which is not with me, so much Mr. Whitney as the road itself.

It does not follow, however, that because no mention of stock is made in the bill granting Mr. Whitney the lands desired by him, that therefore he would not create stock, or in other words, associate others with himself, after the passage of that bill. Indeed, I am in the dark as to how the funds are to be procured so make the road, other than very tediously, unless through some such organization.

I should think, too, that it could hardly serve Mr. Whitney's cause to assume that those having interests different from his, are necessarily governed by unworthy motives, as "A Western Man" more than once insinuates, while Mr. Whitney's entire action is to be accepted as immaculate.

There exists no disposition to undervalue Mr. Whitney's services as the pioneer of the road, certainly no feeling of that kind on my part; but there exists as certainly an inability on the part of myself and many others to perceive that this plan is the best calculated to make certain a reasonably rapid execution of the project, and there exists a strong objection to the route chosen by Mr. Whitney, founded, as the writer truly observes, on its passing entirely to the north of St. Louis, the principal border city of the west.

St. Louis possesses now a population of 77,716 persons within her limits, and including the suburbs, a population of 82,924. She forms the great market city of the extreme west, towards which there are roads projected and making, which will connect her shortly with the principal seaport cities of the Atlantic coast. She is now making a rail-

road to Kansas, three hundred miles in length, and although this road passes through a mineral and agricultural country so rich, as to insure to it a sufficiency of business, independent of any connection with a railroad to the Pacific, it is not the less evident that it will lie in the general direction of such a railroad, and will shorten to the extent of 300 miles the distance between St. Louis and the Pacific coast.

To start from the western line of the State of Missouri, then, would reduce considerably the amount of road to be built, as compared with the Michigan route, and the amount of money to be expended; would connect the continental road with a most important and mercantile city of 77,716 inhabitants, and would connect it also with Cincinnati, the most populous city of the west—more directly than by the Michigan route.

These are considerations which would seem to be deserving of some weight in the determination of the location of such a road.

But St. Louis, so far as I understand her position, makes no claim to being made the starting point of this road, if the advantages should prove to be entirely in favor of the northern route. All that she insists upon in that case is the power to build a branch to that road accompanied by a grant of land and privileges in all respects proportioned to what may be granted Mr. Whitney on his northern route; and further, she is indifferent to the form in which that assistance shall be given, whether it shall be through Mr. Whitney himself, as forming a part of his scheme, or by a separate bill, provided only, that the branch be as promptly made as the northern trunk, and that both shall proceed on a scale commensurate with the work to be done, and under a system certain to secure their completion within a limited number of years. A connection with the road, and the prompt accomplishment of the road, are the great desiderata here. The mode in which that shall be effected, or through whom it shall be effected, are matters comparatively of no kind of consequence.

I have no disposition to dwell upon the scheme given in my communication of the 14th December—or to defend it from any valid objections to which it is open. It has, however, its merits, which its alleged resemblance to an unpopular bank will no way invalidate.

I am inclined now to look to a commission, if it

could be properly constituted, as the best form of satisfying and uniting the conflicting interests concerned in the position of the railroad to the Pacific, and of determining its location without prejudice, and with proper regard to all the interests involved. The great difficulty would no doubt consist in the nomination of the members of such a commission. If it were composed essentially of men of tried experience in the construction and management of railroads, its future action would prove satisfactory to the public at large, if it should not be entirely so to each particular interest.

I will mention some men of well known credit and integrity, in connection with the construction and administration of railroads, as proper persons to constitute such a commission; nor would there be any occasion for more than one member of such a commission being on the ground. All the examinations and surveys to be made could be conducted by agents of its own appointment, and the results could as well be considered in Washington or any other city, as on the line of the road.

The President of the Baltimore and Ohio railroad company, Thomas Swann, Esq., may be mentioned first, as peculiarly fitted to be of such a commission, Capt. W. H. Swift, President of the Western railroad, as another. George Bliss, Esq., of Springfield, Massachusetts, who, as agent of the Western railroad company, conducted that work so successfully to its completion. Alfred Kelly, Esq., of Columbus, Ohio, who has had so long experience in the construction of the public works of that State. Horatio Allen, Esq., of New York, who has been so long associated with the railroads of the State of New York. P. P. F. Degrand, of Boston, familiar with the railroads of Massachusetts, and who has interested himself, like Mr. Whitney, in advocating the construction of a road to the Pacific.

E. H. Derby, of Boston, who is more familiar with the details of railroads, perhaps, than any other non-professional man of our country.

There are many other names of equal experience, if not so widely known, and I mention these only as occurring to me readily at this moment.

Such a commission might consist of seven persons, two of whom should be *ex-officio*, the Colonel of the corps of U. S. Engineers (Col. Totten) and the Colonel of the U. S. Topographical Engineers (Col. Abert). The remaining five should be elected for a period of four years at least, and Mr. Whitney should form one of these five.

Their duty would be, first, to have proper examinations and surveys made of the difficult passes upon the road. Then to report upon and determine the location, and, thereafter, proceed as vigorously with the construction as possible.

I would propose that a certain amount of public lands, along the line of the road, should be placed in the hands of such a commission, to be disposed of gradually as the progress of the road made them saleable. I would propose that the funds necessary to make the proper examinations and construct the road should be obtained by a loan, guaranteed by the United States, and that the proceeds of the lands, placed in the hands of a commission, should be applied solely as a sinking fund for the redemption of the above loan.

I would propose, further, that when the entire road shall have been in operation two years, it shall be obligatory on the part of the commission to dispose of it in sections of 500 miles, or upwards, to private companies, and, that the pro-

ceeds of such sale shall be added to the sinking fund for the purpose of redeeming, at maturity, the loans which have been made for construction, and so of all profits arising from the road itself. And so far from deeming it a good feature that the road should be reserved in the hands of the United States, to be worked free of other than a nominal charge, I should consider it especially important that, when fairly in operation, the United States should dissolve all connection with it, feeling certain that it would, in that way, be worked more economically, and satisfactorily, and responsibly, than if in the hands of the government. I should consider the scheme incomplete, until the road was converted into stock and in the hands of private companies, and subject to the same tariff of charges as other railroads.

I will add, that it should be in the power of such a commission, after defining the route, to adopt Mr. Whitney's plan of action, and to place the entire project in his hands, if it felt convinced that, by so doing, the object for which the commission was constructed would be better attained than by any other.

In discussing the merits of this great measure, my desire is to avoid all personal altercation, as in no ways serviceable, either to the cause of truth or the advancement of this road.

I have not had leisure, nor have I felt it necessary, thoroughly to study all the details of Mr. Whitney's scheme, and the very general expression of opinion in regard to it, advanced in my last communication, were gathered as much from the opinions of others, as from any close examination of it by myself.

My objections to Mr. Whitney's scheme are strong on two points; 1st, that in advance of that instrumental investigation, absolutely necessary to determine the best route, he has determined upon a very northerly route, which passes entirely away from St. Louis, and this, without providing in his plan for a simultaneous connection with the most important border city of the west, upon which, as a point, more railroads are being concentrated, from influences affecting the Mississippi valley, than on any point on his northern route; 2d, that the plan, so far as it is visible in the bill, requires a much longer period of years for its accomplishment than, in my opinion, under a well considered plan, and with ample means would be necessary.

Now, if good men could be placed on such a commission as I have suggested, they would not define the road until in possession of a great deal of information not in existence now, nor would it occupy a great length of time to obtain this information.

I have already allowed that there are difficulties attending the formation of such a commission, and doubtless it might be so formed as to become a nuisance instead of a benefit. But with so many men in the country now of long experience in the successful establishment of railroads, there would be little excuse for the selection of persons not so qualified.

If, however, Congress should consider it most advisable to adopt Mr. Whitney's scheme, I shall wish him every success in its prosecution, and will willingly amend any doubtful feeling which I may entertain towards it now, if it should be prosecuted then as vigorously as the many interests dependent on its completion for their development require that it should be.

In such case I do not fear but that the continual

ly increasing importance of St. Louis, and of that part of the Mississippi valley which she represents, would secure that assistance from the government, towards the construction of a connection with any main road away from her, which Mr. Whitney's scheme might as well have embraced, now so far as we can judge here, and which, if the commerce of the Mississippi valley were at all respected in proportion to its worth, would have formed a main feature instead of a subordinate one in any such bill.

As Mr. Whitney himself says that his only object is "to see this great work successfully accomplished," I may be permitted to hope that neither he nor his friends will find, in a free discussion of its merits, any disposition to thwart that common object, we claim here a right to take as near an interest in it as any other section of the country, and from motives which influence all likely to be affected by it, those of self-interest.

A SUBSCRIBER.

St. Louis, January 20th, 1850.

European and North American Railway.

Among the fine things said at the Portland Convention we think it may be safely asserted that the speech of the Hon. H. A. S. Dearborn, of Massachusetts, bore off the palm. The long public services of Gen. Dearborn, his invaluable experience in all the great questions of public improvement in Massachusetts, his varied attainments in many departments of scientific enquiry especially in those of physical geography and commercial statistics gave much force to his remarks. We have been told by more than one gentleman present, that his allusion to the public services and hardships of Admiral Owen was the finest specimen of stage affect ever produced.

We think the allusion to the great statesman and benefactor of the Empire State, ought not to be forgotten, at least upon the men of our day. Is it not due to the memory of Clinton, that a fitting memorial should place the record of his achievements beyond the reach of forgetfulness. Gen. D. spoke in substance as follows:—

I feel utterly unable to occupy so large a space as is opened by the resolution before us—a resolution to establish a highway that is to be the connecting link, and the great thoroughfare, between two continents, to do it well, to do it speedily. I feel satisfied that it can be done; I feel satisfied that it *will be done*—and that, old as I am, I may yet pass over it; that, if the Lord spares my life for five years, I may go to St. John, to Halifax, to Ireland, to London; and crossing from Dover to Calais, I may go from thence by railway to the furthest extremity of Europe. (Cheers.) This may, by some, be deemed extravagant; but already the necessary steps have been taken for the construction of a railway from Calcutta to Bombay. The route from Calais to the Bosphorus may be considered as certain, within a less number of years than I have indicated. Nor shall this highway of nations stop there; for I believe that some Stephenson may yet arise, to throw an iron arch across the Strait between Europe and Asia; and that a visit to the Euphrates may be, to the traveller, but an ordinary excursion. (Cheers.)

It is but twenty-five years since I proposed that a railroad should be constructed from Boston to the Hudson; and that a tunnel would be made through the Hoosic mountain; for this, I was termed an idiot! An idiot I may be; but the road is made, and the tunnel through the Hoosic mountain is in course of construction. (Cheers.) Formerly, scientific men dealt in abstract theories; now, we find the workmen themselves entering into the halls of science, illustrating theory by practice, and teaching knowledge to the world. The time was, when weaving was a mystery; dyeing was one of the occult sciences; and even the manufacture of

soap depended upon good luck for a favorable result. But, by the help of practical science, all these matters are now reduced to a certainty.

Gentlemen—I feel satisfied that this railway must be constructed. It is true, there are not wanting those who will doubt that the sun shines at mid-day, unless they can see it for themselves.

Gentlemen—If all do not comprehend the importance, the practicability, and the profit of this great project, there are enough who do comprehend, to carry the measure to a successful termination. It was forty years after the discovery, by Newton, of the theory of gravitation, before it could be comprehended; now, it is practically understood by every school boy. It is but twenty years since the British nation sustained the loss of their statesman, Haskisson, struck down by a car in England, in the first passenger train that passed over its iron rails; but now, railways have become the ordinary means of traffic and transportation. We dare even to propose a line to the Pacific, and it is certain that that line will be constructed, so that the line now in contemplation will extend to the Atlantic shore of Nova Scotia. (Cheers.)

I well remember when the construction of a railway, three miles in length—from a granite quarry in Quincy to Boston bay—was projected; it was esteemed a wonderful undertaking, and looked upon as wild and chimerical; Now, there are over 7000 miles of railroad in the country. These, connecting with the present vast project, will almost entirely encircle the world. And these plans will be accomplished, either with the aid of governments or in spite of them, for it is not in their power to stop them.

Ohto.

Little Miami Railroad Company.—The receipts of this company for the past year are as follows:—
For carrying passengers.....\$204,589.87
For carrying freight.....192,607.37
For carrying U. S. Mail.....8,500.00

Total receipts.....\$405,697.24

EXPENDITURES.

For timber for repairs and superstructure.....\$5,842.56
For repairs and renewal of locomotives.....26,181.86
For repairs of depot, including wages of watchmen at Fulton depot } 2,151.95
For repairs of bridges.....2,659.88
" " Passenger cars.....4,841.13
" " Freight and gravel cars. 14,150.99
For labor repairing road-bed, superstructure and damages by flood, in March, 1850.....30,109.46
For fuel.....30,007.34
Transportation Expenditures, including wages of men, salaries, &c.... 55,908.10
Miscellaneous.....10,376.11

\$182,228.58

Deduct fuel on hand, included in charge for fuel as above.....5,800.00

Deduct materials on hand, tools, &c., charged to repairs of road.....1,500.58

Total receipts on account of transportation.....174,928.58

Total expenditures.....\$405,697.24

Total receipts.....174,928.58

Net receipts over current expenses... 230,768.66

The following statement shows the business of the road for the years ending December 1st, 1846, 1847, 1848 1849 and 1850:

	1846.	1847.	1848.
Passengers.....	\$51,190 11	\$90,843 90	\$144,132 01
Freight.....	64,861 91	130,295 62	128,440 97
Mail.....			7,512 50
	\$116,052 02	\$221,139 52	\$280,085 78
		1849.	1850.
Passengers.....	\$154,817 63	\$204,589 87	
Freight.....	158,081 19	192,607 37	
Mail.....	8,500 00	8,500 00	
	\$321,399 82	\$405,697 24	

From the Treasurer's report, we give the following abstract of the financial condition of the company, Dec. 1, 1850:

For construction.....	\$1,650,073 14
" depots and real estate.....	168,664 31
" machinery.....	311,290 55
" expenditures on account of transportation.....	182,228 58
" cash in hands of treasurer....	10,496 46
" branch road in Greene county..	232,608 42
" due from individuals and ag'ts	59,833 39
" profit and loss.....	34,980 42
" miscellaneous.....	89,696 63
	\$2,729,375 74
By capital stock.....	\$1,418,875 48
" loan of city of Cincinnati.....	100,000 00
" loan of 1846, in bonds of six per cent.....	61,000 00
" bills payable.....	145,739 49
" transportation receipts.....	405,697 24
" eastern loan, at seven per cent.	190,000 00
" loan of 1848, in bonds at seven per cent.....	200,000 00
" revenue account, interest on branch road in Greene Co..	16,386 15
" due individuals.....	23,200 62
" dividends unclaimed.....	3,476 76
" loan of 1850 in bonds.....	165,000 00
	\$2,729,375 74

Total cost of road, cars, engines, and appurtenances, to Dec. 1st instant.....\$2,160,497 00

Real estate other than right of way.. 46,114 75

\$2,206,611 75

Less interest chargeable to current expenses for the year 1850..... 40,218 35

Total cost of road.....\$2,166,393 40

The permanent loans and capital stock of the company are:

From city of Cincinnati, at 6 per cent.	\$100,000 00
" capital stock.....	1,418,875 48
" eastern loan, at 7 per cent.....	190,000 00
" loan of 1846, in bonds, at 6 per cent.....	61,000 00
" loan of 1848, in bonds, at 7 per cent.....	200,000 00
" loan of 1850, on bonds collateral	165,000 00
	\$3,134,875 48

Amount expended during the year ending Dec. 1, 1850, has been:

For graduation and masonry.....	\$49,973 17
" bridges.....	1,360 94
" superstructure, including iron....	312,443 66
" interest and expenses.....	42,758 46
" engineering.....	3,806 85
" machinery.....	32,131 25
" real estate.....	4,794 69
" lands for right of way.....	6,818 02
" transportation expenditures, including wages, fuel, horse power, repairs to engines, cars, &c., also repairs to superstructure, &c.....	182,228 58
" depots and water stations.....	6,703 52
	\$644,019 15

The president, in his report, states that, "during the past year considerable progress has been made in the works necessary towards the completion and efficiency of the road. The original flat bar has now been removed, and the T rail laid down, on 47 miles of the road, between Cincinnati and Xenia, leaving but 17 miles to be improved. Previous to putting down the heavy rail, the track has been repaired, and in many places reconstructed, the grades have been reduced, the road straightened, the embankments widened and made substantial, the bridges repaired, and the water-ways enlarged. All this work has been done in the most substantial manner, and with a view to permanency, so that when the remainder of the road shall be re-laid in the same way, our road will compare favorably, in construction and durability, with the best railroads in the United States.

The remainder of our road, extending from

Xenia to Springfield, a distance of 17 miles, having been the most recently constructed, is still in a good condition, but this also will be re-laid with the heavy rail without delay, and with such improvements as may be found necessary. Our road will then be complete, and as it is contemplated that all the roads about to be constructed, with which we shall connect, will be laid down with the heavy rail in the first instance, our road will then offer inducements to the traveller which will probably not be surpassed elsewhere.

There will remain, however, some further expenditures to be made for improvements which are deemed essential. One of these is, the construction of a new track to diverge from the present road below Deerfield, running thence to Lebanon, and re-entering the road near Waynesville. The length of this branch will be about fourteen miles, and the distance saved by it will be about five miles. The present road will not be abandoned, but will be kept up to serve the purpose of a double track, and for the accommodation of the country through which it passes. Another change of the track is contemplated near Milford, by which the distance will be shortened, and the grade reduced; and a still more important one at the terminus of the road in Fulton. The track now occupies the centre of a street which is one of the most crowded thoroughfares leading into Cincinnati. This location, while it causes much dissatisfaction to the inhabitants, is, on that and other accounts, not a desirable one for the railroad, and a change is considered important, as well to obtain a track which shall be under our exclusive control, as to secure a better approach to our depot. The right of way will be costly; but the advantages of owning the track, of avoiding an inconvenient grade, and of complying with a public opinion adverse to our occupancy, will more than counterbalance the outlay.

The growing importance of the travel on our road, and the temporary character of the passenger depot at Cincinnati, admonish us of the necessity of erecting a larger and more convenient structure for that purpose; and the proposed change of location at this end of the road, will render it desirable to put up this building at the same time.

These further improvements form parts of the general plan announced in our former reports, and are necessary to the completion and advantageous operation of the road. Viewing them in this light, it is the intention of the board of directors to prosecute them with as much vigor as our resources will permit, so that at the earliest possible period the road may be brought into the best practicable condition for usefulness to the public and profitable investment to the stockholder.

To carry out these plans, it will be expedient to continue the policy, which has heretofore been pursued with good results, of expending the earnings of the road in its completion, and making our dividends in stock. Having laid out all our capital, and being compelled to make further expenditures in order to render that capital productive, we must either use our earnings for this purpose, or we must borrow money, or increase our stock by throwing additional shares in the market. These are but different modes of bringing about the same results, but the first named has this advantage: that we borrow from our own stockholders, and avoid the payment of extravagant premiums for money. By this mode we invite our stockholders to use their own money to enhance the value of their own property, and to secure a future revenue from capital already invested; and by keeping down the pecuniary liabilities of the company, we sustain its credit."

Illinois.

Terre Haute and Alton Railroad.—We have just received a copy of the survey of the route of the above proposed road, and a map and profile, from which we give the following general description of the route:

The line of the above road runs from Alton, Illinois, via Bunker Hill, in Macoupin county, Hillsborough, in Montgomery county, Shelbyville, in Shelby county, Charleston, in Coles county, and Paris, in Edgar county, to the Indiana State

line. It is then to be extended to Terre Haute by another company. In the survey the line was divided into six divisions, as follows:

FIRST DIVISION		m.	ft.
Commences at Alton, and ends at Bunker Hill.....	19	3,430	
SECOND DIVISION			
Commences at Bunker Hill and ends at Hillsboro.....	30	2,730	
THIRD DIVISION			
Commences at Hillsboro and ends at Shelbyville.....	43	2,480	
FOURTH DIVISION			
Commences at Shelbyville and ends at Charleston.....	34	2,630	
FIFTH DIVISION			
Commences at Charleston and ends at Paris.....	27	140	
SIXTH DIVISION			
Commences at Paris and ends at State line.....	10	2,242	
		165	3,142

Of the whole line, 141 miles is straight, and 24 curved. The curves are remarkably favorable. The greatest elevation obtained above the Ohio and Mississippi rivers, is only 322 feet; the maximum grade is 39.60 feet per mile.

The following is a general summary of the estimated cost of the different divisions in the road, including the equipment:

First division.....	\$154,077 27
Second ".....	241,185 80
Third ".....	340,472 94
Fourth ".....	274,085 72
Fifth ".....	223,997 74
Sixth ".....	74,441 83
	\$1,308,261 30

FURNITURE OF THE ROAD.	
10 Locomotive engines and tenders, at \$7,500.....	\$75,000 00
10 Large passenger cars, at \$1,800 each.....	18,000 00
5 Baggage cars, at \$500 each.....	2,500 00
150 Freight cars.....	52,500 00
40 Gravel cars.....	2,000 00
10 Cars for live stock.....	5,000 00
	\$155,000 00

\$1,463,261 30

These estimates, says the engineer, were carefully made from a preliminary survey, and, in his opinion, cover the maximum quantity of work required to build the road. He is satisfied that improvements can be made at certain points, so as to lessen the cost of construction, by a sum equal to the incidental expenses of the road.

The average estimate per mile is \$8,860, made up as follows:

Grading and bridging.....	\$2,724
Iron and superstructure, etc.....	5,196
Equipment.....	940

Per mile.....\$8,860

This is undoubtedly too low a figure, but the whole work on the line is of the most favorable character, and no road in the west can be built cheaper. The country traversed is unsurpassed for its fertility. The only question in the construction is that of means. The country on the line of the proposed road is new, and its inhabitants have had time to accumulate but little surplus capital. The completion of the great lines in progress at the east will soon turn public attention to the projected lines through Illinois, which are necessary for their extension to the Mississippi river.

If the above company would take advantage of the favorable state of the money and iron market, it must be up and doing, in order to secure the

necessary means before the natural revulsion takes place which is sure to follow the present abundance of money.

South Carolina Railroad.

We have received a copy of the operations of this company for the past year, which presents the following exhibit of its affairs:

The gross receipts of the road for the year.....	\$912,720 25
And the expenses of management, equal to 42 per cent.....	384,040 85
Net profit.....	528,679 40
Less interest on sterling and other bonds and other charges.....	188,991 16
Leaving for net income.....	339,688 24
From these profits two dividends of 3 per cent. each have been declared, amounting to.....	174,600 00
Leaving a surplus of.....	\$165,088 24

to the credit of reserved fund account. This result, says the report, seems full of encouragement, for it has been accomplished under many adverse circumstances. For example, there has been a deficiency in the down freight of \$71,393 29, clearly attributable to the combined effects of a short crop and the break down at the Wateree Swamp. From this latter cause alone, there was a loss of revenue, as compared with last year, of \$26,769 72, for the months of October and November, and an increased expenditure for repairs of \$5,236 10. It seems therefore, not unreasonable to infer, that there was an increase during the same period of \$91,710 38 over last year, in the up freight and passage, that had it not been for the adverse circumstances alluded to, the income for the year would have reached \$1,000,000, and without any material addition to the expense of management.

To procure the necessary means for re-laying the track, and for such improvements as the interest of the company required, a requisition was made in March last upon the stockholders for \$25 per share. From this source there has been received \$611,316 50, leaving due on unpaid instalments \$355,933 45

The following is a statement of the property account of the company as it appeared on the 1st ult.

SOUTH CAROLINA RAILROAD.		Dr.
To stock: for 42,810 shares, at \$75 per share.....	\$3,210,750 00	
To additional instalments paid in....	611,316 55	
To reserved fund, amount to credit..	165,151 55	
To balance, constituting balance of indebtedness of the company, per debt account below.....	2,661,987 67	
	\$6,649,205 77	

Cr.

By property in roads—say 242 miles, embracing Hamburg, Columbia, and Camden roads.....	5,468,119 59
By property in lands.....	92,823 09
negroes—19 negroes..	15,036 00
locomotives—37 locomotives.....	205,915 00
cars—15 passenger & 436 freight and baggage cars.....	217,242 36
materials and machinery on hand to be applied.....	44,960 31
By railroad iron account—charged for relaying from October, 1848.....	486,293 10
By Charleston depot—lands, buildings and improvements.....	105,677 51
By inclined plane—works around...	9,138 43
By new work shops.....	3,991 38
	\$6,649,205 77

The following is a statement of the receipts and expenditures of the South Carolina railroad company, for the year ending 31st December, 1850:

		Dr.
To freight.....	\$593,356 78	
To passage.....	272,383 37	
To mails.....	40,307 23	
	906,047 38	
To minor sources.....	6,672 87	
Actual business of road.....	912,720 25	
Miscellaneous.....	19,436 76	
Capital stock—additional instalments paid in.....	611,316 55	
	\$1,543,523 56	
		Cr.
By reduction of indebtedness—		
From.....	\$2,947,071 56	
To.....	2,661,987 67	
	285,083 89	
Dividend for first 6 months....	\$57,300	
" second 6 months.....	87,300	
	174,600 00	
Rail iron account—relaying road....	277,335 24	
Relaying road—timber, spikes, and contract work.....	46,790 49	
Property in locomotives—for 3 passenger and 2 freight engines.....	38,668 59	
Property in cars—190 freight and 7 passenger cars.....	79,279 64	
Miscellaneous.....	68,732 76	
	\$970,491 55	

By following accounts charged to income previous to declaring dividend. Interest on sterling bonds.. 106,918 18 Interest general..... 68,250 75 Exchange..... 616 40 Property damaged and lost. 10,024 97 Stock mutilated and killed. 1,180 86

188,991 16

By ordinary current expenses in bureau department. Salaries..... 12,435 74

Contingencies,—stationary, etc. 1,559 57

In road department: Salaries and wages..... 40,969 16 Timber..... 16,942 21 Spikes..... 8,979 34 Contingencies... 5,534 62

72,425 33

In transportation department:

Salaries and wages..... 150,913 92 Expenses conducting transportation.... 14,447 63 Tallow..... 4,707 04 Oil..... 5,845 95 Wood..... 26,210 07

203,123 61

In machinery department:

Salaries and wages..... 60,735 76 Machinery bo't. 33,716 79 Coal..... 1,044 05

95,496 60

\$1,543,523 56

The debt of the company has been reduced within the year, from..... \$3,515,507 61 To..... 3,176,668 65

Viz: notes of the company paid up in full..... 244,310 87 Scrip redeemed..... 37,403 82 Interest scrip for dividend No. 9, paid off..... 8,935 00 Palmer, Mackillop, Dent & Co., and others..... 51,189 27

\$341,838 96

There has been paid the past year for iron for relaying the road, the sum of \$264,801 71.

Fifty eight and a half miles of old road have been relaid with new iron, within the past year, at a cost of \$46,790 49 for labor and timber, leaving 39 miles

[exclusive of five and two thirds at the inclined plane] on the Hamburg branch [above Branchville] to be finished after the 1st of January, 1851, besides ten miles of a heavier rail, the relaying of which may be deferred until a later period. The work of relaying, it is expected, will be completed by the first of April next.

The motive power of the road has been increased within the year, by the addition of 5 new locomotives, [3 for passengers, and 2 for freight]; by 5 passenger, 1 baggage, and 137 freight cars.

Early in July last, a contract was made for grading the 1st, 2d, 3d, and 4th sections of a route previously adopted by the board for avoiding the present inclined plane at Aiken, the 5th section being reserved for the company's own hands.

The route was adopted after the fullest consideration, from a survey made by G. B. Lythgoe, Esq., the company's own engineer and superintendent of the road, and under advice of some of the most eminent engineers of the country. It leaves the old road near Mrs. Schwartz's, at Lower Aiken, and running to the left, crosses the present plane about 900 feet from its summit, and intersects the old road again near the Graniteville station, making it its whole distance 29,500 feet, equal to 5½ miles; being 1800 feet, or a little over one third of a mile shorter than the present road. The route is a straight line for five miles, with the exception of a curvature of 1½ inches in 50 feet at the lower end, and another of 700 feet on a level near Mrs. Schwartz's, where the radius is 2000 feet. The grade is 52½ feet to the mile, and the estimated cost 110,000 dollars. The period stipulated in the contract for the completion of this work, is from the first April to the 1st July next. An efficient force of 130 hands has been at work on it since August last, and the progress already made in the work warrants the expectation that the contractors will be up to their time.

Great efforts will be made to complete the whole, and have it in readiness for the business of the ensuing season. A heavy rail, of the bridge pattern, and weighing 70 lbs. to the yard, has been ordered, and is now on the way for ironing it.

Machinery for the shops, of the latest and most improved invention and construction, is now being selected by an agent sent on to the north for the purpose, and will be received by the time the shops are ready.

The principal item in the repairs for the Camden branch, is for re-building the road across the Wateree Swamp. The tressel work over that swamp gave way early in October last, while an engine and train of 12 cars, loaded with cotton, were passing over it; and as the caps or cross-ties, resting upon the piles, and supporting the frame work above, some 10 feet in height, were not fastened to the piles either by dowel pin, tenon, or otherwise, the whole superstructure, when it commenced falling, fell to the abutment of the bridge at the river, a distance of 3½ miles.

The repairing of this disaster cost the company \$5,236 10, in addition to the loss from the interruption of business on the road.

The large increase in the receipts of this company is a gratifying indication for the future. A very large number of railroads are now in progress which must eventually use the South Carolina railroad as their trunk line. Upon their completion we see no reason why the receipts of this company should not be immensely increased, so much so as to make it one of the most profitable lines in the country.

Pennsylvania.

Schuylkill Co.—The Schuylkill navigation company has elected the following officers for the government of the canal this year, viz:—President, F. Fraley; directors, Joshua Lippincott, John R. Worrell, Eli K. Price, Richard D. Wood, Philip R. Howard, Benj. Gerhard, Thos. T. Lea, Chas. H. Rogers, Samuel Silliman, Lewis Audenried, Barnabus Hammit, George F. Tyler; secretary and treasury, C. W. Bacon.

Central Ohio Railroad.

Below we give copious extracts from the exhibit of this company just published. We do this for the reason that the facts and arguments contained in it, are equally applicable to almost every other route in the State, so that while we publishing it, we may aid the operations of one company, we are rendering equal service to all similarly situated. The exhibit is drawn up with great ability, and gives a very distinct and lucid view of the resources and prospective business of the company, and aided essentially, we have no doubt, to success in the recent negotiation. The company are certainly under great obligations to its President, Col. Sullivan, for the able and successful manner in which its affairs have been conducted:—

The foresight of Baltimore in planning a railway connection with the west, and the spirit and perseverance, through years of labor, with which she has carried forward her great road, have not been sufficient, until recently, to inspire a general belief that she would be able to surmount the Alleghenies. Accordingly, the first railway efforts in Ohio were directed towards the lakes, by connection with which the flank of the mountains could be turned, and a steam communication had with the Atlantic seaboard.

The success of both the Philadelphia and Baltimore railway companies in finding practicable routes across the mountains, and the life given to the efforts of both interests by the stimulus of a generous emulation, have not only demonstrated that railways can, but will be built, and economically worked, over those, so called, barriers. And this demonstration is not solely to exercise a vast influence upon the fortunes of Philadelphia and Baltimore, but, from the consideration of furnishing the most direct routes to the west, necessary invites the attention of New York.

In addition to the discouraging influence of the impression alluded to, the fact that the Central Ohio railway was projected to traverse a region better provided with travelling and commercial facilities than other interior portions of the state—in the National road, the Ohio Canal, and the steam navigation of the Muskingum river—served to induce a less spirited movement, in the beginning of this enterprise than has been manifested by other less favored interests. But if last in asking attention abroad, the hope is felt that, ultimately, it will not be the least in public favor.

The very consideration which prevented the earlier development of this interest—now that the public mind demands more rapid and less expensive modes of travel and transport—will furnish to the Central Ohio railway an immediate and profitable traffic. It is, perhaps, the only line of railway in the west (except the Cincinnati, Hamilton and Dayton railroad) which shall have found an ample trade and travel provided for it before its construction, and impatient for its completion. Running parallel to and near the National road, the travel upon that great thoroughfare will, at once, be transferred to it; and intersecting at nearly right angles the Muskingum river improvement and the Ohio canal—very indirect avenues to market—those public works, instead of proving to be competitors, will be important tributaries to this railroad.

LINE OF OPERATIONS.

In consequence of ability to connect at Columbus with other railroads, built and being built—which will give outlet to Cincinnati, Indianapolis and St. Louis, and to the lakes—the Central Ohio company will, at this time, limit their action to that portion of their work which lies east of Columbus, and extending to Wheeling, on the Ohio river—a distance of 140 miles.

The first, or western division, between the cities of Columbus and Zanesville, a distance of 58½ miles, is all under contract; the grading and masonry of some sections being already complete, the rest rapidly progressing; and contracts made with responsible parties for the bridging, and also for the delivery of cross ties for the whole line.

The chief engineer confidently expects to have the 25 miles of road between Zanesville and Newark ready for the rail by May next, and the bal-

ance of the line, 33½ miles, is an equally forward condition by August or September next.

The line between Zanesville and Wheeling, which, from examination had, will probably be made within eighty-one and a-half miles, is now under survey.

It is the intention of the directors, as soon as the rail for the western division shall be provided, to commence the collection of the stock subscriptions already proffered for the eastern division, and place that portion of the work under contract with as much expedition as the surveys will admit.

COST.

For the western division, with a T rail of 60 lbs. to the yard, including depots, machinery &c.	\$877,000 00
For the eastern division, rail laid down 81½ miles, \$18,000 per mile.	1,467 000 00
Depots; &c.	50,000 00
Additional machinery	250,000 00
	<hr/>
	\$2,644,000 00

When the road between Columbus and Zanesville shall be fully provided for, the directors do not doubt their ability to obtain a sufficiency of stock subscriptions to insure an early completion of the eastern division. For that purpose Guernsey county voted \$100,000 at the last October election; the city of Wheeling, under a special law of Virginia, will shortly vote \$250,000; Belmont county will doubtless vote \$150,000 at the spring election; and Muskingum, already a stockholder for \$150,000, will be called upon for \$100,000 more at the next autumn election. These sums, added to the amount of individual stock which can be controlled for the eastern division, places the question of extension to the Ohio river beyond the ordinary chances of failure. Indeed, in any event it would become simply a question of time.

PRESENT CONDITION OF THE COMPANY.

The estimated cost of the railroad between Zanesville and Columbus, (and the work being either finished or under contract, the full cost can be very closely given,) with heavy T rail down, and equipped for business, will be	\$877,000 00
To provide for this, the company have stock subscriptions, (\$270,000 of which is already paid in,) to the amount of	\$417,000 00
Pledged, and partly subscribed at Columbus, the deficiency to be made up by Columbus and Xenia railroad company	100,000 00
	<hr/>
	\$517,000 00
Less interest to be paid stockholders, probably	10,000 00
	<hr/>
	\$507,000 00
To be raised by sale of bonds	370,000 00
	<hr/>
	\$877,000 00

Ample means being in the hands of the company for completing the graduation, masonry, bridging, purchase of grounds, construction of depots, water stations and repair shops, the purchase of cross-ties, and laying the superstructure, it is proposed to issue the bonds of the company to provide for the rail and a sufficient amount of machinery, for the commencement of traffic upon the road. For that purpose the directors have authorized the issue of an amount of bonds not exceeding \$450,000.

These bonds will be secured by a mortgage—the first and only lien—upon the western division of the road, the franchises of the company and all their chattel and real estate for that portion, including the rail *in transitu* as well as when laid down.

RELATION TO OTHER RAILROADS.

At Columbus, the Central road connects, at the same depot, with the Columbus and Xenia, and the Cleveland, Columbus and Cincinnati roads—the former in successful operation, and the latter about completed. The Columbus and Xenia, with the little Miami road, over a distance of 119 miles, makes railway connection with Cincinnati. By the Little Miami road to Springfield, a connection is had with the Mad river and Lake Erie road, also in successful operation. This road is being extended (and nearly complete) from Springfield to Dayton. It is also contemplated to extend the Columbus and Xenia road from Xenia to Dayton, where a second connection will be made with the Dayton and Greenville, and the "western" roads. Following the latter to the state line a connection will be had with the Terre Haute and Richmond road, (extended); which, passing through Indianapolis, traverses the whole width of the State of Indiana, and at Terre Haute, connects with the "Atlantic and Mississippi" road, stretching to St. Louis. At the west boundary of Ohio also, a connection will be had with the "Jeffersonville" road—a line eligibly situated for attracting traffic from the Ohio river, at Louisville, and from the Nashville and Louisville railroad.

At Columbus, also, the Central road will connect with the Columbus, Piqua and Indiana railroad, part of which is under contract, and under very vigorous management. This line, crossing the Mad river and Lake Erie road at Urbana, falls upon the Indianapolis and Bellefontaine road at Winchester, at which point its traffic will have relation to the line looking towards Peru and Chicago, as well as to the westerly communication through Indianapolis, in the direction of St. Louis.

At Newark, the Central road connects with the Columbus and Lake Erie road, which is now in operation, and furnishes a railway communication with Sandusky and Cleveland.

Such are the south-western, the western and north-western connections of the Central Ohio railroad. They are not merely proposed lines, but roads that are either in operation or more or less under construction.

Another very important connection is indicated in the Cincinnati, Wilmington and Zanesville railroad; which accommodating, as it will, a large district—very fertile and densely populated—and furnishing also, in part, the line of approach for an extension of the Frankfort, Lexington and Maysville railroad interest (which will bring also a share of traffic from the Nashville and Louisville road) will doubtless be constructed. The projection of this line is predicated solely upon the extension of the Central Ohio road east of Zanesville, and will, unquestionably, add largely to its traffic. This is an additional argument for such extension.

At its eastern terminus the relations of the Central road are, certainly, not less interesting.

The route by the city of Baltimore—from its geniality of climate, and from that city being nearer to the portion of the Mississippi valley, where, heretofore, has been the preponderance of population and trade—has always been a favorite route of travel for the people of the west. The growing tendency to take Washington city, in trips made east and west, will counterbalance any partial diversion, to other routes, of travel which has heretofore belonged to this.

The Baltimore and Ohio road—prevented by the Virginia Legislation from striking the Ohio river with its line, any further south than the Mouth of Grave creek; and by the topography of Interior Ohio from making any other advantageous railway connection—will, for many years to come, look to the Ohio river and our Central road for its through traffic.

At Wheeling, also, will be met the extension of the Hempfield railroad—a line that, diverging from the Pennsylvania Central railway, at Greensburgh, will, in connection with our road and its western extensions, furnish the shortest practicable route between either Philadelphia or New York Central Ohio, Cincinnati, and even St. Louis. So well convinced of this fact are opposing interests, that, for the purpose of countervailing it, a line down the margin of the Ohio river, from Pittsburgh, to connect with our road at Bridgeport, has been earnestly suggested.

PROFITS.

By the State Auditor's report for 1849, the aggregate amount of taxable property in the five counties through which this road directly passes, is \$13,011,063—just one tenth of the whole taxable property of the State. The population of these counties is about two hundred thousand. The aggregate of taxable property in the twenty-four counties [there being 85 in the State] penetrated by this road or by tributary lines struggling to make the shortest and best connection with the seaboard, is \$217,732,271 00. This is more than half of the whole taxable property of the State. The population of the same district is probably about half of what the State contains at this time.

That the traffic of these counties with the Atlantic cities will prefer the Central Ohio road is manifest, not only from the greater directness of this line, but also from its greater exemption from snows than roads nearer the Lake—the winter season, (where railway facilities can be obtained,) being the time for the greatest activity in produce operations.

PROSPECTIVE TRAFFIC OF THE CENTRAL OHIO RAILROAD.

The difficulty of getting reliable statistics, in regard to the resources of a country so rapidly improving as the west, has caused too much freedom of assumption, in making up estimates of traffic for proposed railways. The distrust produced by such freedom of assumption, operative, in some measure, as it is, against even sound railway projects, induces a feeling of reluctance to go into an elaborate estimate of the extent of traffic which the Central road may justly claim.

The following table of the resources of twenty-four counties in Ohio, which the Central road penetrates, by itself or tributary lines, from which it will draw the larger share of their traffic with the seaboard, is taken from the report for 1849 of the Auditor of State. As that report does not give products, and the census returns are not yet had, we shall have to look for those statistics to other sources.

Table of Resources, in part, of 24 Counties in Ohio through which the Central Ohio railroad and its tributary lines will pass. From State Auditor's report, 1849: together with the population of those Counties in 1840;

Am't of No. of No. of No. of
Counties. Taxable Horses. Neat Sheep. Hogs.
property in Cattle.

Counties.	Taxable property in 1849.	Dollars.	Horses.	Neat Cattle.	Sheep.	Hogs.
Belmont.	7,249,624	9,552	13,449	70,365	31,323	
Guernsey.	4,905,720	9,282	14,182	81,662	30,771	
Msk'gm.	10,816,029	11,839	19,676	81,785	37,645	
Licking.	8,931,727	11,670	19,832	118,789	33,891	
Franklin	11,108,993	9,466	15,007	32,981	54,516	
Clark.	6,758,999	6,765	14,031	55,242	25,543	
Champ'gn	4,956,712	7,172	12,753	46,870	27,093	
Miami.	6,277,904	7,434	10,799	29,024	26,390	
Darke.	3,281,236	6,340	10,803	23,418	29,369	
Preble.	6,043,236	7,965	11,167	26,614	38,744	
Mon'try.	12,622,331	9,935	13,996	29,019	34,243	
Butler.	10,467,004	10,632	12,420	16,162	63,425	
Hamilton	5,387,166	12,419	12,239	9,379	37,672	
Clermont.	6,534,215	8,379	10,687	22,195	51,076	
Warren.	8,091,250	8,487	12,149	28,635	41,717	
Green.	7,339,718	7,870	12,530	44,277	36,484	
Madison.	3,532,529	4,732	20,600	48,058	23,587	
Clinton.	4,467,533	6,795	11,485	49,491	40,538	
Highland.	5,533,814	9,027	12,024	39,337	53,286	
Ross.	10,247,961	10,228	24,129	30,350	66,483	
Pickaway.	7,869,061	8,181	23,889	31,055	54,382	
Fairfield.	7,490,984	10,166	16,724	48,105	42,414	
Perry.	3,570,619	6,411	11,018	49,473	20,578	
Knox.	5,727,936	8,407	14,377	85,883	24,659	

Total. 217,732,271 209,154 350,966 1,098,159 925,827
Whole amount of taxable property of the State in 1849 was \$430,839,385.

The population of the above counties at the present time is not far from 1,000,000.

The importance of this table, in making up our estimates, can only be fully appreciated, in the consideration that live stock can be transported on railways more cheaply, than driven on foot. Large numbers of horses, mules, and neat cattle, are now driven from Ohio, Kentucky, and Indiana, and, to

some extent, even from Illinois and Missouri. This is done at a greater expenditure of money and time, and with great loss of flesh to the animals driven.

The saving alone, in condition, of horses, mules, and cattle, would well justify, we are informed by drovers (and as statistics of English railways demonstrate) the payment of 25 per cent more cost for their transportation, by railway, than for driving. Hogs, still more troublesome, and relatively, more expensive to drive, can be transported as cheaply, in double-tiered cars, as rolling freight; and, by their transportation alive, not only is the offal taken to a better market than it commands in the west, but there is saved also the transportation of 100 lbs. weight of barrel and brine to each hog. This saving would amount to about 50 per cent—an expenditure which is a perfectly needless cost if the hog can be transported alive. There would also be a saving of the expense of repacking, and substituting ocean salt for western boiled salt. This expense has now to be submitted to, before inspection.

Upon the completion of a continuous railway with the East, the pork business of Ohio will be revolutionized. A large portion of the pork-packing business must be transferred to the seaboard cities.

This result, in connection with the influence to be exercised upon other live stock and upon bread stuffs, will give us the following schedule of freight, going east, that can, doubtless, be controlled by the Central Ohio railroad, viz:—

[See foregoing table.]

One-twentieth of the horses, 10,452; 900
lbs. each..... 4,703 tons
One-third of the horned cattle 116-
988, 1000 lbs. each 58,494

Tons, 63,197 at 4 c. per m. \$353,903 20
One-twentieth of the sheep, 54,907—133
lbs. each..... 3,651 tons
One-half of the hogs
462,913—at 200
lbs. each..... 45,291

49,942 at 2 c. per m. 125,637 60
\$479,540 80

*326,000 barrels of flour, 89,200 tons, at
2 cts. per mile—82 miles..... 146,300 12
Tobacco, wool, dried
fruit, seeds, &c., &c.
say..... 6,000 tons.

Return freights for eastern
division, say..... 30,000

36,000 at 4 cts. 133,000 00
Great mail twice daily, \$200 per
mile each line..... 56,000 00

Freight list for western division, not
embraced in the foregoing, 34,940
tons at 4 cents 58½ miles (see page
17)..... 81,759 60

Coal, (see pages 15, 16) 100,000 tons
at 2 cts 58½ miles..... 117,000 00

\$1,012,601 52

* This aggregate is made up from parts of Franklin, Fairfield, Knox, and Belmont, and all of Licking, Perry, Muskingum and Guernsey, and is a low estimate of their surplus; Muskingum alone in 1847 having shipped 213,000 barrels or flour.

Flour could be delivered by railway to N. York via Baltimore at 11½ cents per bbl., and by Philadelphia at 118½, which, independently of the great saving of time—an important element of value to so excitable an article of traffic as breadstuffs—would be 30 per cent cheaper than the present cost by canal, or by the New Orleans route.

Looking to the prospective pressure of traffic towards the Central line, it is not assumed that the whole of this flour will be sent by railway; but that we can control it, if we can furnish conveniences for handling all the through freights that may be presented, as fast as desired.

TOPOGRAPHICAL CHARACTER OF THE WESTERN DIVISION OF THE ROAD.

Between Zanesville and Newark—25 miles—the maximum grade [occurring only on two or three short sections,] is 20 feet to the mile. There is one short curve of 900 feet radius, and two of 1,000 feet. The remainder of the line is either straight or of very easy curvature.

The line from Newark to Columbus—33½ miles—is but three-fourths of a mile longer than the air-line—has only about one and a half miles of curved line, and the remainder straight, of from three to thirteen miles stretch. Maximum grade, 43 feet to the mile.

Gravel for the road-bed is very plenty along nearly the whole line. The bridges are to be Howe's patent. All the materials used and the work done to be of the best description. In every particular, so far as durability is concerned, the directors are resolved to have a first class road.

PASSENGER TRAFFIC.

The best information to be obtained of statistics of travel upon the Ohio river, shows that there is a daily average of, at least, 100 passengers each way, between Cincinnati and Wheeling—an aggregate of 73,000 per annum.

The time occupied on the trip by first class boats, in a good state of water, is usually 30 hours descending, and 46 hours ascending. By railway—259 miles—the time does not exceed 10 hours. This saving of time would, certainly, withdraw from the river two-thirds of its through travel—say per annum, 48,666†

Add through travel, indicated (page 18) for western division..... 22,347

71,013 at \$4 20—\$298,254 60.

Add for way passengers, making 10 miles each, say one-half of the number of through, (the usual proportion being ½ of the whole travel).... 35,506 at 30 cts. ea—\$10,651 80

Freight list..... \$309,916 40
1,012,601 52

50 per ct. off for current expenses... \$1,321,517 92
650,758 96

Net profit..... \$660,758 96
Or 25 per cent.* on cost.

Startling as this estimate may be, to those who do not know the west, the directors of the Central company are so well satisfied of the value of the enterprise they have in charge, and its future business, that they have ordered upon the portion under contract, the rock excavations and the foundations of the bridges, to be made with reference to an early construction of the second track.

VALUE OF THE WESTERN DIVISION, ALONE.

Lines of railway running east and west through Ohio—and intersecting at right angles the public works—without interfering materially with their

* The traffic of the road may prove it necessary to increase the item of machinery beyond the amount estimated. This would reduce the present estimate of profits; but it is not usually considered disadvantageous to a railroad, to be compelled to enlarge its business facilities.

† Should it be objected that this travel, diverted from the river, might be shared by the other two east and west lines, it may be answered, that whatever deficiency shall result from such cause, will be amply made up, in the amount of local travel stimulated into existence by the railway, and for which no estimate is made. A large allowance should be claimed for this, because the immediate belt of country through which the Central road is located is more densely populated than any other in Ohio, of equal extent, except the great Miami Valley.

revenues, (which are mostly derived from local trade,) will find those public works to be important auxiliaries. They will bring to the more direct and more expeditious outlet, the traffic of portions of country which, for years to come, may be destitute of railway facilities.

COAL.

The geological structure of Ohio is, also, such as, necessarily, to induce a large amount of local commerce, upon railways running east and west.

The westerly rim of the great coal-field of the state, entering the eastern boundary in Trumbull county, sweeps south westerly to the line dividing Muskingum and Licking counties, and then southerly to the Ohio river, in Lawrence county. The whole region of country between this river and the lake, and extending west to the Wabash valley, in Indiana, is destitute of mineral coal. The canals of Ohio have already made this article, ultimately to be indispensable, a large feature in their commerce. Coal, introduced by such channels, is already extensively used in Cleveland, Newark, Columbus, Chillicothe and Dayton. At Xenia and Springfield it is furnished by railway from Cincinnati; but as Cincinnati receives its supplies from the upper valley of the Ohio river, the coal trade from that quarter, for interior Ohio, will cease as soon as railway connection is had with the coal mines of Muskingum.

EXTENT OF THE COAL TRADE.

The statistics of the coal trade of Cleveland for 1847, (probably much enlarged now,) show that while the foreign and coastwise demand took away but 336,442 bushels, there were retained for city use 903,180 bushels, or 31,600 tons. The aggregate population of Columbus, Xenia, Springfield and Dayton is, now, nearly four times as great as was the population of Cleveland in 1847; and by same ratio should consume annually 126,440 tons of coal. This ratio would, probably, be reduced at points where the cost of coal, in relation to wood, proves greater than the relative cost at Cleveland; but the deficiency will, probably, be made up by increase upon the ratio at Columbus.

It is, we think, safe to assume that the coal business for the four places which can be reached by us, will give to the central road the transportation of 100,000 tons per annum.

BUILDING STONE.

For building purposes at Columbus, stone has been transported by canal, from Pike county, a distance of 60 miles—and also from Hocking county, a distance of about 40 miles. How far the delivery by railway, from the Licking quarries of a better article at a less price, will make traffic for our road, can only be conjectured—especially for a rapidly growing city like Columbus.

MANUFACTURES.

The city of Zanesville, with exhaustless mines of iron and coal, and blessed with a water power unequalled in the west, is destined to be the most important manufacturing town in Ohio. It holds the first rank in that respect already; and a railway outlet, to the diluvial region beyond the coal field, will furnish at once a very largely-increased demand for her manufactures, and open to her an ultimately limitless market. In addition to the abundance and cheapness of the water power, coal can be furnished at the manufactories at 87½ cents to \$1 per ton; and as the well cultivated country around it, gives a bountiful and cheap provision market, there must be opening for Zanesville manufactures of iron, nails, cotton, glass, white lead, paper &c., a very enlarged range of traffic.

As some evidence of the amount of trade with this place, and its neighborhood, could furnish to the western division of the Central road, independently of the large influences to flow from a railway junction at the important town of Newark, and also at Columbus. The Reports of the Board of Public Works show that, in 1847, the freight handled at Zanesville and Dresden alone, to say nothing of the business of nine other trading points in the county, was three thousand tons more than the whole tonnage business of the Little Miami railroad for the year 1849. And yet that road was able to declare ten per cent dividends upon an amount of twice the estimated cost of the western division of the Central Ohio railroad!

The traffic of the western division of the road is estimated at 34,940, which at 4 cents per mile, would yield a revenue of..... \$81,750 00
100,000 tons of coal at 2 cts..... 117,000 00
Live stock at 3 cents per mile..... 43,032 00
Passengers..... 66,400 00

\$307,896 60
Off 50 per cent expenses..... 153,948 30

Or 17 per cent upon cost.

Report of the Engineer,

ON THE ADVANTAGES OF THE WILLIAMSPORT AND ELMIRA RAILROAD, AND COST OF CONSTRUCTION.

Below we give the substance of the report of the Engineer, T. E. Sickles, Esq., of a survey of the route of the above road, by which it is proposed to connect Philadelphia and Baltimore with the improvements of western New York, by a line through the interior of Pennsylvania. The following is a description of the route, and statement of some of the resources of the section traversed: To the President and Directors of the Williamsport and Elmira Railroad:

The first extends northerly, and intersects the Erie canal and Albany and Buffalo railroad at Geneva, via Seneca lake and railroad to Canandaigua; the second runs eastwardly, by way of the New York and Erie railroad, to the Hudson river; and the third extends westwardly by way of the same railroad to Dunkirk on Lake Erie, and by continuation to Erie in Pennsylvania, and Buffalo in New York.

The southern terminus at Williamsport connects with the Pennsylvania canal; which, running southerly to Chesapeake Bay, joins at the present junction of the Juniata with the Susquehanna, 15 miles above Harrisburg, the railroad to Philadelphia, another to Baltimore, and a fourth to Chambersburg.

As a general proposition, it is readily credited that a railroad seventy-five miles in length, opening a channel of rapid and unfailing communication where none previously existed, between lines of internal improvements extending from the termini for many hundred miles in either direction, through a region thickly settled and possessing great agricultural and mineral resources, would prove a profitable investment for capital, provided its construction was attainable without overcoming great physical obstacles.

The Williamsport and Elmira railroad not only possesses the general advantages of a road thus located, but will attract to itself, on completion, an amount of business which, to those most familiar with the resources of the region through which it passes, fully justify an entire confidence in the great value, importance and public utility of the road.

It is proposed to exhibit briefly, and in general terms, the character of the business upon which reliance is placed to render the road a profitable investment for capital.

In addition to the ordinary way-freight and passenger business, the chief source of revenue will be derived, 1st, from the transportation of anthracite and bituminous coal, and of iron to Elmira, to supply the demand of interior New York, and the return freights of salt and plaster to Williamsport; and 2d, from the great through passenger business between western New York, and places south of Philadelphia.

The former can't await the construction of this railroad for its development, while the latter requires, in addition, the construction of a railroad 80 miles in length from Williamsport to Duncan's Island, to direct it from the present circuitous route.

It will be seen on examination that the Williamsport and Elmira railroad passes through the bituminous coal region of Pennsylvania, where it approaches nearest to the State of New York. In Ralston, on the line of the road, where the mines have been worked for many years, the character of the coal and its superior quality for domestic use, and for the generation of steam are well established; while the facility with which it

is mined, and certainty of position, give assurance of profitable returns to operators, whenever the means are provided for its transportation to a market.

Western New York must soon receive its fuel from the coal fields of Pennsylvania, and this must come from those above described. The nearest deposits of anthracite coal to New York, are the Wyoming and Middle coal fields of Pennsylvania, whence the distance to Elmira from the former, by way of the North Branch canal and New York and Erie Railroad, is one hundred and twenty-six miles, and from the latter, by way of the West Branch canal and Williamsport and Elmira railroad, is one hundred and thirty miles. In this point of view, it is a work of great importance to the people of this State, in opening to them a cheap and inexhaustible supply of coal, which, for all purposes of fuel, must soon take the place of wood.

The following shows the relative distances by this route, from some of the principal towns of western and central New York, to Philadelphia and Baltimore:

	Miles.
From Geneva to Baltimore, via New York and Philadelphia.....	535
From Geneva to Baltimore, via Williamsport and Elmira railroad.....	319

Difference in favor of route by Willmpt.....	216
From Utica to Baltimore, via New York.....	427
From Utica to Baltimore, via Williamsport and Elmira railroad.....	427
From Elmira to New York, via New York and Erie railroad.....	283
From Elmira to Philadelphia, via Williamsport and Elmira railroad.....	279
From Elmira to Baltimore, via Williamsport and Elmira railroad.....	257

Between Geneva and Baltimore, which are points common to both lines from western New York to Washington, the distance at present travelled over is greater by two hundred and sixteen miles than by the route passing through Williamsport.

The distance from Williamsport to Elmira is 75 miles. Of this distance, 25 miles is built, and has been in use several years, leaving only 50 miles yet to be opened.

The route is favorable; the grades in no case exceeding 52 feet to the mile, and but one of this character. For extent of mineral riches, it is unsurpassed; as a part of a great through route it is now one of no small consequence, and must receive a large amount of travel between two widely separated sections of country, in the summer time particularly. It will, at all seasons, give to the people of its line a choice of markets between New York, Philadelphia and Baltimore—a matter frequently of very great advantage to the farmer. It is important, too, as connecting the systems of internal improvement of two great States. The road, we understand, is now under contract, to be pushed forward with as much dispatch as possible. The officers of the company are:—President—Ellis Lewis, Lancaster, Penn.; Secretary—Archibald Robertson, Philadelphia; Treasurer—J. B. Mitchell, Philadelphia; Superintendent—Robert Faries, Williamsport.

For Sale.

TWO Locomotive Engines—104 tons weight, built by Baldwin. Also Four Eight-wheeled Passenger Cars, with side seats, all in good running order. Apply to WM. E. MORRIS, Office of Philad., Germantown & Norristown Railroad Co., 9th and Green sts., Philadelphia. 3m5

Iron Trade of Pennsylvania.

DOCUMENTS and Statistics relating to the Manufacture of Iron in the State of Pennsylvania—giving a history of the manufacture from its commencement to this date, illustrated by diagrams. Also tables giving the address and capacity of every establishment in the State. Prepared by direction of the late convention of the trade held in Philadelphia. For sale by

LINDSAY & BLACKISTON, Philadelphia.

FIELDING LUCUS, Jr., Baltimore.

HENRY G. NICHOLS, 79 Water st., N. Y.

or at this office—price \$1 00.

It will be sent by mail to any order enclosing the money, and post paid.

Wanted.

A Second-hand Locomotive, weighing from 10 to 15 tons. A note, addressed A. B., at "Railroad Journal" office, will receive attention, if sent soon. January 21, 1851.

AMERICAN RAILROAD JOURNAL.

Saturday, February 1, 1851.

Jeffersonville Railroad.

We have often spoken of this project, and we again refer to it for the purpose of pointing out its important relation to the railroads of Indiana, and the general railroad system of the whole country, and as a great trunk line for the railroads of that State to the city of Louisville, the leading city of the lower Ohio, and the commercial mart of a large portion of Indiana. In the absence of any larger town within the borders, Louisville and Cincinnati are the two great commercial towns for the trade of Indiana. Louisville, as far as distance is concerned, occupies much the best position in reference to this trade, in being much nearer the centre of the State. It has the additional advantage of being situated on the falls of the Ohio, below which, the navigation is much more unobstructed than above, and being, for this reason, a cheaper shipping point for goods intended to be forwarded via New Orleans. The Jeffersonville railroad runs from the Ohio, opposite Louisville, to Columbus, on the Madison road; and, in connection with it, forms an almost straight line to Indianapolis, a distance of 110 miles, thus bringing the central portion of that State into direct communication with their appropriate market. A glance at a map of Indiana will convey a much better idea the importance of this connection, than we can give by any description. It opens an outlet, and in a proper direction, for the central and richest portions of the State. For local traffic, few roads can show more flattering prospects, or presents better promise of a large and profitable business. We believe it would be difficult to present a similar work where the section of country traversed possesses greater resources for the profitable employment of a railroad.

But these considerations, which are believed to fully warrant the construction of this work, hardly arrest attention in a general "coup d'œil" of the project. In looking at a map of Indiana, the fact that first strikes the eye, is the great number of lines of railroad radiating from Indianapolis. This town is so situated, that a mutual interest attracts to it nearly all the important lines in progress in the State, though this interest is not based upon any commercial inducements which it holds out. The Ohio river and the lakes are, and must always be, to a great extent, the natural outlets for Indiana, and these are the proper termini of its railroads. Indianapolis is simply a point of intersection.

For all these roads the Jeffersonville is their vir-

tual extension, their truck line to the leading town, and commercial centre of the lower Ohio. It is the *trunk* of the great *tree* of railroads which are now overshadowing the whole State; and for their trade and travel, in connection with Louisville and the railroads radiating from that city, it is the appropriate and natural avenue.

The general route of this road not only coincides with the line of convenience, but it is the only good outlet yet found, or that is believed to exist, between the central portions of the State and the Ohio river, until we approach the valley of the Wabash. The whole northern bank of that river is skirted by a continuous range of high hills, broken only by the gorge traversed by this road. The Madison road gains the top of this ridge by an inclined plane of 446 feet. All the other lines leaving the Ohio, with the exception of the Evansville, encounter very severe grades. The summit by which this ridge is passed by this road, is only 172 feet above the Ohio, and is the highest point in the whole line of 66 miles. The ruling grade in the direction of the traffic is 30 feet to the mile, and only 26 in an opposite direction. These facts show the excellence of the line, and the cheapness with which the road can be operated. The road will be only 1½ miles longer than a straight line. For that part of Indiana, the business of which is attracted to Louisville, it must be the great outlet, and this, without a rival. Such being the fact, from the natural configuration of the country, the amount of its prospective every person can see must be very rich.

We have thus far confined ourselves to a statement of the prospects of the road, from its local business; but the great lines now in progress in different parts of the country, and which require to be united to each other to give them their full efficiency and usefulness, have given to the Jeffersonville an importance in public estimation greatly exceeding that arising from its local considerations. The great lines of railroad running east and west are more intimately connected with our foreign commerce, while those running west and south, coincide with the natural lines of our internal trade. As we travel in this direction, each succeeding mile presents its appropriate product; the aggregate of all being considered necessary to supply the wants of each individual. The north furnishes the south with wheat and stock. The south sends to the north cotton, rice and sugar. In traversing three or four States we have all the productions of the temperate and torrid zones. The people in the southern States are now actively engaged in finishing railroads north, for the purpose of opening avenues for the trade of which we have spoken. Nashville, Tennessee, is soon to have a railroad to Savannah and Charleston, and to Mobile, on the Gulf of Mexico. To meet these lines and extend them to Louisville, the most active measures are now in progress, and Louisville has just voted the sum of \$1,000,000 to this object. The great inducement to this is the belief that the road to Nashville will, in connection with the Jeffersonville, place Louisville on the great avenue of railroad communication between the north and south, and secure to her all the advantages that must result from such a position. For the purpose of securing, with still more certainty, to herself this end, she has also voted to the Jeffersonville road the sum of \$300,000, to aid in the extension of its line from Columbus to the Ohio State line at Union, via Cambridge City or Richmond, a

distance of 90 miles. At the latter point the road will intersect with the central Ohio lines running west, and the line from Cincinnati, via Hamilton, to Indianapolis. At Union it will unite with Bellefontaine and Indianapolis railroad, connecting with the lakes and the roads of northern Ohio. The amount voted to the Jeffersonville road is ample, with which can be raised on the line of the extension, to secure it construction. In a north-westerly direction the Lafayette railroad will be eventually extended to the south shore of Lake Michigan, thus opening a communication with the roads running around the south end of that lake, and extending east and west through Illinois and Michigan.

An examination of a map will show that the Jeffersonville is the bond of union between the railroad systems of the opposite portions of the country. Louisville is, to a great point of radiation, south and east; Indianapolis north, north-west, and north-east. Upon this road, therefore, must be thrown, to a very large extent, the accumulated business of all these lines.

Reading Railroad.

An amendment to a bill passed last year, extending the payment of the bonds of the Reading, due last year, until 1870, the object of which was to restrain the company from making dividends on the stock while any of the bonds of 1850 remain unpaid, was called up in the Pennsylvania House on Wednesday, and defeated by a vote of 33 to 60.

The Stock and Money Market.

The fancy stock market has had a strong downward tendency this week. Of railroad stocks the greatest decline has been in the Erie and Reading, which in a short time have fallen 8 or 10 per cent. Other stocks on the fancy list have also dropped off rapidly.

This decline does not indicate so much the actual state of the money market, as the distrust, which the excessive prices, at which stocks have been sold, have created on the part of banks and monied men. It has been easy for sometime to see that a revulsion must follow the existing state of things; and our banks and capitalists have been preparing for it by calling in their loans, and confining their favors to the wants of legitimate business.

We are sorry to see the prices of the Erie stocks so much under the control of speculators. There has been no reason in the condition, management or prospects of the road, why the rise in the stocks should not have been gradual and regular, from the point of its recent lowest depression, up to the present moment. In all these respects, it has been constantly growing in the public confidence. The extent of its final success, is, as is that of all unopened roads, problematical; but until the road is opened, there is no reason why the well-founded anticipations, which can be neither proved nor disproved, except by results to take place, should not keep this stock at a reasonably fixed point, dependent upon the abundance or scarcity of money only. It is certainly much more for the interest of the public as well as for the company that the improvement should be regular, even if slow, rather than the fluctuations which we constantly witness, should occur.

Speculations in stocks is the worst form of gambling, and is only tolerated upon the principle, that "one murder makes a villain—thousands, a hero." If similar combinations should be formed for the purpose of putting up the price of provisions or or-

dinary merchandise, which are an every day occurrence on the stock exchange, the parties would be ridden on a rail, or indicted as nuisances.

Think of the fact, that a large and influential body of men spend their whole lives in efforts to depreciate the price of property below the true value, and an equally large and influential one, in efforts to palm it off beyond its worth! If our Legislature should affix the penalty to the act that the offence deserves, and which it does to some not half so aggravated, it would make the selling of stocks deliverable on time, by a person who neither owns, nor expects to own a dollar's worth, an indictable offence. He sells "on time," upon the expectation of being able before the maturing of the contract, to depress the stocks so much, that the purchaser will be glad to "settle his account," that is, "buy off," and vice versa, with the purchaser. It is fatal to the character of a stock to have it become the subject of such operations, and in the end too often it becomes fatal to the value of the property which it represents.

Money for all legitimate purposes is still sufficiently abundant. Securities of new roads continue to be in fair request, western securities regarded with increased favor. The adaption of railroads to the wants of the west, the cheapness with which they are built, the large business which must be thrown upon them, the prudent and economical manner in which they are managed, will soon make their stock the favorite investment for capitalists. There are too many people who must make money out of the construction of our eastern roads, to allow their cost to be confined within reasonable limits. It costs, too, a vast sum to disturb the vested rights of an old and thickly-settled community. In the west, none of these items as yet make up the cost of a railroad; consequently all saved here, is so much added to the value of the investment.

The principal sales for the week have been a large amount of bonds, say 4 or \$500,000 of the Ohio Central railroad, and a sale of a smaller amount of Jeffersonville city bonds, on account of the Jeffersonville railroad. The rates have not been made public; but we have good reason for saying that they are fully up to our quotations, which are from 85 to 90 net for 7 per cents. At these rates there appears to be as yet no great difficulty in making sales.

The action of Congress seems to forbid the idea of any change in the tariff during the present session of Congress. Rails continue without much change, and may be purchased deliverable free of charge, in all our leading Atlantic ports, at from \$40 to \$41 per ton. We do not now anticipate much change for the present in this article, though the general opinion seems to be, that any change will carry up the price rather than depress it.

"Stocks," says the Boston Courier, of the 30th inst., "were in good demand yesterday, the market was quite buoyant, and the transactions were large. There were large orders at the board, principally from New York, for the Edgeworth land stock, and nearly two thousand shares were purchased at prices ranging from \$11½ to \$12½. Canton stock receded a little, but the general impression appears to be, that much higher points of advance are yet to be reached, before any permanent decline will be sustained.

Western railroad shares are in demand at \$107. The receipts of this line are rapidly increasing. Last week the income was \$3000 more than it was in the corresponding week of 1850. There has been a steady gain in receipts since 1st December, to which time the annual accounts were made up.

SALES OF STOCKS IN BOSTON.

	Jan. 23.	Jan. 30.
Old Colony Railroad.....	66½	68
Boston and Maine R.R.....	106½	106½
Eastern Railroad.....	103½	104
Fitchburg Railroad.....	111½	111½
Michigan Central Railroad....		98
Northern Railroad.....	74	72½
Vermont Central Railroad.....	37½	36½
Vermont and Mass. R.R.....	32	31½
Western Railroad.....		107
Ogdensburg Railroad.....		39½
Rutland Railroad.....		56
Portland, Saco & Portsmouth R.R.		99
Boston and Worcester Railroad.	106½	106½
Rutland Railroad Bonds.....		89
Vermont and Mass. R.R. Bonds.		
Sullivan R.R. Mortgage Bonds..	79½	
Ogdensburg Railroad Bonds....		92½
Vermont Central R.R. Bonds....		92½
Norfolk County R.R. Bonds....		69
Boston and Providence R.R.....		84½
Philadelphia, Wilm'gton & Balt.		31½
Concord R.R.....	53½	53½
Connecticut river R.R.....	78	78
Cheshire R.R.....	65	64
Boston and Lowell.....		115
Boston, Concord & Montreal....		41
Nashua & Lowell.....		109

SALES OF STOCK IN NEW YORK.

	January 24. Sales.	January 31. Sales.
U. S '67 Loan.....	116	115½
Erie R.R.....	89½	83
Harlem R.R.....	71	65
Stonington.....	46	46
L.I. R.R.....	24	21
Norwich & Wor.....	67½	63½
Albany & Sch'y R.R.	92	94
Del. & Hudson.....	135	134½
Rochester and Syracuse	115	
N. Y. and New Haven	117½	116½
Reading.....	69	58½
Morris Canal.....	22	19
Erie income.....	99½	98
Madison and Indiana		101½

Massachusetts.

Boston and Worcester Railroad.—The annual report of the operations of this company for the past year, states the income for the year ending Nov. 1, 1850, to be as follows:

Passengers.....	\$397,248 78
Freight.....	330,780 61
Rents.....	10,984 03
Mails.....	10,513 42
	<hr/> \$749,526 84

Reserved income last year, after deducting for ferry at Albany, paid Western railroad.....	\$2,408 66
Premium on sale of bonds over expenses of sale....	8,419 95
	<hr/> 10,828 63

Total income.....	\$760,355 47
Working expenses.....	377,041 08
	<hr/> \$383,314 39

Deduct interest.....	\$21,297 73
" July dividend of 3 per cent.....	135,000 00
" January dividend of 3½ per cent.....	157,500 00
	<hr/> 313,797 73
	<hr/> 69,516 66

The increase of income over the last year has been:

From passengers.....	\$66,642 43 or 20 per cent.
The decrease from freight has been.....	557 40 or 1-6 of 1 "

The total gain from passengers, rents and mails, over last year is \$67,415 69. The increase on passengers has been \$51,359 43, on the local business, and only \$15,263 on business from connecting roads. The local freight receipts were less, and

from connecting roads, more. The fares were raised last January, and experience has satisfied the directors that it has increased the receipts and been satisfactory to the public. This increase has not been from any additional trains run, as the whole number of miles run has been 3,996 less than last year.

The expenditures for repairs, &c., have been heavy; 358 tons of new rails have been laid over 12,000 new sleepers, two new stone bridges have been rebuilt, and the track at the Boston depot renewed, &c. The equipment of the road has been kept in efficient repair, and provision made for new engines, &c., and notwithstanding all these outlays, the general result is that the expense account, compared with last year, shows a diminution of \$28,510 27, with increased income of \$46,165 09.

The construction account has been reduced \$25,684 17. The branches here show, with the exception of the Brookline and Milford, that the expenses of running exceed the income, yet the Brookline branch has made a profit of 6 per cent., and is increasing.

The liabilities of the company are, the—

Funded debt.....	\$373,000 00
Floating ".....	91,984 29
Balance due other roads.....	108,674 56
	\$578,658 85

To meet this, the company have stock of the corporation, issuable in connection with the funded debt, 375 shares; cash on hand, notes receivable, individual accounts, Norwich and Worcester railroad bonds, &c., &c., \$700,704 77. From which should be deducted, the—

January dividend.....	\$157,500 00
Balance of income.....	69,516 66
Amount credited to depreciation account.....	19,950 00
	246,966 66
	\$453,738 11

Which makes the difference between the means and liabilities, \$124,920 74, and to pay which balance, they have the remaining bonds and stock authorized by the stockholders, \$125,000; and in addition they have—

Iron, fuel, &c.....	\$117,247 51
Lands belonging to the company, estimated at.....	278,230 62
	\$395,478 13

With these resources, it is believed that the stock need not be increased over \$5,000,000.

The directors conclude their reports as follows:

"We congratulate the stockholders on the fair prospects and increasing income of the road. The last year may be considered a favorable one, especially in passenger business. It would be unreasonable to anticipate an increase during the current year, equal to that of the year just past. But we cannot doubt that we shall continue, as in past years, to realize a healthy sound growth in the business and resources of the road.

The net earnings of the year have been about 7½ per cent. Had we thought it a sound policy to disregard the depreciation of equipment, and work the road with a more strict regard to present profit, rather than to its permanent condition and future expenses of repair, we might have shown a profit of 8 per cent. We could have divided this year 7½ per cent., had we not been satisfied of the soundness of the policy stated last year, of having in reserve a fund to meet contingent liabilities, to which all roads are exposed, from fire or serious casualty.

But we were satisfied that you would prefer the ultimate safety of your investment, and the permanent soundness of the stock, to immediate profit. We have therefore withheld the sum of \$69,516 66 (all but \$10,828 63 of which is from the regular earnings of the year just passed,) as reserved income."

Old Colony Railroad.—The annual report of the Old Colony railroad has been published. The receipts for the year ending Nov. 30, 1850, were:—

From passengers.....	\$196,432 09
" freight.....	65,430 81
" gravel.....	23,108 27
" mails, rents, &c.....	11,199 27
	\$296,170 79

The expenses have been

Interest on bonds.....	\$19,798 00
Rents to South Shore and Dorchester and Milton Railway (estimated).....	27,593 86
General expenses.....	168,281 21
	\$215,703 07

Leaving net earnings for the year....	\$80,468 72
Deducting amount credited to contingent fund.....	10,000 00
	\$70,468 72

Balance.....	\$70,468 72
The receipts in 1849 were.....	\$275,067 58
Expenses, less rents and interest.....	167,486 71

Which makes an increase of receipts over last year of about \$22,000, and the expenses about \$850. The amount of stock on hand of various kinds amounts to \$36,579 26. The balance of income on hand, after making sundry deductions, leaves a balance of \$21,216 18, which has been charged off for general depreciations. The whole floating debt has been paid, with the exception of some unsettled claims, but the cash on hand and some due, perfectly good, will more than pay every claim known to exist, excepting bonds.

The whole amount of bonds due January 1, 1854.....	\$328,800
Bonds of the D. and M. R. R. endorsed by the Co.....	30,000
Bonds to the South Shore, guaranteed by the Co.....	6,800
	\$365,600

Total.....	\$865,600
The whole number of shares outstanding, 18,542.....	\$1,654,200

Railroads in Georgia.

The Macon Journal gives the following table showing the extent of railroads in operation and progress in Georgia.

1. Central road from Savannah to Macon, completed.....	191 miles.
2. Georgia road from Augusta to Atlanta, completed.....	171 "
3. Macon & Western road from Macon to Atlanta, completed.....	101 "
4. Western & Atlanta road from Atlanta to Chattanooga, completed..	140 "
5. South-Western road from Macon to Oglethorpe, nearly completed.	51 "
6. Muscogee road from Columbus to Fort Valley, on South-Western in progress.....	71 "
7. Atlanta & West Point road from Atlanta to West Point, in progress.....	65 "
8. Milledgeville road from Gordon to Milledgeville, in progress.....	18 "
9. Eatonton road from Milledgeville to Eatonton, in progress.....	23 "
10. Wilkes road from Double Wells to Washington, in progress...	18 "
11. Athens branch from Union Point to Athens, complete.....	39 "
12. Burk road from 80 mile station on Central road to Augusta in progress.....	53 "
Total completed and in progress....	960 miles.

From this, it appears that Georgia has in operation the Central, Georgia, Macon & Western, and Western & Atlantic roads and the Athens branch, making an entire distance of 642 miles. The South-Western, 51 miles, will be in operation in 90 days. The Atlanta and West Point road, 30 miles—the Muscogee road, 25 miles—the Burke road, 23 miles, and Milledgeville road 18 miles, making a total of 147 miles, will be put in operation the present season. This will make the

whole extent of railroad in operation in Georgia by 1852, 789 miles, leaving 174 miles to be completed. This will, no doubt, be accomplished in two years, when the system of internal improvements in the State will be almost completed.

The roads already in operation are all prosperous, and are realizing from 8 to 16 per cent. clear profits per annum. Thus is demonstrated the wisdom and importance of a proper system of improvements. Georgia, after expending nearly fourteen millions of dollars, is now twice as rich as when she commenced her noble enterprises.

[To the above list should have been added the Rome branch road, completed, 17 miles. This will make the length of railroad now in operation 659 miles.—Eds. REPUB.]

Missouri.

This hitherto apparently remote State is soon to be one of the foremost in railroad enterprises. The two leading lines engrossing the attention of her people are, the road leading from St. Louis to the west line of the State, or the south bank of the Missouri river, and the other from Hannibal, on the Mississippi, to St. Josephs.

At the recent session of the legislature, the governor of the State recommended that "For every \$50,000 collected and expended upon the road by the company, let the State issue its bonds to the company for such amount as will, by a proper calculation, afford the means, from time to time, of carrying on the work to its completion."

That this proposition will meet the approval of the legislature, there seems to be no doubt. A bill to this effect has been favorably reported upon by the committee on internal improvement, at the head of which is Mr. Allen, the president of the Pacific railroad (the line running from St. Louis.) The report we give below.

The following report was submitted in the Senate, on the 8th inst., by Mr. Allen, of St. Louis, from the committee on internal improvements:

Mr. President—The committee on internal improvements, to whom was referred the bill to expedite the construction of the Pacific railroad, and also the bill to expedite the construction of the Hannibal and St. Joseph railroad, have had the same under consideration, and instruct me to report the same back to the Senate, united in one bill, with such amendments only in the phraseology as were necessary to suit the change in their relations, and recommend the passage thereof.

The committee authorize me to add further, that they are unanimously of the opinion that these two railroads are modes of improvement of the most profound interest and importance, perfectly within our ability to accomplish, and clearly of general and permanent utility. The late experience of the world has placed railroads far beyond all other modes of locomotion and transportation. For passengers, and the more valuable articles of merchandise, they are far superior to the most splendid water courses. Wherever located, they exercise an astonishing influence in ameliorating the condition of society, in stimulating productive industry, in developing the resources of a country, and in augmenting the public wealth. They are not less valuable to an agricultural community than to one engaged exclusively in commerce. The former is obliged to pay for the transportation of his produce to market, and also for the transportation of the commodities which he procures in exchange for his own consumption. He is thus doubly interested in diminishing its cost. Taking every thing into consideration, railroads are a cheaper mode of transition and transportation than any other. They are uniform in their charges, punctual and expeditious in their work, and while they may be considered as almost perfectly safe, as well in regard to human life, as in reference to the carriage and delivery of property, they also afford a wonderful saving of time, labor, money, and wear and tear of mind and body.

By calculations made upon the experience of

railroads in England, it is regarded as a truth sufficiently exact for all practical purposes, that the chances against a passenger losing his life in travelling 300 miles upon a railroad are 217,879 to 1; and out of 400,000 packages of merchandise transmitted by railroad, only 1 was lost.

Missouri, at this time, occupies a rare position. As is remarked by the Governor, the eyes of the nation are now upon her. Her destiny is deeply depending on the movement she now makes. The question of location for a continental road to the Pacific, is now pending in Congress. A survey of the southern route is now going on, and is partly completed. The northern project, with which the name of Whitney is identified, is recruiting new strength. It is for Missouri to say whether she will interpose at this time, a voice louder than can be raised from any other State west of the Mississippi.

Railroads have been resorted to by nearly every State in the Union, as the greatest modern levers of power to speed them onwards in the race of civilization. Over two hundred roads are now in active and useful operation in the United States, constructed at a cost of something like three hundred millions of dollars. They are compensating the States which have created them a hundred fold, while they are earning at the same time a fair profit on the capital invested. In this spirit of enterprise and race of public improvement, Missouri is behind nearly all her sister States. The committee confidently hope, that from this period, she will enter upon a new career, and take that high rank which she is evidently capable of assuming, and which her geographical position and unexampled natural resources will enable her easily to maintain.

The two railroads contemplated, seem to the committee to be entitled to the aid of the State. The companies engaged in them are further advanced in their organization and preparations for work, than any in the State known to this committee. Such is the interest felt in them by the people, and such their means already subscribed, that the committee are firmly of opinion that the passage of the bill herewith reported will ensure the construction of both these works within a period to be limited only by the practicability of procuring labor. The credit of the State is firm and good. Her bonds can be easily negotiated, and the money realized as needed by the companies, and the companies assume to exonerate the treasury of the State from the payment of a dollar in cash. No new taxation is proposed—none will be necessary, though the resources of the State will be increased. The works themselves are looked upon abroad as works of great merit. The passage of this bill will give to them a new confidence, and bring to them fresh support. Subscriptions to the capital stock will immediately increase; the general Government may immediately follow with her proposed grants of public lands; and of course, as the resources of the companies thus increase, the necessity for the issue of all the bonds authorized by the bill will be proportionably diminished.

In regard to the mode proposed of aiding these works, the committee feel assured that the experience of other States has proved it to be decidedly the best. The expenditure of private capital to the amount of one-half or one-third the cost of the work, has been found to ensure an economical management. By a loan of the public credit upon the security furnished by the works themselves, the State does not become involved in the direction. Private interest is generally found to be more keenly alive to the proper direction of works of this character than the public, acting through officers who do not always feel an immediate responsibility. The bill is framed in accordance with the recommendation of the Governor, and with the forms of proceeding in similar cases, in States of high character for their enlightened experience and just administration of public affairs.

Although there are some subjects of a kindred nature before the committee, they are of opinion that these two railroads ought to be distinctly presented, and considered separately from other schemes of internal improvement. And, although the committee feel disposed to encourage all practicable measures of improvement, yet they strongly

hope, and respectfully recommend, that the present bill may not be clogged or encumbered with them. All of which is respectfully submitted.

THOMAS ALLEN,

Ch'n Committee on Internal Improvement.

January 8th, 1851.

The construction of these roads, looking, as they do, to a terminus on the Pacific coast, is a matter of great interest to the whole country, and gives a new importance to the lines now in progress, and which are to connect them with the great Atlantic cities.

Albany and Schenectady Railroad.

The annual report of this company we have received, and it presents the annexed favorable results:

The receipts for the six months ending the 31st of January, 1850, have been as follows:

From passengers.....	\$71,519 89
From freight.....	38,370 23
For mail service.....	1,700 00
For rents.....	1,565 29
	<hr/> \$113,155 41

The disbursement for operating the road and re-laying three miles of track have been.....	\$42,097 26
Interest paid on bonds....	23,050 56
Amount contributed to reserve fund.....	2,500 00
	<hr/> \$67,647 82

Net earnings for six months.....	\$45,507 59
Equal to 4 per cent.	
Deduct dividend of 3½ per cent.....	35,000 00

Balance	\$10,507 53
Being a surplus from the net earnings of the half year's business to be carried to the credit of reserve fund, which will leave the balance to the credit of that fund of \$36,696 17.	

The receipts for the fiscal year commencing February 1, 1850, and ending January 31, 1851, have been.. \$214,786 52

Repairs, expenses, interest and contribution to reserve fund to August 1, 1850, as per report.....	\$63,067 63
For iron to re-lay track, charged to expenses, being balance on hand, Aug. 1, 1850.....	3,563 48
Repairs, expenses, interest and contribution to reserve fund, February 1, 1850	67,647 82
	<hr/> \$134,278 93

Balance	\$80,507 50
Being net earnings for the year of 8 per cent on the capital stock of the company, out of which 7 per cent dividends have been declared to the stockholders, amounting to.....	\$70,000 00

Balance to credit of reserve fund.	\$10,507 50
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The receipts for 6 months, ending Jan. 31, were.....	\$113,155 71
The estimate 1st Aug. last was.....	108,900 00

Excess of receipts over estimate..	4,255 71
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The receipts for the 6 months, ending Jan. 31, 1851, were.....	\$113,155 71
The receipts for corresponding period, ending Jan. 31, 1850, were.....	95,862 70

Increase 18 per cent.....	\$17,293 01
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The business of the year has met the most sanguine expectations of the friends of the road; the increase has been 10 per cent, and the average annual increase for seven years has been 17 per cent per annum. There does not appear any reason why the increase of the present year should not be as large as the preceding one; on the contrary, the opening of the Rome and Cape

Vincent road to Watertown early in the spring, and the re-laying of the Saratoga and Schenectady road with heavy T rail, forming a connection at Schenectady with this company, would warrant an estimate based upon larger anticipated increase. To be within, rather than beyond, what will be realized the coming year, we present an estimate based upon an increase of only 12 per cent, viz:

Receipts for the year ending Jan. 31, 1851	\$214,786 52
Twelve per cent increase.....	25,774 38
	<hr/> \$240,560 90
Deduct for expenses, repairs, interest, &c., (which were \$134,278 the past year)	\$140,000 00
	<hr/> \$100,560 90

Leaving a net balance, equal to 10½ per cent, upon the capital stock.

The present road, bed and track, are in excellent condition, and will require no material repairs during the ensuing year. Arrangements are now making to lay, with heavy iron, the remaining 8 miles of double track, which, it is expected, will be completed early in the coming season—this done, the company will have a double track, of the first class in every respect, throughout the entire length of their road, and and equipment of the best quality, and in perfect order, amply sufficient for the increasing business of the company.

Hanover Branch Railroad.

This railroad will be 13 miles long, to extend from the village of Hanover, in York county, to the Baltimore and Susquehanna railroad, which it is to intersect about 20 miles south of York. The directors have placed the work under contract, and appointed T. E. Sickels, of this city, engineer of the road.

The route was examined instrumentally about a year ago, and it was ascertained that a line could be located without requiring steep grades or curves of less radius than 1,000 feet, while the cost of construction per mile would be much less than the average cost of railroads in that State.

The village of Hanover is surrounded for many miles by a populous and highly productive agricultural region, for which this road will become the outlet. There is no doubt but that the increased facilities for the cheap and rapid transportation of commodities to the Baltimore market to be afforded by this railroad, will secure profitable returns for the investment required in its construction.

Massachusetts.

The Worcester and Nashua railroad company held their annual meeting in this city on Thursday, and chose the following gentlemen directors for the ensuing year:

Stephen Salisbury, of Worcester; Isaac Davis, of Worcester; Jacob Fisher, of Lancaster; Thomas Chase, of Nashua; Alexander DeWitt, of Oxford; Edward Lamb, of Boston; Seth W. Fowle, of Boston; George Bowen, of Worcester; Edward Freeman, of Springfield.

The meeting was fully attended, and there was considerable discussion on a proposition to instruct the board of directors to make arrangements to carry passengers and freight between Worcester and Boston and Nashua and Boston, by way of the Fitchburg railroad from the junction at Groton, at the same rates as are charged on the direct routes between those places. Without coming to a decision, the meeting adjourned to Friday in Nashua.

Barre and Gardner Railroad.—The following gentlemen were chosen directors, at a late meeting of the proposed railroad from Worcester to Barre and Gardner:

John W. Lincoln, Stephen Salisbury, Wm. A.

Wheeler, W. T. Merrifield, H. N. Tower, of Worcester; John Brooks, of Princeton; Seth Caldwell, J. W. Jenkins, Jr., John Smith, of Barre; Nathaniel Hammond of Boston; Joab S. Holt, of Holden; Henry Prentiss, of Hubbardston; Levi Heywood, of Gardner; John W. Lincoln, President; Caleb Dana, Treasurer and Clerk.—*Worcester Palladium.*

Ohio.

Railway from Sandusky to Toledo.—A survey of that portion of the Lake shore line, from Sandusky to Toledo, under the superintendence of William Durbin, Esq. has been completed, the substance of which we give below. It will be seen that there exists no objection to this line on account of expense of construction. Below we give a portion of the report of Mr. Durbin:

The line of survey starts near the intersection of Tiffin avenue and Mill street, on the west line of the corporation of Sandusky; thence to Venice, crossing Coal creek, near its outlet; thence curving towards the north, with a radius of 5,730 feet, it reaches the south shore of Sandusky bay at Reed's Point—distant four miles and 304 rods from the starting place. It then crosses the bay from Reed's to Mixer's Point, a distance of 7,380 feet, and, pursuing the same course for three-fourths of a mile farther, it curves to the west with a radius of 5,730 feet; thence in a direct line to Port Clinton, the county seat of Ottawa. The line crosses the Portage river near its mouth, and following the south shore of Lake Erie, a mile and a quarter, it then bears to the south, occupying, for two miles, the timbered ridge between Portage river and Le Carp marsh; thence in a direct line crossing Le Carp creek at a favorable point a few rods north of the Port Clinton & Toledo free turnpike bridge, 27½ miles to the east bank of Maumee river, opposite to Toledo. The whole distance from the western line of Sandusky city, to the east bank of Maumee river is 43 miles and 5,200 feet.

Of this distance,

41 miles 3,760 feet are straight line.	
0 " 2,200 " curvature of 8,600 ft. rad.	
1 " 4,550 " " " 5,730 "	
43 " 5,200 "	

TABLE OF GRADIENTS.

Level, to 2 feet per mile, 27 miles, 5,268 feet	
2 feet to 5 " " " 8 " 3,432 "	
5 " to 8 " " " 5 " 3,694 "	
8 " to 10 " " " 0 " 4,752 "	
13.5 " " " at Maumee r. 3,894 "	
43 " 5,200 "	

From the above table it will be seen that

64 p'r c't. of the grades do not exceed 2 ft. per mile.	
83 " " " " 5 " " "	
96 " " " " 8 " " "	

The greatest elevation attained, above the waters of Lake Erie is 37.45 feet. There is one continuous grade line 12 miles long, ascending 22.5 feet from the 23d to the 35th mile—less than two feet per mile—and so nearly does the natural surface of the country conform to the gradient that, excepting the crossings of Crane and Cedar creeks, the embankment on these twelve miles is less than four feet at its highest point. The ravine of Crane creek is 600 feet wide, with an average height of embankment of 8.4 feet; that of Cedar creek is 630 feet wide, with an average filling 9.6 feet.—These are the two heaviest embankments on the route.

An effort was made to obtain a straight line from Port Clinton to Toledo—31 miles—but the marshes of the Portage on the left, and of Le Carp on the right rendered it expedient to locate the road on the ridge dividing these streams; this is done by using a reverse curve of 8,600 feet radius which gives us dry timbered land for our line and lengthens it only 190 feet. From the west end of the reverse curve we have one straight line, of 27½ miles, to Maumee river.

The crossing of Sandusky bay is regarded by some persons as a serious obstacle, in the construction of a railroad on the direct route between Sandusky and Toledo.

Aside from the fact that numerous similar crossings have been made without difficulty, in other sections of the country, a careful examination of this particular locality, and a series of soundings taken at short distances, have satisfied me that it is entirely feasible to construct a permanent railway across it, between Reed's and Mixer's "Points," at a moderate cost. The greatest depth of water in our line of crossing is 10.6 feet, and the average depth of the whole distance is 8.23 feet. The bottom is composed, chiefly of stiff clay of great tenacity, into which we forced an iron rod from two to five feet: this in some places is over laid with a softer material.

No rock, or stone, was detected in any of our soundings, nor is there any reason to apprehend the least difficulty from that source in driving piles.

By a combination of cribs filled with stone and piles firmly driven, it is believed that a substantial and entirely safe foundation for the road can be made. It is proposed to place the cribs, or piers, 200 feet, and the piles 7 feet apart from centre to centre, in the direction of the road. A draw-bridge, with an opening of sufficient width to pass the largest craft that can navigate the upper bay and river, will be placed in the channel, and the entrance to it so protected by long and solid piers on each side of the railway, that vessels can approach, or leave, it with safety and without improper delay. It will also be necessary to place a draw-bridge at the crossing of Portage river, and the accompanying estimate embrace the cost of such a structure.

The estimate for graduation contemplates a width of 22 feet, at bottom, in excavations, and 15 feet, at top, on embankments, with the usual slope for each.

ESTIMATED COST.

Clearing, Grubbing & Graduation.....	\$45,137
Masonry and Bridging.....	34,687
Ballasting 42½ miles.....	34,020
Cross-ties.....	19,890
Side tracks, water stations, engine-houses & turning platforms.....	5,700
Right of way, salaries, engineering and contingencies.....	12,000
Total cost.....	\$151,434
Or \$3,442 per mile.	

English Railways.

Herapath's Railway Journal publishes a table showing the traffic returns of the principal English railroads for nine years past, together with the number of miles of new railway annually opened. By this table it appears that the whole extent of line in operation at the commencement of 1843 was 1,417 miles. Since that time the number of miles opened were, according to the above table, in 1843, 56 miles; in 1844, 194 miles; in 1845, 263 miles; in 1846, 593 miles; in 1847, 839 miles; in 1848, 975 miles; in 1849, 835 miles; and in 1850, 1,078 miles; but the latter include several railways which were open in 1849, but the traffic returns were not published. The number of miles opened during the past year in the United Kingdom was about 591. The annual increase in the traffic receipts has been very considerable, partly arising from the continued development of traffic on the trunk lines, and partly from the additional receipts derived from the opening of new lines and branches. The increase of traffic in the year 1843 over that of the preceding year amounted to £500,874; in the year 1844, to £768,337; in 1845, to £1,058,342; in 1846, to £1,020,650; in 1847, to £1,285,797; in 1848, to £1,083,335; in 1849, to £954,811; and in 1850, to £1,741,418.

The average traffic receipts per mile per annum were as follows:—For 1842, £3,118; for 1843, £3,085; for 1844, £3,278; for 1845, £3,469; for 1846, £3,305; for 1847, £3,870; for 1848, £2,556; for 1849, £2,302; for 1850, £2,227.

The amount of capital expended on the railways referred to in the table up to July, 1842, was £52,380,100; in 1843, £57,635,100; in 1844, £63,489,100; in 1845, £71,646,100; in 1846, £83,165,100; in 1847, £109,523,000; in 1848, £148,200,000; in 1849, £181,000,000; and in 1850, £219,762,730.

The average cost of the railways per mile in operation would appear to be, in 1842, £34,690; in 1843, £36,360; in 1844, £35,670; in 1845, £35,070; in 1846, £31,860; in 1847, £31,709; in 1848, £34,234; in 1849, £35,214; and in 1850, £35,229. The increase in the average cost per mile is a bad feature in railway statistics, because it shows that the continual additions to the capital accounts of the old and completed lines, far outweigh all the professed advantages of constructing thousands of miles of new lines and branches, at considerably less cost than the average expenditure per mile on the old trunk lines.

In addition to the above there are a number of lines that made no traffic return. The extent of these lines is 495 miles. The length of these, added to the above, would make the aggregate length of line 6,753 miles; the cost, £330,522,731; and an average receipt per mile of £1,944, and a cost of £34,238.

Lead.

Another extract, bearing the date, (Dubuque, Jan. 12,) announces recent discoveries of lead, giving a description of one of the heaviest leads that has ever been struck in the mining country: "This lead was struck by Thomas Evans, (an old miner). After the shaft was sunk directly into the cave, as it is a continuance of caves, a general invitation was given to all who wished to see it before removing any of the mineral. The first day, 270 persons, ladies and gentlemen, myself among the number, visited it. The shaft enters a large cave, from 12 to 15 feet high, and almost completely covered with mineral. There is one piece, lying along the north wall, 48 feet long, and, without exaggeration, I would say that it is three feet square. This cave is eighteen hundred feet long, but the mineral does not show in the entire length. There is one more place which I must speak of. There are two sheets hanging down from the cap, about 6 feet 10 or 12 inches thick, and 60 feet long. They are as white as snow. The cave is about 15 feet wide, and, in most places, is completely covered, bottom and top, with the precious stuff. I think he can take one thousand dollars worth a day for twenty days in succession. There have been several leads struck in this part of the mines this winter, but the mines through Wisconsin and Illinois have not done much."

Zinc Compounds not Injurious to Health.

At a late meeting of the Academy of Sciences at Paris, M. Sorel, replying to some authors who, at preceding sessions of the Academy, had made observations tending to show that zinc was not innocuous, stated that, for fifteen years, he had employed in his establishment, for the galvanization of iron, several hundred workmen, a large number of whom were engaged in pulverizing and sifting the gray suboxide of zinc, for galvanic painting, and in no instance had any of the workmen of the establishment, although in the midst of an atmosphere containing much of the oxide, suffered at all from it. The white oxide of zinc had also been fabricated for some months, without any ill effects, although the men breathe considerable quantities of the oxide.

Population of Missouri.

The population of this State by the last census, is 681,547. The increase for the past 40 years is as follows:

1810.	1820.	1830.	1840.	1850.
20,845	66,856	140,455	384,702	681,547
Of the aggregate, 593,930 are free, and 87,617 slaves.				

English Railroads.

The Railway market has been the scene of great excitement this week, prices having gone higher than they have been since the commencement of the memorable panic. As an instance, we may mention that London and North Western Stock, which closed on Friday last, at 120, opened on Monday morning at 122, and within an hour were done at 127, while the closing price to-day is 126 to 127. Great Western Stock has also had a sudden elevation. Shares which a few weeks since were thought dear at 50, have met with eager buyers at 77. The same kind of change is observable in the quotations of nearly every description of shares—very much to the satisfaction of shareholders and "the Bulls." The cause of this sudden alteration is evidently the increasing confidence of the public, who have come into the market and taken up shares. This has made stock scarce for transfer; and the gloomy opinion of "the Bears," which were so generally adopted some months since, being now regarded as fallacious, those who sold stock under a panic, are now replacing it as they can. The speculators come in to assist them in raising prices, and hence it is not at all improbable that the quotation may go much higher between this time and the next payment of the railway dividends in January.—*London Atlas, December 14.*

Census of Maryland.

Counties.	White population.	Free colored.	Slaves.	Total population.
Alleghany....	21,752	397	734	22,873
A. Arundal....	16,542	4,602	11,244	32,388
Balt. City....	141,441	24,625	2,946	169,012
Balt. Co....	34,222	3,600	3,767	41,589
Carroll....	18,676	965	975	20,616
Caroline....	6,096	2,788	808	9,692
Calvert....	3,610	1,520	4,488	9,618
Cecil....	15,482	2,612	843	18,937
Charles....	5,665	913	9,584	16,162
Dorchester....	10,788	3,803	4,282	18,873
Frederic....	31,595	3,637	3,261	38,493
Harford....	14,414	2,785	2,166	19,365
Kent....	5,598	3,132	2,627	11,357
Montgomery....	9,435	1,311	5,114	15,860
Pr. George....	8,902	1,138	11,510	21,550
Q. Anne....	7,040	3,174	4,271	14,485
St. Mary's....	6,280	1,590	5,811	13,681
Somerset....	13,417	3,453	5,588	22,458
Talbot....	7,087	2,590	4,134	13,811
Washington....	26,969	1,885	2,089	30,943
Worcester....	11,824	3,593	3,453	18,870

Total white population, 416,835; do. free colored, 74,113; do. slaves, 89,685—total population in 1850, 580,633. White population in 1840, 317,717; do. free colored, 63,020; do. slaves, 89,495—total population, 469,232.

Total increase in 10 years, 111,401. Increase in white population, 99,118. Do. in free colored population, 12,093; do. in slaves, 190. Over 39,000 of the gain in the State is due to the City of Baltimore.

The representative population of Maryland is 534,759, so if the ratio under the new apportionment comes up to 100,000 this State will lose one member of Congress.

Population of Missouri.

The St. Louis Republic contains returns of the population of the State of Missouri with the exception of seven counties which are reported or estimated, and the footings are as follows:

	Total inhabitants.	Free inhabitants.	Slaves.
1850.....	681,547	593,930	87,617
1840.....	383,702	325,462	58,240
Gain 10 ys.	297,845	268,468	29,377

The representative population of Missouri is 656,500, so she will probably be entitled to seven members of the House of Representatives under the new apportionment. She has now but five.

Census of Kentucky.

The following are the statistics of the population of this State by the census of 1850:

Total population of the state.....	993,344
Total number of Free inhabitants.....	782,107
" " Slaves.....	211,237
" " Deaths during the year....	15,271
" " Farms in the state.....	82,059
" " Dwellings.....	130,743
" " Establishments of productive industry.....	3,495
Total population in the state in 1840.....	779,828
Total number of Free inhabitants in 1840.....	597,570
" " White ".....	590,253
" " Slaves ".....	182,258
" " Free colored persons in 1840.....	7,317
Total increase of inhabitants in ten years.....	213,516
Increase of free ".....	184,537
Increase of slaves ".....	28,979
Representative population in 1840.....	699,608
" " 1850.....	908,849

Population of the United States by the new Census.

The Washington correspondent of the Evening Post gives the following approximate statement of the population of the several States and Territories under the new census. We think he is below the mark, but give his figures unaltered:

Some weeks ago I forwarded you certain tables of estimates and returns of the seventh census, which I supposed would be gratifying to the curiosity of your readers. I now send you some additional information on the same subject, which will prove, I think, useful and interesting to them:

	1850.	1840.	Increase per cent since 1840.
Maine.....	583,000	502,000	16
New Hampshire.....	317,000	285,000	13
Massachusetts.....	995,000	738,000	32
Rhode Island.....	147,000	109,000	32
Connecticut.....	386,000	310,000	25
Vermont.....	314,000	219,000	8
Total of N.E. States.....	2,742,000	2,235,000	
New York.....	3,099,000	2,429,000	27
New Jersey.....	480,000	373,000	31
Pennsylvania.....	2,260,000	1,724,000	31
Ohio.....	2,150,000	1,519,000	41.5
Delaware.....	90,000	78,000	15

	1850.	1840.	Increase per cent since 1840.
Middle			
Free States.....	8,033,000	6,123,000	
Indiana.....	938,000	686,000	44
Illinois.....	850,000	476,000	68
Michigan.....	397,000	212,000	87
Wisconsin.....	335,000	31,000	884
Iowa.....	200,000	43,000	360
California.....	200,000	25,000	800

	1850.	1840.	Increase per cent since 1840.
Western			
Free States.....	2,940,000	1,473,000	
Total			
Free States.....	13,770,000	9,831,000	

	1850.	1840.	Increase per cent since 1840.
Free.			
Maryland.....	593,000	91,000	594,000 32
Virginia.....	997,500	494,000	1,494,000 23
North Carolina.....	532,000	288,000	870,000 14
South Carolina.....	280,000	359,000	639,000 5
Georgia.....	533,000	350,000	888,000 30
Florida.....	40,000	30,000	70,000 40
Alabama.....	438,000	931,000	769,800 30

	1850.	1840.	Increase per cent since 1840.
Eastern			
slave States.....	3,373,000	1,946,000	5,319,000
Mississippi.....	230,000	253,000	483,000 30
Tennessee.....	770,000	220,000	999,000 21
Kentucky.....	740,000	220,000	960,000 25
Missouri.....	600,000	72,000	672,000 84
Arkansas.....	152,000	46,000	198,000 96
Louisiana.....	217,000	210,000	427,000 23
Texas.....	100,000	70,000	170,000 125

	1850.	1840.	Increase per cent since 1840.
West'n			
slave States.....	2,809,000	1,091,000	3,900,000
Total of Slave States.....			9,219,000
Total of Slaves in 1840.....			7,331,000
Increase in 10 years, 25-7 per ct.....			1,888,000

TERRITORIES.

Minnesota.....	6,000
Utah.....	30,000
New Mexico.....	90,000
Oregon.....	15,000
	141,000
Add for Free State.....	13,770,000
	13,911,000
	9,219,000
Total population of the U. S.	23,130,000

This shows an increase of all classes of population, exclusive of Indians, of 6,067,000, or about 35 per cent. The number of inhabitants in Texas, California and New Mexico, when these territories were acquired by the United States, may be set down at about 150,000, and that number has been allowed for in the calculation of the absolute and relative increase during the ten years.

Movable Fire Boxes.

We have received a printed explanation of the late invention of movable fire boxes for locomotive and marine boilers. The inventor is John J. Dehaven of Philadelphia. The pamphlet is accompanied by a report of Gen. Boumfort, superintendent of the Columbia and Philadelphia railroad, where the new fire boxes have been tried with entire success on the engine Muhlenburg.

The invention is important and its general introduction is no doubt but a little way off. Its principal advantage are the substitution of Anthracite for Bituminous coal, thereby saving 30 to 50 per cent in the cost of fuel: and the saving of time in replacing a movable fire box with a new one, which can be done in any ordinary engine in 24 hours, instead of laying by for a much longer time undergoing repair. These advantages are of special importance, and the absence of just such an invention has hitherto prevented the general introduction of Anthracite coal for fuel, notwithstanding its acknowledged advantages over every other. We have no doubt the subject will receive the early attention of the public, such as its importance demands, and the general substitution of the movable fire boxes supersede the use of all others. The inventor will sell the right to States or companies. Models can be seen and information obtained at his residence, Oxford street, Kensington, Philadelphia.—*Pottsville Journal.*

Railways in France.

In the course of the present year of 1850, the following lines have been opened for traffic:—From Chalons on the Maine to Vitry, from Metz to Nancy, from Nerondes to Nevers, and from Chauny to St. Quentin—making a total length of railway, of 152 kilometres or nearly ninety-six English miles. In the course of next year, there can be little doubt that the following lines will be completed and opened: namely, the sections of line from Vitry to Bar, from Metz to St. Avoin, from Strasbourg to Sarrebourg, from Tonnerre to Dijon (the capital of ancient Burgundy), from Tarascon (on the Rhone) to Beaucaire, from Tours to Poitiers, from Angers to Nantes; and in all probability, to these will be added the line from Chartres to La Loupe, making altogether a length of additional line of 513 kilometres, or 333 English miles, for 1851. The *Journal des Chemins de Fer*, commenting upon their prospects, remarks, that these works are but the legacy of past railway enterprise, and, with the exception of a short trunk line of 10 kilometres, from Guentuin to Nevers, are in no wise indebted for their existence or advancement to the new administration of public works in France. For three years the Government have set on foot not a single railway undertaking; they have carried on the works on the Lyons line with no inconsiderable difficulty, and they have been under the necessity of abandoning altogether the lines from Bordeaux to Cete, the Lyons and Avignon, the Dijon and Mulhouse, the Western line, and the line from Cayenne to Rouen—all classed, credit voted for them, and even adjudicated upon—conceded, or on the point of being so, at the commencement of the year 1848. From a table

compiled by our Paris contemporary, we find that 16 lines of railway, representing a total capital at par of 713,000,000 francs (£28,520,000 sterling). The market value of that capital before the revolution stood at 743,000,000 francs (£28,640,000), showing a premium of £120,000 sterling. Under the depressing circumstances of the political crisis of 1818, the destruction of property, and the threatened expropriation of the railways, without a fair compensation by the State, the market price fell in December, 1818, to 485,395,000 francs [say £19,440,100], showing a depreciation of 288,595,000 francs [say £9,080,000], upon the par value of the stock, and of 238,075,000 francs [£9,200,000], on the market value in January, 1818. In December, 1849, after a year of regular government, the market value rose to 542,855,000 francs [£21,714,200]. In December, 1850, after two years of regular government, the market value is only 574,135,000 francs [£22,965,400], showing a depreciation of 139,765,000 francs [£5,590,600], on the par value, and 169,335,000 francs [£6,773,400], on the market value of the same stock before the revolution.

Coal Trade for 1851.

The quantity sent to market, this week, is 25,417,215 tons, showing a falling off of about two thousand tons. This is caused, in some measure, by the mild weather, and the determination on the part of the dealers not to accumulate much stock at Richmond during the winter season. The operators are making their arrangements for the spring business; but until the rates of toll and transportation are promulgated, nothing definite can transpire with regard to the state of the trade. We are credibly informed that the rates by railroad will not exceed \$1 50, and may be less, in order to check the current in favor of the new road to Philadelphia. The rates by canal will be 95 cents per ton less than by railroad. Negotiations are pending between the different regions to limit the quantity, and arrange prices, but it is doubtful whether they will succeed. The Delaware and Hudson company consider themselves strong—calculate upon a considerable increase from the Pennsylvania company, located at Pittston, and also from their own works. They have also declared recently, that they are entitled to the New York market, and are determined to have it. The high rates charged by our carrying companies will give it to them in a short time, unless a remedy for the evils under which we labor is applied in time. The following is the amount sent by railroad for the week ending on Thursday morning last:

	Week.	Total.
Port Carbon.....	10,254 18	84,367 02
Pottsville.....	1,649 11	23,686 03
Schuylkill Hayen.....	10,556 10	88,210 12
Port Clinton.....	3,526 07	35,978 19

Total.....25,417 15 231,250 11
To same time last year 111,213 04

[Pottsville Journal.]

First Idea of the Electric Telegraph.

Since the success of the Magnetic Telegraph, various claimants have come forward to contest the honor of the discovery of the original idea. By a paragraph in the London Philosophical Journal, translated from a German work by Schwenter, and published in 1636, it will appear that the crude idea of the electric telegraph was entertained previous even to that date, for Schwenter himself quotes from a previous author.

"How two people might communicate with each other at a distance by means of a magnetic needle: If Claudius were at Paris and Johannes at Rome, and one wished to carry some information to the other, each must be provided with a magnetic needle, so strongly touched with the magnet, that it may be able to move the other, from Rome to Paris. Now, suppose that Johannes and Claudius have each a compass divided into an alphabet according to the number of the letters, and always communicated with each other at six o'clock in the evening: then, (after the needle had turned 31 times from the sign which Claudius had given to Johannes) if Claudius wished to say to Johannes, 'come to me,' he might make his needle stand still, or move till it came to c, then to o, then to x, and so forth. If now, the needle of Johannes' com-

pass move at the same time to the same letters, he could easily write down the words of Claudius and understand his meaning. This is a pretty invention; but I do not believe that a magnet of such power could be found in the world."

Pneumatic Pile Foundations.

The system of foundation described in the article below, which is copied from the December number of the Civil Engineer and Architect's Journal, although extensively used in Great Britain, is but little known and wholly unappreciated in this country. That it only requires to be understood by our engineers to ensure its use, is certain from results obtained in England, where hollow iron piles, three feet in diameter, have been sunk to the depth of 78 feet, through a material that would not admit the penetration of a screw, or of a wooden pile, to a greater depth than 20 feet. After hollow piles have been sunk any required distance, they may be exhausted of their contents, and filled with concrete, which, before the decay of the exterior iron shell, would form an artificial stone pile of great strength and durability.

This system is economical as well as durable, and may be used with great advantage to obviate the necessity of resorting to timber cofferdams, which hitherto have been supposed the only available means of advancing a secure foundation in certain localities. The foundations in shifting sands, or in permanent sands of great depth, or for structures exposed to marine action and ice floods, iron piles filled with concrete afford the highest degree of security.

Mr. T. E. Sickels, engineer, U. S. Dry Dock, Brooklyn, is the agent for this country of the proprietor of the patent.

A most important fact is recorded in connection with the progress of the Midland Great Western railway bridge over the Shannon, in the sinking of cylinders of 10 feet in diameter for the foundations. This has been done with Potts's pneumatic process, by Messrs. Fox and Henderson, the contractors, who have likewise, we believe, the working of the patent. We mentioned some time ago that these cylinders were in progress of construction, and looked forward with some interest to their application in practice.

In reviewing Mr. Edwin Clark's work on the Britannia bridge, we had the opportunity of describing the large cylinders which are being put down by Mr. I. K. Brunel, on the Wye, for that remarkable structure which he is now carrying out. The sinking of those cylinders as there described is not in the nature of pile driving; and although they are of a very large size, yet the 10 feet cast iron cylinders of Messrs. Fox and Henderson are the largest ever applied in the nature of pile foundations, and on this account their success is of material interest to our readers.

The bridge is, we understand, of iron, and of large dimensions, and is supported entirely on cast iron cylinders, and of the diameter mentioned. The cylinders near the shore have been put down by excavating, and the application of weight; but those in the bed of the river by Potts's process. We need scarcely inform our readers that, in this simple process, an air-pump is employed, which being connected with the head of the hollow pile, the air is exhausted, and a stream of water, sand, shingle and gravel, rushing up from below, the pile sinks gradually into the displacement made to any required depth. It is therefore a kind of sub-aquatic excavation, the lower end of the hollow pile being converted into a kind of scoop worked by the air-pump on the platform above. The exhaustion employed was 26 inches of mercury, equivalent to 13 lbs. to the square inch; and the cylinder was driven down between 5 and 6 feet in a few minutes, or rather suddenly, until checked by a piece of submerged or drifted wood. The operations were under the direction of Mr. J. Milner, C. E., the contractor's engineer; and the bridge abutments, which are of stone, under Mr. Dargan, the eminent

Irish contractor. The cylinders will be filled in with concrete.

Hitherto the piles employed for Potts's process for sea beacons, for the Maeldraeth Viaduct, the Black Potts bridge, and other structures, have been of very small diameter, so that the proceedings we have just described are of the greatest importance. A cylinder of ten feet diameter gives a large bearing, and four such cylinders will carry a large tablier or platform for a pier, and which can be put down without cofferdams or other preparatory works, thereby greatly reducing the expense of submarine foundations. Here neither cofferdams, caissons, steam engine pump, nor diving-bells are wanted, only an air-pump of adequate power, which can be easily carried about and rigged anywhere. It will be obvious that unless sunk from the inside, (when there would be as much trouble for pumping as by the pneumatic process, and very much labor and expenditure of time,) any external application of power would, if it could be employed, exercise a very unfavorable effect upon the material of the cylinder. Indeed, a force of much less than 13 lbs. to the square inch would smash a hollow iron cylinder to pieces. Then again it is to be observed, that ten feet is by no means the limit of the diameter to which the cylinders can be carried, so that it is open to engineers to design works in situations and under economical conditions, where hitherto the resources of art were insufficient to meet the emergency.

From the Practical Mechanic's Journal.

Timothy Hackworth.

The name of this engineer, closely wedded as it is with those magnificent strides towards the perfection of railway locomotion, which we, the dwellers in the first half of the nineteenth century, have experienced—has attained an eminently proud position in modern mechanical history. We need merely refer to our "Chapter in the History of Railway Locomotion,"* to show that his connection with that branch of political science, which he did so much to advance, dates from a time when mechanics had very feeble pretensions to the rank of a science. The same paper, in its illustrations of the "Sanspareil," is unmistakable evidence of the successful result of his labors, and of the amount by which he left the pursuit better than he found it.

Timothy Hackworth was born at Wylam, a small village on the northern bank of the Tyne, west of Newcastle, and contiguous to the ancestral seat of the Duke of Northumberland, on the 23d of December, 1786. His father, who enjoyed no inconsiderable reputation for his skill in boiler-building and mechanical construction, held the foremanship of the smiths in Wylam colliery. There is, in fact, an historical line of descent in the family, with regard to the occupation which formed the basis of his profession. Like other village youths, he was initiated into the mysteries of the rudiments of education by the village schoolmaster, and, at the age of fourteen, was apprenticed as a smith at Wylam colliery.

The distinctive features forming the inherent qualities of his mind were early displayed in an aptitude and acuteness in mechanical construction, which brought him considerable repute; and the passionate ardor with which he grasped at a thorough knowledge of his art, formed a pleasurable theme for his father, who, however, died when his son was no more than 16 years old.

His sensitive nature acutely felt this mournful deprivation, and he thenceforward had to discharge the duties of father and protector to the surviving family. On the completion of his apprenticeship, he was raised to the rank of foreman smith, and took a very prominent part in the introduction of the locomotives at Wylam colliery, the fame of which having reached the ears of the colliery owners, they determined to make trial of the new-fangled power for conveying the coals from Wylam to Lemington. For this purpose, one was ordered from Messrs. Trevithick and Vivian; but it is a matter of local history that this engine never reached its destination; being tried at Newcastle-on-Tyne, the experiment proved its destruction, and instead of proceeding to Wylam, it was employed in a foundry at Newcastle.

* Page 49, Practical Mechanic's Journal, June, 1850.

Although thwarted in this, the spirited owners yet determined to prosecute their original plan, and Wylam became the theatre of locomotive experiments. Up to the period of which we speak, Mr. Hackworth's experience and practice had been chiefly confined to colliery operations, and it was not until the latter part of 1811, that he first took part in locomotive mechanics, when he assisted Mr. T. Walters in building the first locomotive ever employed at Wylam. The boiler was of malleable iron, with cast iron ends, and dragged its load by the adhesive power of the wheels. These were the days of one-cylinder-and-fly-wheel locomotives. This engine, although of some note as a first production, was of questionable utility. Immediately after this, another engine was built by Mr. Hackworth and Mr. Jonathan Forster, in which considerable improvement was made. The fly-wheel was abandoned, and two cylinders were applied, fixed at the boiler sides, and working with levers, and giving out the power to the wheels by an arrangement of spur gear. The generative steam power of the boiler was far from complete, yet the success of this engine was considerable, as she was capable of taking a load of from 12 to 16 chaldron waggons, on the distance of four or five miles, from Wylam to Lemington. Others were made, and the then novel machines, christened the Dillies, took the place of the horses and bullocks hitherto employed, the interest and astonishment which they excited being only equalled by their successful adaptation. Engines on this plan, with very little variation, may still be seen regularly working on the Wylam railroad. The great success attendant upon these experiments gave an impetus to the system, and the other colliery owners in the north were led to its adoption. Those of Kinton and Fawdon collieries had two locomotives manufactured by Messrs. Fenton, Wood, Murray & Jackson, of Leeds, on Mr. Blenkinsop's principle—a rack rail being extended the whole length of the line, into which spur wheels, driven by the engines, worked, and thus produced locomotion. After this, a locomotive engine was made at Killingworth colliery, by Mr. George Stevenson, which, like those at Wylam, worked by adhesive power. She was tried in July, 1814. Thus the machine was rapidly introduced in those districts.

It was at Wylam colliery that the efficiency of the adhesive principle for locomotive engines was first demonstrated, the application being undoubtedly due to Mr. Hedley, the colliery viewer. He first had a machine made and worked by manual power, to ascertain how much weight its wheels would overcome; then, by comparison of the weight of the machine to the load, found how many carriages the locomotive engine would drag by its adhesion upon the rail. This machine, as well as a small model, was made by Mr. Hackworth; and the model, yet in existence, was exhibited at the last Polytechnic Exhibition held at Newcastle.

About this period an incident occurred, which strongly exhibited Mr. Hackworth's rectitude and integrity; for, having been requested to do a piece of work on the Sunday, he firmly declined, on the ground of the sacred character of this day. In consequence of this, he removed to Walbottle colliery, where he obtained the foremanship of the smiths, which he held with distinguished merit.

In 1824, Mr. George Stephenson, who had commenced a manufactory at Newcastle, desired the agent of Walbottle colliery to lend him Mr. Hackworth to superintend this establishment during the time he was surveying the Liverpool and Manchester railway. This was granted, and the borrowed engineer undertook the management. In this capacity, his energy and perseverance, combined with his manly talents, raised him into honorable notice, his position affording a wide field for their display. On Mr. Stephenson's return, he was very anxious to retain Mr. Hackworth in his service, and offered him considerable inducements to continue—even half his own interest in the manufactory. For reasons best known to himself, he declined this proposal.

At this time an exploring expedition to the gold and silver mines of Venezuela, Trinidad and New Granada, was started in the neighborhood, and the superintendence was offered to Mr. Hackworth; but he declined its acceptance, and Mr. R. Stephenson undertook the charge.

After the completion of his engagement with Messrs. Stephenson and Co., he was for some time engaged in building boilers for the Tyne Iron Company; and had taken an establishment in Newcastle, intending to commence business on his own account, having obtained several orders, when he was induced, through the agency of Mr. George Stevenson, to accept the office of resident engineer and general manager of the Stockton and Darlington railway, in consequence of which his intentions were prematurely abandoned, and in June, 1825, he removed from Newcastle to Darlington. Then began that laborious research and vigorous investigation of the principles of locomotive mechanism, with a view to their adaptation to the requirement of public traffic; and how well he succeeded, was admirably attested by the general celebrity of the locomotives upon this line. His duties were of a most arduous and fatiguing character, such as can scarcely be conceived at the present time, considering the then raw state of everything connected with railways; without any assistant so far acquainted with the system as to sustain a part of its duties, almost the entire guidance and direction devolved upon himself. The herculean labors which he performed during this epoch in railroads, marked the force of mind which could gather mere fragments of ideas, and connect their disjointed parts, working out of them a beautiful and effectual system of public conveyance.

The general inferiority of the locomotives first employed rendered the question of practical adequacy doubtful. Whether iron-muscles, steam-actuated joints, or dame Nature's most useful brutes, were to have the ascendant in railway propulsion, was resolved by him. He saw and studied the imperfections which deteriorated their efficacy, and by remedying those in a master-stroke of his own, settled the question of expediency between the rival forces. The locomotive forces on the Stockton and Darlington railway, worked on an extent of 20 miles, whilst five miles of the line consisted of inclined planes, in which stationary engines were employed. Among the many contrivances in railway machinery, stand conspicuous the double-acting drums for inclined planes, first put down on the Brusselton incline in 1826.

In order clearly to understand the importance of this invention, it will be necessary to give some account of the old drum, which was superseded. Hitherto the practice was to have only one drum, which was fixed vertically, working each side of the incline alternately. Those conversant with mechanics can alone appreciate the value of Mr. Hackworth's invention, for it will be apparent to practitioners that a great loss of power was consequent on the old mode, as the whole of the work had to be done by the engine. Not only was it very slow, but great difficulty was experienced in getting the rope to coil properly upon the drum, which it was necessary to watch and keep right with a crowbar. In the place of this he put down the double-acting drum—two drums on one horizontal shaft. The diameters of the drums being proportionate to the respective lengths of the inclined planes, the momentum of the descending waggons considerably aided the engine in hauling the ascending waggons.

A far greater improvement still was the alteration which he made in the drum of the Etherley Incline immediately after. Here, the laden waggons having to descend the long bank, their momentum was such as to draw the laden waggons up the short bank, irrespective of the power of the engine, the latter being only required to draw the empty waggons up the long side, and had the assistance of the empty waggons descending the short bank on the other side.

Another simple and ingenious instrument was the discharge-hook, or dog, for instantly detaching the rope from the waggons without stopping, as well as the drag-frame, or cow, attached to the last carriage of the train whilst ascending the incline, to arrest its destructive descent in case of rope breakage. Another useful provision was the switch, fixed a short distance from the top of the incline, and having a rod connection to a lever at the top, by which the waggons could be thrown off the line when they happened to run over the bank-head. By a similar arrangement at the bottom, they could be thrown off when they chanced to

escape the first switch, and prevent a collision with the waggons at the foot of the incline.

A great improvement in mechanics was the "Royal George" locomotive engine, which will ever remain an enduring trophy of his powers. Considering the comparative infancy of her contemporaries, as regarded their suitability for public traffic, she stood pre-eminent as the boldest step in mechanical construction ever concentrated in one single effort, and marked an era potent with the most sanguine results, as a point from which other improvements were rapidly starting. Holding, as she then did, the foremost rank in locomotives, we might be allowed, perhaps, to classify these improvements. There were six wheels, all coupled, yielding an increase of adhesion of paramount importance in every state of the weather. Then a vast increase of evaporative power of the boiler, by a new description of heating surface, as well as the never-to-be-forgotten blast or draught pipe, first brought to bear upon this engine, which enabled her to work effectually at 9 miles per hour, for 20 miles, with a load of 24 chaldron waggons, at an economy rarely exceeded yet, notwithstanding the successive gradations through which the system has passed since this engine, on the Stockton and Darlington railway, first led the way. From this display of locomotive talent, he advanced into the contending ranks of the competitors for the £500 premium offered by the Liverpool and Manchester railway company, in 1829.

To be continued.

European and North American Railway.

We have, in a former number of our paper, alluded in another connection to the speech of the Hon. F. O. J. Smith, made at the Portland Convention. Our readers will all thank us for giving them his speech, as reported among the published proceedings. The profound philosophy and strong sense which characterised the whole speech, made its delivery one of the most interesting events of the occasion:

Mr. Smith said, we all know, and feel the great amount of thanks due to the able delegates from the neighboring provinces, for the instructive and interesting information and enlarged views they have afforded this Convention on yesterday and the preceding day; and I need not attempt to add to the general expression of obligations felt towards those gentlemen. But, sir, I feel a profound regret personally in having been deprived unavoidably this morning, of listening to the eloquent speech of the honorable gentleman from Massachusetts, Gen. Dearborn, who has, as I learn from all sides of the Hall, and from all classes outdoors, done honor to his state, and honor to himself, and afforded the highest satisfaction to all who had the opportunity of listening to him. Although not strictly a citizen of Portland myself, yet, as her neighbor and her friend, I do feel justified in returning most heartfelt thanks in behalf of our city to the honorable gentleman from the Old Bay State—the parent of Maine—for his great good service, rendered on this occasion. Nay, more; I congratulate not only the citizens of Portland—not only the citizens of Maine—not only the citizens of New England, but the citizens also, of all states of this Union, and of the British government, on the proud promises of this occasion. In the annals of mankind—since the first dawn of civilization, there has not been a spectacle that surpasses in moral and political grandeur—or that ought to surpass in moral and practical effects, the exhibition which the three memorable days of this convention have made to the world. Were all the blood shed at Calvary, and which then was taken up as by a universal atmosphere, and diffused throughout the world of man, and which has since circulated through the veins of all the different races of our kind, were to be gathered into one stream and poured out here upon your table, as upon a common altar, the evidence of kindly feeling, the spirit of "peace on earth and good will towards men," could not be more satisfactorily impersonated by it, than has been exhibited here, on this occasion. Sir, considerations of higher influence, of greater value than the mere construction of a railroad here presented themselves and impressed themselves upon the feelings and hearts of us

all who have been in attendance here; and if no railroad, such as has been sanctioned by the voice of this convention should ever be constructed, I should consider that we have all been gainers by the manifestations, and better knowledge of each other which this occasion has made. It has bound together as in a new marriage, the citizens of different nations, and as was well proclaimed by a previous speaker, what has been joined together in the presence of both God and man, let no man hereafter put asunder. (Cheers.)

Mr. President, it is unnecessary for me to attempt to elucidate by details, or statistics the magnitude of the benefits, or the promising characteristics of the great enterprise before us. It is enough for me to know—it is enough for the business men and capitalists, on both sides of the Atlantic, to appreciate that it is a proposition to save *one-fifth part of the time*, hitherto employed in making a business intercommunication between the great markets of the world. This twenty per cent saving is consideration enough, and of itself, to insure success to this project, at an early day. It is an inducement sufficient to enlist the sympathies, and attract the attention of the whole commercial world. And the work is one of which all may be proud to aid in consummating.

True it is, when we contemplate the works of art of ancient days, we are overwhelmed with astonishment. As we trace on the pages of history, the dimensions, and contemplate the giant proportions of these monuments of human industry, piled up like primeval mountains in the shape of mounds, and columns, and walls of defence, and temples erected to unknown gods—and obelisks to the memory of mortals whose names and memory have been blotted from both history and language—and for a moment we almost wish we could have been born unto conceptions thus stupendous. That we could have lived in days thus signalized by great works of art and industry.

For a moment, we feel as if we were but pigmies compared with the ancient races of men—that our great works compared with these vestiges of their great works, are but as artificial mole hills to natural mountains.

But, sir, let us pause in this comparison. The true distinction of greatness—the real characteristics of sublimity lie not in the material proportions of things, but in their spiritual power, to produce great moral and useful results. The tiny teeth of the noiseless field-mouse, that gnaw assunder the cord that binds the lion, are greater for the purpose of freedom, than the strength of the lion himself.

The little hillock of moveable earth that produces the grain, on which the stalled ox is fed, is far more potent to sustain all the results that depend on human life, than the island of rock that has withstood the surges of the ocean, from the dawn of creation until our own day! (Cheers.)

Sir, what were these mounds, and columns of ancient days—even the walls, like unto the vestiges and history of Ninevah and Babylon, in point of utility and moral power, compared with the shortest railroad of our own day, out of which one steam locomotive only has had a birth and employment?

Is there one additional ray of divinity traceable to the hearts of the race of men, from any of these massive works of ancient art, over which the brows of thousands must have sweated, and the hearts of thousands must have fainted from toil?

Sir, so far as we know, they express nothing but the tyranny of some despot over his subjugated fellow-men—evidences of the terrors of power to intimidate the oppressed. No one impress of divinity was upon them—they served but the purposes of a temporary human pride—they contributed nothing to ennoble or dignify human nature—and hence they crumbled back into dust with their vain glorious authors, or fell beneath the neglect which awaits the heartless and soulless creations of individual ambition and vanity every where, and in every age.

Mr. President, it was left for our age, if not for our particular generation, to exercise and enjoy that new birth to man in this world, and on this side of the grave, which adds more than four-fold power and four-fold duration of his previous existence, which makes him a divinity, when before he was but humanity. The ancients builded their huge piles of matter, as the enduring evidences of their

greatness and skill. We, of this day, reason in an opposite direction, and *reduce* matter, but *enlarge* mind. We look at the spirituality of things, and their ability to produce great moral and physical results. As has been beautifully expressed by one of the sublimest, if not most sublime of living English poets:

"We live in deeds not years; in thoughts not breaths;
In feelings, not in figures on a dial.
We should count time by heart-throbs.
He most lives who thinks most—
Feels the noblest—acts the best!"

Mr. President, this new birth of power which intellect has brought forth increases the lives of men as our fathers before us knew not how to increase the length of their lives. For what else is the true measure of life, but the power and means of accomplishing the greatest amount of good and great results? If a man has learned how to accomplish four-fold as much labor in a given length of time—to travel and return over four-fold more distance in a given length of time, than he could previously, for all the practical purposes of life, he lengthens out his existence in a like ratio. The use of steam power and the railroad enables him to do this. And had the Almighty in his wisdom, when he permitted our race thus to increase the duration of their existence, and their physical powers for practical results, but resolved on increasing, for this purpose, the muscular stature of man to a proportionably greater size, instead of accomplishing this result by efforts of mind, what giants would we be now, walking to and fro upon the earth!

Why, the present generation of man, as we now see them, would be but pigmies compared with this new creation of muscular form and power! But then—and this shows how vain and foolish is the wisdom of human devices when assuming to improve upon the wise ordinances of Divine Providence—then, what an utter wreck would have been made, for all practical uses, of all the past industry and the appointments for social conveniences of the human race. To giants such as we should have become, our dwellings would become mere dog kennels. Our implements of labor would be useless toys, fit only for children's amusements. The entire streets of our cities would scarcely answer for side walks, for the strides of our footsteps to and fro would be desolation to most things existing under the present condition of our race. Nay, an entire farm would be scarcely equal for the graves of a single generation of owners. But, sir, it is mind, not matter, that distinguishes our generation. Archimedes, the most renowned mathematician and geometrician of older times, boasted, on discovering the power and principles of the wheel, and pulley, and lever, etcetera, that he could lift and move the world, if he could but have a fulcrum outside of it on which to rest his lever. Well might he boast, at that day, of his great discoveries. And he thought, too, that in them he had exhausted all the powers of mechanics and science. But, sir, had Archimedes lived in our day, he could have been taught how to find in the brain, and the strong, determined heart of man, both the lever and the fulcrum, by which, while standing upon the face of the earth itself, he can move it to and fro, like a Divinity! (Repeated cheers.)

Sir, I am content—nay, I am rejoiced to live in these times—in our own days. I envy not the greatness, nor the enjoyments of other days, nor of other races. Even if we should fail to construct the great work now proposed—which is to closely connect, not simply great markets of one continent, with great markets of another continent—but which will connect the GREAT HEART that is represented there—(pointing to the American flag which was suspended on one side of the Hall) with the other GREAT HEART that is represented there—(pointing to the British flag that was suspended on another side of the Hall) of which I entertain no doubt and no fear—I still venture to say, there is not a man who has participated in these proceedings, without feeling thankful, railroad, or no railroad, that this convention has been holden. It has been fortunate in all its circumstances, and it cannot but be fortunate in all its results.

Mr. Smith's remarks were received with the utmost enthusiasm, and repeated cheers.

Railroad Letting, in Virginia.

PROPOSALS will be received at the office of the chief engineer of the Richmond and Danville railroad, until 9 o'clock A. M., Monday, the 10th of March, to be decided the 13th of the same month, for doing all the grubbing, clearing, grading, ditching and masonry, on the Richmond and Danville railroad, in the counties of Amelia, Nottingham, Prince Edward, Lunenburg and Charlotte, comprehending about 45 miles of road.

Profiles and specifications can now be seen at the office of the company in Richmond; and after the 10th of February, at the offices of the resident engineers, on the line, at Burkeville and Keysville.

By order of the board of directors,

ANDREW TALCOTT,

Chief Engineer R. & D. railroad.

Engineering department R. & D. }

R. R. Co., Richmond, Jan. 22, 1851. }

Wanted.

WANTED—A Situation in a Civil Engineer's office, by a Young Gentleman from Scotland—has had six years' experience as a practical Draughtsman, Architect, Surveyor, and Leveller in one of the principal civil engineering establishments in Scotland. First rate reference given. Apply to Messrs. Cooper & Hewitt, 17 Burling Slip, or to

JAS. SNEDDON,
23 Harrison st.

Wanted.

A Second-hand Locomotive of 10 to 15 tons weight. A note, giving lowest terms, addressed to A. B., Railroad Journal Office, will receive attention. January 9, 1850.

American Railroad Iron.

1000 Tons, weighing 50 lbs. per yard, manufactured by Reeves, Abbott & Co., at the Safe Harbor Iron Works, and now lying in yard at Brooklyn, for sale by

CHOUTEAU, MERLE & SANFORD,
No. 51 New street.

Tubes, Tubes, Tubes.

THE undersigned have received special permission from, and are in direct communication with, the Birmingham Patent Lap Welded Iron Tube Company, for the sale of their very excellent and superior Boiler and Gas Tubes in large or small quantities.—These Tubes are sold very extensively in England and on the continent of Europe are sold exclusively by

WM. BIRD & CO.,
Iron and Tinplate Merchants,
44 Wall st., New York
5 Martin's Lane, City, London,
and 140 Buchanan st., Glasgow.

Railroad Letting in Ohio.

Bellefontaine and Indiana Railroad.

SEALED PROPOSALS will be received at Jacksonville, Darke county, Ohio, (known also as Versailles), until January 21st, 1851, for doing the Grubbing, Clearing and Grading on 25 miles from Loramie Creek to the junction with the "Indianaapolis and Bellefontaine Railroad" at the Indiana State Line. Profiles are now ready at the Engineer's Office in Sidney, Shelby county, Ohio, where information can be obtained from Israel Pemberton, Resident Engineer. Proposals may also be left at Sidney till the 20th of January.

SEALED PROPOSALS will also be received at Marion, Ohio, until February 5th, 1851, for doing the Grubbing, Clearing and Grading on about 40 miles between Marion and Bellefontaine. The work, and profiles on this division, will be ready ten days before the letting. Information can be obtained from Alexander Worrall, Resident Engineer, at Bellefontaine, and at the Chief Engineer's Office in Marion.

The above are the only portions on the route not yet under contract. This road is known as the "third link" in the "great central backbone chain" from Philadelphia to St. Louis, and likewise as the western continuation of the main lines from Boston and New York, through Cleveland.

By order of the Board of Directors.

W. MILNOR ROBERTS,

Chief Engineer.

Engineer's Office, Marion, Ohio, }
December 10, 1850. }

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

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ASSISTANT EDITORS,

J. T. HODGE, *For Mining and Metallurgy.*

GEN. CHAS. T. JAMES, *For Manufactures and the Mechanic Arts.*

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American Railroad Journal.

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Saturday, February 8, 1851.

Ohio.

The southwestern quarter of this State is probably more actively engaged in the construction of railroads than any other portion of it, of equal extent. From its less intimate connection with New York, many of our readers have probably but little idea of the number, and forwardness of the railroads in that section.

The trunk line of these roads is the Cincinnati, Hamilton and Dayton, extending, as its name indicates, from Cincinnati to the latter place, a distance of 60 miles. Its course is almost directly north, following up the valley of the great Miami river, through a region of country celebrated the world over, for its fertility, and soon to be one of the most densely inhabited parts of the United States. This road is in a state of great forward-

ness, and a portion of it is to be opened on the first of July next. The stock of this road has been eagerly sought for by capitalists for investment. A large amount of its stock was subscribed in this city. It is doing the other roads of Ohio no injustice to say, that we know of no road either in that State, or in the United States, that promises a larger return upon its cost. With the same rate of charges as are adopted by our eastern roads, we have not a doubt that the net income would equal 15 per cent. This company, from the ample means at its command, has not been forced to call public attention to the merits of its road; consequently it has not attracted so much notice as other lines of much less importance.

Dayton, the present northern terminus of this road, will be the point of radiation of a number of lines of considerable importance. The elevation obtained at that point above the valley of the Ohio, renders it an easy matter to gain the table lands, which are altogether the most favorable for the construction of railroads. To this point the Mad river road has been recently extended from Springfield, a distance of 23 miles. This extension is now in operation. The extension of the Columbus and Xenia road from the latter place to Dayton, a distance of 15 miles, is soon to be commenced, thus connecting the Cincinnati, Hamilton and Dayton railroad with roads running to Sandusky and Cleveland.

On the west, the Dayton and Western railroad, running to Richmond, Indiana, and thence by the lines of that State, to Indianapolis, is under contract, and will be in readiness for the iron as soon as this can be procured. The distance from Dayton to the Indiana State-line is 35½ miles. From thence to Richmond 4 miles. The completion of this line is the virtual extension of the Ohio Central line, and the Xenia and Columbus line, west, to Indianapolis and St. Louis, and this link, in one of the great chains of western railroad, bids fair to be one of the first, of those in progress, to be completed. The President of this road is P. P. Lowe, Esq., of Dayton.

The *Greenville and Miami Railroad*, intersects with the Dayton and Western railroad, 14 miles from Dayton, (using the latter for its trunk line for this distance,) and runs from thence to Greenville, the county town of Darke, a distance of 20 miles from the point of juncture, thence to the State-line

20 miles, thence to Winchester, Indiana, 10 miles more, there to connect with the Indianapolis and Bellefontaine railroad. This road is also under contract to the State-line, and is sufficiently advanced to warrant the purchase of its rails. The Dayton and Western, and the Greenville and Miami will thus bring Dayton into direct connection with the two lines leading to Indianapolis.—The President of this company is E. B. Taylor, Esq., of Greenville.

The above embrace we believe all the lines now in progress and terminating at Dayton. Upon the completion of the Cincinnati, Hamilton and Dayton railroad to that city, its extension further north will, we presume, be immediately commenced, and dividing, after reaching a certain point, into two branches, one running westward, in the direction of Fort Wayne, Indiana, and the other in the direction of Toledo.

At Hamilton, a road is in progress to Eaton, the county town of Preble, thence to the State-line and to Richmond. The length of this line is as follows, viz:—to Eaton, 20 miles; from this place to the State-line, 16 miles.

We are not apprised of the exact state of the forwardness of this road, but the whole line, we believe, is under contract, and will, we presume, be in readiness for the iron the coming summer.

A road is also projected from Hamilton to the Indiana line, to unite with the road running west in this State, through Cambridge city and Connersville. We are not able to state the present condition of this line.

The above are the lines of railroad in progress and operation in the immediate valley of the Miami. There are other important lines in this portion of Ohio, but which are not intimately connected with those above enumerated; among which may be named the Hillsboro', and the Ohio and Mississippi. The president of the former of these is now in this city for the purchase of iron for the road, which is now in readiness to receive it. For the present, this line leaves the Miami road near the mouth of Obanon's Creek. The distance from the junction to Hillsboro, is about 40 miles. The road forms the westerly division of the Cincinnati and Belpre railroad, and will probably be consolidated with that company when the latter shall have expended a proportionate amount according to its length of line.

The Ohio and Mississippi river, though a project of Cincinnati, has but a short part of its line in Ohio. Its object is to unite Cincinnati and St. Louis by the shortest possible line, in order to bring through the former the travel from the east. This is one of the greatest works yet projected in the west. The company is organized, but the work of construction has not yet been commenced. Cincinnati has voted \$100,000 towards this work.

Memphis and Charleston Railroad.

We have read the first annual report of the directors of this important work, submitted at a meeting of the stockholders held at Huntsville on the 15th ult.

Among the most important measures adopted at the meeting was the final location of the road. The line selected runs from Memphis to LaGrange, Tenn., on an old grade constructed several years ago; from LaGrange to Tuscumbia; from Tuscumbia to Decatur, taking in the line of the Tennessee valley road; from Decatur to Huntsville; from Huntsville through Jackson county to an intersection with the Nashville and Chattanooga road, on or near Crow Creek, in the northeasterly corner of Alabama. The whole length of line is 281 miles.

In the location of the line there were of course many rival interests brought to bear upon the determination of the directors, but they were governed mainly by the results of the surveys, and adopted the one presenting the shortest and cheapest route. Huntsville is a point in the line by charter. In relation to the route adopted we give the following from the report of the chief engineer.

From Huntsville to the Nashville and Chattanooga railroad, near the point where it crosses Crow Creek, is 60 miles, and will cost \$617,619 70. No grade exceeding 43 24-100 feet per mile need be used and the curves will be as moderate as is at all desirable.

The country traversed is as fertile as any part of the Tennessee valley, and abounds in timber of the best quality for railroad purposes.

From Huntsville West, the cheapest and shortest line surveyed was that which crosses the river at Brown's Ferry, and strikes the Memphis and LaGrange road at LaGrange. By this route a road may be constructed from Crow Creek to Memphis in a distance of 281 1/4 miles, at a cost of \$2,893,291 24.

Between Huntsville and Big Bear Creek, the grades and curvature will be the same as those east of Huntsville, but between that creek and the Tuscumbia fork of Hatchee, grades of 52 8-10 feet per mile must be resorted to. These could not be avoided on any of the lines run through Mississippi. There is however one favorable feature on this line which does not exist on some of the others. This maximum of grade is confined to a short distance, and this space is more than 100 miles from each end of the road. By dividing this line into three equal parts, we will have about 93 miles for each division. This is as far as one locomotive ought to run, and by using heavier engines or running a greater number of trains on the middle division than on the other two, the 52 8-10 feet grades will be much less objectionable than if they were distributed over the whole extent of the road.

We will now proceed to compare each route with the one just described.

The route through Athens, Florence and by the Line Ferry, will cost \$849,949 79 more than the other, and would be 23-10 miles longer.

From Huntsville to Florence is 65 1/4 miles, and would cost \$860,556 21, which is greater than the cost of a line from Huntsville to Tuscumbia by \$74,814 98. The cost of a bridge, and 5 1/4 miles of road from Florence to Tuscumbia, would be \$162,000. Therefore to go from Huntsville to Tuscumbia by way of Florence, would be a loss of 4 miles in distance, and an increased cost of \$236,814 98.

If the Valley railroad is valued at \$130,000, the amount now demanded by that company, the line

from Huntsville to Tuscumbia, by way of Decatur, will not exceed the distance of the Brown's Ferry line by more than one mile, and will cost more by \$50,000. If that company would take \$60,000 for their road, the two lines would be equal in value. Something might be added to this sum for the value of their warehouses and other buildings, of which no estimate has been made.

The line surveyed through Holly Springs is 14 miles longer than the one through LaGrange, but it is confidently believed that this difference of distance could be reduced to 10 miles, but the cost of that line, must, in any event, exceed the cost of a line through LaGrange by \$195,120 06. This route would be liable to another objection from the fact that our maximum grade would have to be used, in rising from the Chewalla to Holly Springs, which would defeat the plan proposed for the other route.

As a line of travel, the Memphis and Charleston railroad possesses an importance which can scarcely be too highly estimated. Without concert of design, in fact without even the knowledge, on the part of the different projectors, of what each other was doing, there has been a system of railroads laid out, which, when completed, may be called emphatically, the highway of nations. Much of this system is already completed, and every link in the great chain is now under regular organization and in rapid progress. Four years will not elapse before the greater part, if not the whole, will be in full operation. There are now, finished and in process of construction, railroads, forming one unbroken line, from Memphis to Boston—and this line may be called practically straight. It is, in fact, the shortest line on which a road could be constructed between those points, the natural features of the country not admitting a shorter one. It is truly wonderful that the merits of this route should have been so long unknown to the public, for Nature herself seems to have marked it out. Here is a line nearly straight, passing through the centre of the Union, on which the mountains have been levelled, as if by design. Though this line crosses all the mountain ranges, it encounters no grade, exceeding 68 feet per mile, and it is only on the Virginia and Tennessee railroad that this rate of ascent is used. The line generally follows natural valleys, where the grades are gentle and the work light. From Memphis to Lynchburg, a distance of 750 miles, the whole cost of constructing a road, of the most substantial character, and fully equipping it, will not reach \$15,000 per mile, although 500 miles of that distance traverse a mountainous region. If this great line had its termini in Memphis and Boston, it might well be called a national work. But this is not all! There are two schemes recently put on foot, at the extreme points of this line, which must add greatly to its importance. One is the plan of a canal across the isthmus of Tehautepec, which is now exciting much interest in New Orleans; the other is the "European and North American railway," which may date its birth from a convention held in Portland, Me., on the 31st of July last.

The immediate effect of the first of these schemes will be to make our road the channel of communication between our eastern cities (including the seat of government) and our possessions on the Pacific. And not only this, but our intercourse with China must be by this same route.

Careful surveys and examinations have fully established the feasibility of this scheme. The isthmus of Tehautepec possesses a rich soil, salubrious climate and great variety of natural productions. The bar at the mouth of the Coatzacoalcas is as good as the one at the mouth of the Mississippi. The river itself is navigable, for 34 miles, for large vessels, and can easily be improved higher up. This river flows through a dense forest of oak, cedar, pine, iron wood, Brazil wood, mahogany and live oak.

On the Pacific side are two lakes, affording a commodious harbor; the interior is connected with the exterior by a communication called the canal of Santa Teresa, and the entrance from the ocean to the exterior lake is called the Bocca Barra. It is 150 miles from the Pacific to the Atlantic; being about 15 miles from the Bocca Barra to the ship landing.

From New Orleans to San Francisco, by the isthmus of Tehautepec, is 1825 miles less than by the isthmus of Panama, and the saving of distance between New York and San Francisco would be 1400 miles, which will determine all these cities in favor of the Tehautepec route. The distance from San Francisco to Bocca Barra is 2900 miles; from Bocca Barra to Coatzacoalcas, across the isthmus, is 150 miles; from the latter place to New Orleans is 900 miles. A traveller starting from New York, and passing over the Memphis and Charleston railroad, and, by this route, instead of the Panama route, will save 1600 miles of sea voyage on the Atlantic side, and 1300 miles on the Pacific side. In time of war, with a fleet to protect the gulf, the intercourse of the Atlantic States with California and China might go on with perfect safety through this interior route. These considerations should give New Orleans a deep interest in our road as that city must become the great entrepot of the trade and travel between the old States and San Francisco and China.

The journey from Memphis to San Francisco, by the proposed route, allowing two days and a half for the river boats, between Memphis and New Orleans, allowing for the ocean steamers, on the Gulf and the Pacific, 15 1/2 miles per hour, which is the speed of the Cunard steamers, and allowing one day to cross the isthmus, would require thirteen days and ten hours, as may be seen by the following calculation:

	Miles.	Days.	Hours.
From Memphis to New Orleans.....	800	2	12
From New Orleans to Coatzacoalcas.....	900	2	10
From Coatzacoalcas to Bocca Barra.....	150	1	
From Bocca Barra to San Francisco.....	2,800	7	12
		13	10

The other scheme, which is to have such an important bearing on the prosperity of this road, is the "European and North American railroad." There is a line of railroads now in operation from New York, through Boston, to Waterville, Me., a distance 410 miles. This new company propose to extend this line through New Brunswick and Nova Scotia to Halifax, passing through the towns of Bangor, Calais and Truro.

This road will be 485 miles, and it will probably be extended hereafter to Cape Canso.

From Halifax it is proposed to run steamers to Galway Bay, on the western coast of Ireland, which will be crossed by the "Great Midland railway" to Dublin. From Dublin the line of travel will be continued, by steamers, across the channel to Holyhead, thence crossing the Menai Straits by the Britannia Bridge, and to London by the Chester and Holyhead, and the London and Northwestern railways. By this plan the ocean navigation will be reduced to 2,165 miles, and will require only 5 1/2 days.

The whole time required for a journey from New York to London will be 7 1/2 days, as will appear from the following detailed statement:—

	Days.	Hours.	Minutes.
From London to Holyhead, 263 miles, at 35 miles per hour, average speed of express trains, including stoppages.....	0	7	30
From Holyhead to Dublin, 63 miles per hour, the present speed of the channel boat.....	0	7	30
From Dublin to Galway, 120 miles, at 30 miles per hour.....	0	3	00
From Galway to Halifax, 2165 miles, at 16 1/2 miles per hour, the Cunard boats having attained 15 1/2, and, with less weight of coals, will increase their speed.....	5	11	15
From Halifax to boun-			

dary between New Brunswick and Nova Scotia, 120 miles, at 30 miles per hour....	4	5	00
Through New Brunswick, via St. John to Calais, in Maine, 210 miles, at 30 miles per hour.....	0	7	00
From Calais to Waterville, 155 miles, at 30 miles per hour.....	0	5	10
From Waterville to N. York, (line in actual operation) 410 miles, at 30 miles per hour.	0	13	40
Total running time.	7	8	5
Add 4 hours for delays, trans-shipments, &c.	0	4	0

Whole time between London and N. York 7 12 5
From Memphis to New York, by the Memphis and Charleston road, is 1,200 miles, and is the nearest practicable line. This distance, at 25 miles per hour, will require two days—let 12 hours be allowed for delays and changes, and call it 2½ days. This will make the journey from Memphis to London 10 days, and from London, by way of Memphis, to San Francisco, 23 days and 10 hours.

Nor does this complete the chain. For steamships may perform the voyage to China, from San Francisco, by having supplies of coal deposited at the Fox Islands. The most northern free port in China, Shanghai, is in latitude 31°. San Francisco is in latitude 37½°, and it is probable that by no other route could steamships cross the Pacific.

Ships, in the present state of steam navigation, cannot carry a supply of coal for more than 3,000 miles, and pay a profit. The Fox Islands are about midway between San Francisco and Shanghai, and about the same distance from each as it is from Halifax to Liverpool, the present route of the Cunard steamers.

Lieut. Maury calculates that steamers may perform the trip between Shanghai and San Francisco in 26 days.

This would then be the nearest possible route from China to London, and the journey could be performed in 49 days and 10 hours.

It is a circumstance worthy of remark, and significant in view of any future plan of a direct road to California, that Memphis is in latitude 35°, just between the two places above mentioned.

But let us examine a little more closely into the line between Memphis and New York. There is certainly no route, now travelled, between these points, which is not longer, by more than 400 miles, than that by way of your road. An examination of the map will satisfy any one that there are natural difficulties which will prevent a shorter line from ever being made.

Some idea may be formed of the directness of this line, by the fact that, should the shortest line be adopted, the variation in latitude between the most northern and most southern point on any part of the line, between Chattanooga and Memphis, will be less than 30 miles: and, between Richmond and the farthest southern point of this line of roads, the difference of latitude will be only 2½ degrees.

There is no portion of this line which is not chattered, and there are but 30 miles between your road and New York which are not now in progress of construction. This 30 mile is between Chattanooga and Cleveland, on the East Tennessee and Georgia railroad: A charter was obtained for this road, but no company has been organized under it. Every railroad company in Tennessee is interested in its construction, and will at a proper time, take steps to forward it. The proper plan would be to make it as a branch to the East Tennessee and Georgia road. The work of this company has progressed so far as to insure its completion. The next link in this chain is the East Tennessee and Virginia road. This work is in progress, and will require the fostering care of the Legislature, and will certainly receive that aid, as it is so clearly the interest of the two most important companies of middle and west Tennessee to aid all lines from Chattanooga to any part of the Atlantic coast.

The roads through Virginia, on this great line, are either finished or in rapid progress and will complete the system. The great necessity for this line of roads may be strikingly illustrated by the fact that, although it is only 435 miles from Lynchburg to Chattanooga, the traveller will now find it best to go 1000 miles to get from one of those points to the other.

All the roads, now proposed, in the vicinity of Memphis and Charleston road, will act as feeders. The Mobile and Ohio road is 470 miles in length and will cross this nearly at right angles. Supposing it to be 180 miles from Cairo and 290 miles from Mobile to the point where the two roads intersect. It will then be, from the junction of the Mississippi and Ohio at Cairo, to Philadelphia, 72 miles nearer, by your road, than by the Pittsburgh route. Any travel from Mobile, destined for the eastern cities, would come up to the Memphis and Charleston road to go eastward, as the nearest and most expeditious route.

The Nashville and Chattanooga railroad is another feeder for your road. The travel from Nashville and a large portion of middle Tennessee, destined for Memphis and New Orleans, will come down to your road at the point of junction between the two.

Enough has been said to prove that, as a line of travel, this will certainly be the most important in the Union. This alone would make it a profitable road. But, as a freight road also, it will occupy the highest rank. It may be assumed, as an established truth, that any road of this length, passing through a rich country, will support itself. Now, this road, for its entire length, does pass over a country which cannot be excelled in fertility. There are but 50 miles of poor land on the whole road. Even the poorest land on this road will compare favorably with any land on some of the most flourishing roads in this country.

There are 109,000 bales of cotton raised in the valley of the Tennessee between the Shoals and Chattanooga, and its valley, when its resources are fully developed, is capable of four times its present production. A table will be appended if it can be procured in time giving a few statistics of the counties near the line of road. Whether the products of this valley shall seek a market in the cities of Charleston and Savannah, or in New Orleans, is a matter of indifference to the company, and that must be decided by the inducements which each city shall offer as a market.

The country along the line of road must enjoy great and peculiar advantages from having a free choice of the markets of New Orleans, Charleston Savannah and the Virginia cities.

The local trade and travel on this line would support it. From Memphis to Richmond is 880 miles, and there is not, on this continent, a line of that length, passing over so much rich soil. It may be safely stated that there are not 150 miles in this distance that may not be called rich land, and the character of the country traversed is such as to produce all the effect of difference of latitude. One of the most important elements of prosperity, in a great line of transportation, is its passing through many degrees of latitude, so as to exchange the productions of one climate for those of another. This line, covering only 2½ degrees of latitude, traverses a country, varying as much in climate, as is usually found in twice that number of degrees.

The chain of communication between Memphis and the Chesapeake bay will combine as many varied interests as could possibly be found in the same distance. It touches, at different points, regions most favorable to the great staple productions of corn, wheat, tobacco, hemp and cotton; it passes through districts peculiarly adapted to grazing and growing wool; it traverses a country rich in salt, plaster, coal, iron, lead and copper, and abounding in sites where any amount of water power can be commanded for manufacturing purposes. This country has within itself the means of a prosperity greater than the most sanguine friends of improvement have yet dreamed of. The variety of pursuits might be so great as to support a very large population, even without foreign commerce. Thus would all the parts of this great line find themselves possessing one common interest, and the energies of the whole would be required to supply the wants of the different parts.

As long as cotton bears a remunerating price, the counties along the Memphis and Charleston railroad will find it to their interest to cultivate that staple chiefly. Virginia will be supplied with cotton from the valley of the Tennessee, through this railroad, and will exchange for it her salt, plaster, manufactured tobacco and flour. This exchange of commodities, together with the local travel of the immense population which will spring up in this fertile region, will of themselves be sufficient to support the road. It has been found, in Massachusetts, that the number of passengers annually transported over their railroads is over five times the population of the country in which they are located, and that the amount of freight transported is 1½ tons to each inhabitant. Why should not that which has taken place in Massachusetts happen here also?—but even if the proportion here should be one-tenth of what it was in Massachusetts, it would ensure the complete success of the work.

From the Merchant's Magazine.

Internal Improvements of the State of New York.

A SKETCH OF THE RISE, PROGRESS, AND PRESENT CONDITION OF INTERNAL IMPROVEMENTS IN THE STATE OF NEW YORK.

RATES OF TOLL ON THE NEW YORK STATE CANALS.

The success of the New York canals is closely identified with a just discrimination and a liberal policy, in regard to the rates of tolls exacted by the State. In alluding to the subject of constructing the Erie canal by incorporating companies for the purpose, or "achieving this great work" by the State, the memorial to the Legislature from the city of New York in 1816, says:—"Great care ought to be taken to guard against high tolls, which will certainly injure, if not ruin the whole enterprise."

By the 20th section of the "act for the maintenance and protection of the Erie and Champlain canals," passed in 1820, the canal commissioners were authorised "to establish the rates of toll to be paid on all articles conveyed on either of the said canals in any manner," and to erect weighing scales, and "make all such rules and regulations in respect to the collection of toll, and the payment thereof to the commissioners of the canal fund," and enforce forfeitures for breaches of their regulations, not exceeding twenty-five dollars in any one case.

The rates of toll established by the canal commissioners were first applied to the middle section of the Erie canal, on the 1st of July, 1820. Merchandise was charged at 2 cents per gross ton per mile, and agricultural products, and articles not enumerated at one cent. Sawed lumber at 5 mills per 1,000 feet, and timber 5 mills for 100 solid feet per mile.

The regulations of the commissioners required the master of the boat to present "a bill of particulars," which the collector was to examine and compare with the cargo, and then copy the bill in a book, receipt the toll on the bill, and hand it to the master of the boat, which served him as a clearance. "And by way of a check upon their accounts, one of the collectors is required to make an entry of all the property paying toll, at the several places of collection, and of all the receipts therefor by the collectors." The regulations adopted by the commissioners at that early period, contain, substantially, the outlines of the present system in regard to the duties of boatmen and collectors.

The mode of weighing boats and their cargoes, to ascertain the amount of toll to be charged, has been entirely changed. By the 15th section of the act before referred to, each boat used for the transportation of articles on which toll was charged by weight, was required to "have fixed on each side thereof two metallic straps, one near the head and one near the stern, extending from below the surface of the water when empty, to above the surface of the water when full laden, which straps shall each be so graduated and marked as distinctly to show the amount of tons weight contained in said boat or vessel.* Three hydrostatic locks were constructed at West Troy, Utica and Syracuse. These

* Annual Report of Canal Commissioners, 1821.

Note.—About four years since I sent to the Courier an account of the Tonnage built in the United States from 1815 to 1845, and this account completes the account with that published by you today to the year 1850. More ships built in the State of Maine than in all other States united.

The vessels built last year, including canal boats, average two hundred tons.

	Ships.	Brigs.	Schooners.
1815 to 1824..	591	1,161	4,367
1845 to 1834..	473	1,250	4,954
1835 to 1844..	792	737	3,507
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9½ to 29½ y's.	2,156	3,148	12,828
	Sloops and Canal Boats.	Steam-ers.	Tonn- age.
1815 to 1824..	2,444	41	8,604
1825 to 1834..	1,574	498	9,147
1835 to 1844..	1,944	1,025	8,005
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9½ to 29½ y's.	5,962	1,564	25,756

—Boston Courier. W. W. O.

Complete returns have now been received of all the counties in the State but two, Allegany and Ulster. In Allegany and Ulster a single town wanting. Estimating these, the table below is complete for the State:—

	1840.	1850.
Albany.....	68,536	93,297
Alligany.....	30,185	37,600
Broome.....	22,348	30,660
Cattaraugus.....	28,803	38,910
Cayuga.....	50,364	55,489
Chautaque.....	47,641	50,624
Chemung.....	20,731	28,964
Chenango.....	30,779	40,313
Clinton.....	28,157	40,065
Columbia.....	44,237	43,014
Cortland.....	24,605	25,058
Delaware.....	35,364	39,874
Dutchess.....	52,488	58,994
Erie.....	62,151	101,112
Essex.....	23,620	31,203
Franklin.....	16,450	25,115
Fulton.....	18,038	20,158
Genesee.....	28,721	28,528
Greene.....	30,446	33,124
Hamilton.....	1,907	2,188
Herkimer.....	37,378	38,257
Jefferson.....	61,028	68,156
Kings.....	47,614	138,899
Lewis.....	17,849	24,570
Livingston.....	35,324	40,887
Madison.....	40,896	43,081
Monroe.....	64,912	87,338
Montgomery.....	35,801	31,913
New York.....	312,932	515,394
Niagara.....	31,114	42,224
Oneida.....	85,345	99,818
Onondaga.....	67,915	85,900
Ontario.....	43,501	43,978
Orange.....	50,733	57,164
Orleans.....	24,995	28,464
Oswego.....	43,820	62,150
Otsego.....	49,403	48,740
Putnam.....	12,825	14,134
Queens.....	30,224	37,042
Rensselaer.....	60,303	73,435
Richmond.....	16,985	15,066
Rockland.....	11,874	16,965
St. Lawrence.....	56,634	68,634
Saratoga.....	40,542	45,620
Schenectady.....	17,233	20,057
Schoharie.....	32,351	33,537
Seneca.....	24,868	25,442
Steuben.....	45,985	63,785
Suffolk.....	32,469	36,826
Sullivan.....	15,630	25,090
Tioga.....	20,351	25,384
Tompkins.....	38,113	38,749
Ulster.....	45,724	59,959
Warren.....	13,470	17,159
Washington.....	51,095	44,761
Wayne.....	42,868	44,967
Westchester.....	48,678	58,267
Wyoming.....	35,312	32,123
Yates.....	25,552	20,590
Total.....	2,429,550	3,099,249

Increase in ten years 669,699 or about 27 per cent. From 1830 to 1840, the increase was 26, and from 1820 to 1830, 38 per cent.

Statistics of Ohio.

From the Auditor's Report for 1850 we glean the following aggregates of interesting statistics:

Total acres of land.....	23,981,350
Value of lands.....	\$266,751,103
Value of towns.....	74,637,735
Personal property, moneys & credits.	98,487,502
Value of taxable property.....	439,876,360
State tax on property.....	1,413,830
Tax on lawyers and physicians.....	9,303
County school and township taxes...	1,692,164
Road tax.....	203,728
School house and other special taxes.	754,684
Total taxes.....	4,227,708
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Horses.....	513,625
Mules.....	2,180
Cattle.....	1,103,811
Sheep.....	3,812,707
Hogs.....	1,672,178
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Total value.....	\$34,432,189

—Boston Courier.

Pleasure carriages.....	63,149
Value.....	\$2,763,782
Watches.....	65,084
Value.....	\$910,038
Pianos.....	2,368
Value.....	\$318,684
Merchants' stock.....	15,510,871
Manufacturer's stock.....	4,478,089
Moneys and credit.....	33,192,076
Total amount of personal property on duplicate.....	98,487,502

The State holds stock in turnpike companies to the amount of \$1,853,565, on which the dividend paid the State was \$18,288 20.

The State had stock in the Pennsylvania and Ohio canal and in the Cincinnati and Whitewater canal to the amount of \$570,000, and received a dividend of \$11,550 last year.

The State has railroad stock to the amount of \$566,483, on which has been received a dividend of \$13,008 in script of the Little Miami railroad, and \$10,500 in the bonds of the Mad River railroad company.

There were in the State, 796,199 youths in 1849, for educating of whom the State paid \$295,050 81.

BANKS.

There are Independent Banks.....	11
Capital.....	\$757,790 00
Branches of State Bank.....	41
Capital.....	\$4,720,093 75
Old Banks.....	5
Capital.....	\$2,011,266 00

The total banking capital of all the Banks is \$7,489,109 75. The State tax paid by the Banks during the last year is \$57,120 61.

Commerce of New York.

We published on the 16th inst. our usual statistical statement in regard to the commerce of this port, for the first three-quarters of the past year, the returns for the last quarter not having been completed. We have fortunately been enabled to complete our compilation much sooner than we anticipated, and now lay before our readers a statement of the number of vessels which arrived and cleared during the entire year, with their registered tonnage and number of seamen.

Entered during the year 1850.

No. of vessels.	Tonnage.	No. Seamen.
Am vessels.....	1,890	806,141½
Foreign do.....	1,451	441,718½
Total arrived.....	3,341	1,247,860

Cleared same period.

No. of vessels.	Tonnage.	No. Seamen.
Am. vessels.....	1,463	699,617
Foreign do.....	1,355	406,453½
Total cleared.....	2,818	1,106,070½

This, in connection with our former table, shows a steady increase in the growth of our foreign commerce, and may be taken as a true index of the progress of our city toward what she is destined to be

—the greatest commercial city in the world. We annex a table showing the tonnage which has arrived at this port from foreign countries for each calendar year from 1821 to 1850 both inclusive.—N. Y. Jour. Com.

Census of New Hampshire.

The following is the population of this State, compared with the census of 1840, as reported by the Marshal:—

	1850.	1840.
Rockingham....	49,215	45,771
Strafford.....	29,359	23,149
Belknap.....	17,722	17,989
Carroll.....	20,164	19,989
Merrimack.....	40,346	36,253
Hillsborough....	57,480	42,494
Cheshire.....	30,141	26,429
Sullivan.....	19,326	20,340
Grafton.....	42,343	42,311
Cooks.....	11,859	9,849
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	317,992	284,451

In the counties of Belknap and Sullivan, it will be seen, there has been a small decrease of population.

Coinage at U. S. Mint.

E. C. Dale Esq., treasurer of the United States Mint, gives the subjoined statement, exhibiting the coinage and operations of the Mint for the month of January. The coinage of gold was greatly diminished, in consequence of a suspension of the refining operations from the 30th of December, 1850, to the 20th January, 1851. This suspension was necessary, partly to enable the melter and refiner to settle his account under the law which requires him for that purpose, annually to deliver all the bullion in his hands to the treasurer, partly to afford an opportunity to prosecute certain improvements, now complete, whereby the capacity of the Mint is enlarged to meet the demands of the depositors and the public.

GOLD COINAGE.

105,801 double eagles, value.....	\$2,116,020
101,500 quarter eagles, ".....	253,900
251,046 gold dollars, ".....	251,046

458,407 pieces..... 2,620,966

SILVER COINAGE.

78,000 half dollars.....	39,000 00
297,500 dimes.....	29,750 00
164,000 half dimes.....	8,200 00

COPPER COINAGE.

701,343 cents, value.....	7,013 43
52,744 half cents value.....	263, 97

1,752,044 pieces.....	\$2,705,193 40
Total gold deposits from 1st to 31st Jan. 1851 inclusive.....	\$3,000,000 00

Of which from California.....	4,940,000 00
From other sources.....	60,000 00
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	\$5,000,000 00

Indiana Railroad Items.

We copy the following interesting items from the Madison Courier:

The Board of directors of the M. & I. R. Co. have declared a dividend of six per cent. on the capital stock, for the six months ending December 31st, 1850.

The gross receipts of the Madison railroad for the year ending December 31st, 1850, were \$300,000, against \$243,000 last year.

The dividend last declared by the Madison railroad was earned during the months of October, November and December of the six.

The splendid new passenger car at the wharf this morning on a flatboat, was built by Keck & Davenport, Cincinnati, for the Knightstown road.

To-day the Shelbyville railroad company receive bids for the running of their road for the next year.

We understand the stockholders of the Shelbyville railroad have elected J. Elliott, Esq., President and V. A. Rockwood, Secretary.

Madison and Indianapolis railroad stock is reported in the Tribune of the 6th inst., firm at \$105 1/4 at 106 in New York.

Business of the St. Louis Custom House for the year 1850.

The following statement has been furnished us by Mr. W. W. Greene, the surveyor of this port for the year just expired:—

Foreign value of merchandise imported and entered for consumption at this port, during the year 1850.....	\$560,773 38
Duties paid thereon..	\$174,974 19
Foreign value of merchandise remaining in public warehouse at this port 31st December, 1850.....	22,627 32
Duties payable thereon..	\$18,932 19
Foreign value of merchandise imported from England.....	301,266 37
Do do France..	84,842 38
Do do Germany and Holland.....	31,859 63
Foreign value of merchandise imported from Spain.....	116,830 00
Foreign value of merchandise imported from Genoa.....	121 00
Do do Manilla..	25,854 00

Total.....\$560,773 38

The general description of merchandise thus imported, is as follows:

	Foreign value.
Hardware, cutlery, &c.....	\$153,714 00
Copper, sheet-iron, iron, &c.....	76,543 00
China and earthenware &c.....	74,070 14
Brandy, wine, gin, &c.....	31,091 88
Dry Goods, &c.....	13,914 36
Stationary, fancy goods, toys, &c.....	34,467 00
Corks.....	1,106 00
Sugar.....	153,449 00
Molasses.....	22,418 00

Total.....\$560,773 38

Hospital money collected in 1840.....	\$2,388 75
Do expended in 1850 for the relief of sick and disabled seamen....	1,755 86
Respectfully,	W. W. GREENE.

STATEMENT.

Of Vessels enrolled at the port of St. Louis, as reported on the 31st December, 1850.

118 steam vessels, 27,962 60-95ths tons, with a power equal to 4,677 728-1000 horses.
63 vessels other than steamers, 4,006 27-95ths tons.
W. W. GREENE.

Coal for Gas.

The London "Journal of Gas Lighting," for last November, has an elaborate article on the comparative lighting powers of different kinds of coal, and the respective value of their residuary products. From this article is compiled the following table. Five cubic feet per hour of the gas produced by each description of coal, it must be understood, gives a light equal to the number of candles stated in the first column of figures. The second column shows to what proportion of the cost of the coal the residuary products are equivalent.

	Candles.	Per cent.
Scotch Cannel.....	20 to 30	5 to 20
Newcastle Cannel.....	22 to 25	35
Wigan Cannel.....	20 to 23	20 to 20
Newcastle coking coal.....	11 to 15	50 to 55
Derbyshire ".....	12 to 15	40 to 45
Yorkshire ".....	10 to 13	45 to 50
Lancashire ".....	10 to 12	45 to 50
Cumberland ".....	10 to 12	35 to 40
Gloucestershire ".....	10 to 12	30 to 35
Cheshire ".....	10 to 12	20 to 25
Somersetshire ".....	9 to 10	40 to 45
Staffordshire ".....	9 to 10	35 to 40
South Wales and Dean Forest.....	8 to 9	45 to 50

This table may teach the public how fallacious it is to suppose that gas can be sold at the same price, with the same profit, all over the world. The lighting power of the coal—the value of the residuary products—the extent of consumption—

must be taken into consideration. We must also bear in mind that the residuary products of the same coal vary in value according to locality.

Maine.

Portsmouth, Saco and Portland Railroad.—Below we give an authentic table, furnished to us, showing the increase of travel and business on the Portsmouth, Saco and Portland railroad from its commencement, December 1, 1842, to the close of its last year's business, November 30, 1850. This railroad, it will be remembered, is usually classed as a passenger road, and moreover, it has been, during the whole period of its operation, subject to steamboat competition. It will be perceived that the amount of travel and business on this road has uniformly and steadily increased from year to year, and both have more than doubled in the short space of eight years:

Year.	No. of passengers.	Amount of Fares.	Gross receipts, pas's, fre't, mails, &c.	Net proc'ds
1843	90,342	\$76,257 11	\$89,997 08	\$47,166 36
1844	107,743	101,563 61	124,497 39	74,841 25
1845	119,292	100,767 71	127,608 62	73,911 47
1846	134,753	106,504 62	132,324 05	74,353 59
1847	167,327	124,365 37	155,159 49	98,961 13
1848	188,498	128,140 31	159,545 00	99,312 23
1849	209,478	143,911 26	174,579 56	110,745 94
1850	222,283	155,851 56	194,243 40	106,577 36

The passage out of the Cunard steamship Asia, is claimed by the London papers as being the shortest on record. Thus, the Times says:—

Her run of last summer to the Mersey, on which occasion she steamed past the Rock lighthouse at midnight on Saturday, had previously stood unrivalled, being 1 hour and 20 minutes less than the finest passage of the United States mail steamer Atlantic; but the Asia has now beaten even herself, fully justifying her claim to be considered the fleetest existing ocean steamship. From New York, on the 18th inst., she cleared precisely at midday but shortly afterwards stopped her engines to repair damages received by her wheels during a collision with the wharf.—Fifty-five minutes were thus lost; and she finally started on her voyage shortly before 2 P. M. During her subsequent passage she experienced variable with frequent strong breezes from the westward, and on Friday, at 10 P. M., made Cape Clear, having steamed from land to land in little more than nine days. Holyhead was passed unobserved by the marine telegraph, at 4 P. M. on Saturday, at half past 9 o'clock her guns saluted the town, exciting general surprise and universal gratification as regards the celerity of her passage. From the log it will be observed that the Asia effected a very high average speed per diem. On two days she steamed a distance seldom equalled hither, in the annals of ocean steaming, running on the 25th, 26th, and 27th inst. respectively 328, 321, and 300 miles. Her passage, reckoned according to mean time, and deducting 45 minutes lost off New York, repairing floats, may be recorded as 10 days 4 hours and 5 minutes, or 2 hours and 55 minutes less than her fastest summer passage, 4 hours and 15 minutes less than the United States mail steamers' fastest passage eastward, and about 5 hours and 20 minutes less than the remarkable summer run of the Pacific out to New York.

A New Railroad Project for New York Business.

We hear of a new railroad line, direct from the Vermont and Canada road at Essex junction, Vt., to Castleton, there to connect with the most direct line to Troy or Albany. The Vermont and Canada road extends from Rouse's point to Essex, and is in operation, and the roads from Castleton via Poultny, and via Bennington to Troy, &c. are under contract. It will thus be seen that the only link required to form a direct New York line to Rouse's point and Montreal, is this projected line from Essex to Castleton, a distance of about fifty miles. The entire distance from Troy by this line to Rouse's point would be very little longer and

probably much cheaper than a line on the west side of the Lake via Whitehall; and besides, the Charleston and Essex line requires but 50 miles of additional railway, while the Western line would require at least 120 miles. Should the Vermont and Canada road go in for such a connection, then New York would have full and free enjoyment of all the advantages of that road. The project has features that strongly commend it to the attention of all concerned.—*Vermont Patriot.*

The Gutta Percha Trade.

Previous to 1844, the very name of gutta percha was unknown to European commerce. In that year 2 cwt. of it were shipped experimentally from Singapore. The exportation of gutta percha from that port rose in 1845 to 160 piculs; (the picul is 133 1/2 lbs.); in 1846, to 5,364; in 1847, to 9,296; in the first 7 months of 1848, to 6,768 piculs. In the first four and a half years of the trade, 21,598 piculs of gutta percha, valued at \$274,190, were shipped at Singapore: the whole of which was sent to England, with the exception of 15 piculs to Mauritius, 470 to the continent of Europe, 922 to the United States.

But this rapid growth of the new trade conveys only a faint idea of the commotion it created among the native inhabitants of the Indian Archipelago. The jungles of the Johore were the scene of the earliest gatherings, and they were soon ransacked in every direction by parties of Malays and Chinese, while the indigenous population gave themselves up to the search with an unanimity and zeal only to be equalled by that which made railway jobbers of every man, woman, and child in England about the same time. The Tamungong, with the usual policy of oriental governors, declared the precious gum a government monopoly. He appropriated the greater part of the profits, and still left the Malays enough to stimulate them to pursue the quest, and to gain from 100 to 400 per cent for themselves on what they procured from the aborigines. The Tamungong, not satisfied at buying at his own price all that was collected by private enterprise, sent out numerous parties of from 10 to 100 persons, and employed whole tribes of hereditary serfs in the quest of gutta percha.

This organized body of gum-hunters spread itself like a cloud of locusts over the whole of Johore, peninsular and insular. They crossed the frontier into Ligna, but there the sultan was not long in discovering the new value that had been conferred upon his jungles. He confiscated the greater part of what had been collected by the interlopers, and, in emulation of the Tamungong, declared gutta percha a royalty.

The knowledge of the article, stirring the avidity of gatherers, gradually spread from Singapore, northward as far as Pinang, southward along the east coast of Sumatra to Java, eastward to Borneo, where it was found at Brunei, Sarawak, and Pontinak on the west coast, at Ketu and Passir on the east. The imports of gutta percha into Singapore, from the 1st January to the 12th of July, 1848, according to their geographical distribution, were:—From the Malay Peninsula, 593 piculs; from the Johore Archipelago, 1,269; from Sumatra, 1,066; from Batavia, 19; from Borneo, 55. The price at Singapore was originally \$8 per picul: it rose to 23, and fell about the middle of 1848 to 13.

The commotion among the human race in the Archipelago was great, but the vegetable kingdom suffered most by it. In the course of three and a half years 270,000 trees were destroyed.—*Mechanics' Magazine, London.*

Comparative Value of British and American Iron.

Most of our readers are, we doubt not, aware of the vast amount of the transportation on the Philadelphia and Reading railroad, but few of them, probably, have reflected on the opportunity afforded by its vast business for testing the comparative durability of the different descriptions of iron—an opportunity probably unequalled in the world. For many years a record has been kept in relation to every single bar removed, showing the length of time it had been in use, and its condition when removed, so that it can be at a moment ascertained how many tons' weight had passed upon it before it became so far worn as to render its removal necessary; and the result of the whole has been

to establish the fact that true economy requires that American iron should alone be used for all future repairs, even at a much greater difference of price than now exists. That such is the case will be seen from the following facts:—

An English rail, weighing sixty pounds to the yard, requires ninety-four tons to the mile; the cost of which, at \$40, would be \$3,760. An American one, of fifty pounds to the yard, would require seventy-eight tons; which, at \$48, would be \$3,744. Experience has proved the latter to be more durable, and in every respect better than the former, and, therefore, to be much cheaper, even at a difference of \$8 per ton, or more than the whole of the present duty on foreign iron, whereas the actual difference is, as we learn, little more than \$5 per ton. Nevertheless, English iron, cheap and comparatively worthless, is imported by hundreds and thousands of tons, and will, we doubt not, continue to be so until the remainder of our furnaces shall be closed, when prices will again rise, and probably to the old level.—*Republic.*

Line of Steamers between Baltimore and Charleston.

Increased facilities of intercommunication must tend to link together, indissolubly, the commercial and social relation of our principal southern cities. It is with pleasure that we observe by the Baltimore papers that the steamers for the proposed line, between Charleston and that city, are now in course of building, and one of them (a very handsome model) is expected to be completed in a few weeks. The growing enthusiasm manifested in this important enterprise by the people of Baltimore will, we believe, be responded to, in a like spirit, by all who feel solicitude for the prosperity of our city, and the extension of her trade. The dry goods dealers, grocers, and shippers of Baltimore, have been doing a larger business of late, with North and South Carolina, than in former times, and dealers from the last named States, who were in the habit of making their purchases in New York, Boston and Philadelphia, express themselves sufficiently pleased with the facilities of the Monumental City, enjoyed last year, to induce them to renew their visits in future. The additional avenues of travel, and transportation of merchandise, which will be opened by the successful prosecution of the movement in question, cannot fail to promote this interchange of fraternal relations between two communities whose interests and institutions are identical.—*Charleston Courier.*

Coal Consumption

Is constantly and largely on the increase. Scarcely a year goes by that coal is not applied to new and important uses. According to Mr. R. C. Taylor, whose valuable work upon the subject is full of information, the area of coal formation in the United States is equal to 113,132 square miles; while the total area of these formations in Great Britain, Ireland, and the British Provinces of Nova Scotia, New Brunswick, Cape Breton and Newfoundland, is less than 30,000 square miles. Nearly the whole of this vast area is occupied by bituminous coal. The total area of the anthracite region of Pennsylvania is estimated at less than 400 square miles. Anthracite has now been successfully introduced into the manufacture of iron in Pennsylvania and South Wales. In 1842, but four furnaces used this coal in Pennsylvania. In 1846, nearly one-third of the iron manufactured in this State was made by anthracite. In Swansea Valley, South Wales, there were, in 1847, twenty-three furnaces using anthracite, while ten years before there were but three or four.

From the *Practical Mechanic's Journal.*

Timothy Hackworth.

[CONTINUED FROM PAGE 67.]

The character which he sustained in this competition rests on the merits of his production, the after-display of the adaptation of this engine to the regular traffic conveyance of the line, and the well-attested celebrity of her working long after "Ichabod," had been written over the memory of her rivals. After the full particulars of this trial, and the constructive arrangement of the engine, which were given in our earlier paper, it will be

unnecessary to recapitulate them here. Whilst engaged in this competition, a circumstance occurred which we think deserves to be chronicled. Some part of the machinery belonging to the "Novelty," Messrs. Braithwaite & Ericson's engine, having been broken in her transit to Rainhill, the makers were placed in rather an awkward predicament, as she could not be put on her trial until it was mended. Mr. Hackworth being made aware of this, generously offered to repair it for them. He took the broken piece of machinery, welded it, and put it to its lines with his own hands, whilst those gentlemen stood amazed at this remarkable exhibition of friendly feeling on the part of a rival.

Mr. Hackworth was now occupying a prominent line of engineering distinction. The spirited accomplishment of his locomotive undertakings deserves the highest encomiums; and the successful improvements and modifications of locomotives on the Stockton and Darlington railway, the economy and efficiency of which, whereby this line rapidly arose from an anomalous existence to a regularly-organised and well-ordered system, and its success as a trial line, is undoubtedly attributable, in no small degree, to the indomitable energy and constructive skill of this distinguished engineer. The Stockton and Darlington railway was the nucleus of the railway system. She laid bare those wonderful truths with regard to its efficiency, which subdued the prejudices of its stoutest opponents. It was after the proof positive derived from the successful experiments developed here, that the Liverpool and Manchester railway company determined on their mode of transit; in support of which Mr. Hackworth gave evidence, through Mr. Robert Stephenson, to the directors whilst deliberating on the course to pursue.

He never could be induced to advocate stationary engines for regular public traffic. With the pre-sence of genius he foretold the universality of locomotive application, and remained its steady friend and supporter.

In January, 1829, an advertisement was issued by the Stockton and Darlington railway company to engineers, offering premiums of 150 and 75 guineas for the best and second best plans, sections, and estimates, for the staiths, machinery, &c., for shipping the coal at Middlesbrough. In this Mr. Hackworth became a competitor, and obtained the premium of 150 guineas awarded by the company, and prepared working plans and specifications, agreeable to his own design, for the whole of the apparatus.

To him we owe the introduction of the crank-shaft for locomotive purposes; also, the single lever-reversing motion, the short-stroked pump, and many and various forms of heating surfaces for locomotives.

In 1834, he took the company's engine-works at Shildon, contracted for the haulage on the line, and began to manufacture for the public. The fame which he attained for the superiority of his manufacture, only had a parallel in the skill displayed in the constructive details, and adaptation to the various purposes for which they were required.

His professional services were in great repute throughout the neighborhood, and the collieries which were opening in the district were largely indebted to his engineering skill, for his numerous improvements in winding-engines and general mining machinery—amongst which was the application of the ordinary slide-valve, with its simple gearing, to powerful high-pressure engines, by the use of a relieving piston on the back of the slide for counteracting the steam pressure.

The simplicity of the ram engine is also worthy of note, the piston having a metal tube cast upon it at one end, which, working through a gland, formed the piston-rod; the tube being large enough to allow of the vibration of the connecting-rod, it was hinged on a pin passing through the centre of the piston transversely, thus forming a direct action to the crank, without the intervention of a parallel motion, or crosshead. Another novelty in locomotive mechanism, which was first introduced in 1837, was the lever-action, or the working a long crank with a short stroke in the cylinder. The utility of this principle was demonstrated in the first engine, and has been confirmed by subsequent experiments. Of this principle he was

a warm advocate, and continued to descant on its efficiency as long as he lived, giving it as his opinion, that it would ultimately take the lead, and he proved to be the best adapted in every respect for reciprocal action.

In 1840, after fifteen years spent in the service of the railway company, he removed to an establishment of his own, at Soho Works, Shildon. Here, with undiminished ardor, he pursued his professional career, aiding and stimulating, by his talents, the progress of mechanical science.

To the rotary engine he devoted a large share of study, and many were the machines of this kind started by his fruitful fancy, one of which formed the subject of a patent in 1836. He devoted considerable attention to the subject of smelting iron, with a view of economizing the process, but his ideas were never practically worked out, owing to the pressure of more immediate engagements.

It is not alone as a distinguished mechanical student that we must contemplate Mr. Hackworth, but also as a Christian and philanthropist, which he sustained in a most exalted degree. To a naturally fervent and benevolent disposition, he added the adornment of Christianity and love. Widely apart from the merely superficial, with him it was a reality, and shone conspicuously in daily life. Distinguished by a disposition peculiarly attractive, he won the esteem and regard of all with whom he became associated. He possessed a sympathy of soul which connected him with many of those noble institutions tending to mitigate the misery, and advance the moral and physical condition, of our race; and his influence was extensively felt in those praiseworthy efforts to propagate a knowledge of that Christianity, essential to the everlasting well-being of our common humanity.

In the year 1810, he became a member of the Wesleyan Society, with which he held honorable connection as a local preacher and class-leader until the period of his death. Naturally endowed with great moral courage and fortitude of mind, he possessed a fluency and happiness of expression, with a thread of delicate humor and anecdote pervading his discourses, which charmed all who listened to his artless eloquence, issuing directly from the heart, that will long be perpetuated with interesting remembrance.

The spread of divine truth in distant lands shared alike the liberality of his soul and his purse; yet of him it was aptly true, that "the right hand knew not what the left hand did." He avoided popularity, which had no fascination for him; he loved retirement, and preferred the joys of private life to worldly honors, which caused him, though a public character, not to be universally known. As a man, a friend, and a Christian, his name will live enshrined in the noblest sympathies of our nature. Possessing great natural abilities, kind, compassionate, affable, and sympathizing; that exalted moral worth which alone belongs to the nobility of humanity, adorned in a remarkable degree his character and conduct—which, combined with great frankness, urbanity, and simplicity of deportment, made him to be esteemed and loved by all who knew him. By his workmen, he was revered, respected and loved.

His life was characterised by the accomplishment of great moral and physical results, the extension of mechanical science, and the alleviation of the distress of suffering humanity, as well as the formation of undying friendships which will bloom beyond the grave. Constitutionally healthy and robust, his life was one of great activity, both mentally and physically. Every moment was pressed into service, either professionally or in the performance of some good work, which was continued until within a few days of his death. His affliction was but of short duration, during which the greatest resignation, patience, and consideration for those around him, were very conspicuous.

On Friday morning, 28th June, he complained of being unwell, and retired to his room. He grew rapidly worse, and at ten o'clock, p.m., 7th July, was numbered with the dead.

The multitude of people which assembled spontaneously at his funeral, may be regarded as a striking testimony of that affectionate esteem with

which he was regarded by all classes of the community.

Such was the end of that mortality, the existence of which has been marked by the accomplishment of great results by its energy and application, which had nobly fought its course upwards, conquered difficulties, subdued prejudices, and become associated with one of the greatest mechanical achievements of modern times, that has rendered him famous as the father of locomotives.

Railroad Check Ropes.—Quite a neat and available improvement in the coupling and checkropes of railroad cars has lately been invented by a Mr. Ware of R. I. The present mode of using such ropes is by passing them over the top of the cars; but by his invention they are made to run inside at the ceiling, proving a check rope for each car.

These ropes are so constructed that they can be attached to each other, and thus form a continuous line from the engine to the hindmost car. They can be attached or detached in an instant, and the coupling is not easily deranged.

AMERICAN RAILROAD JOURNAL.

Saturday, February 8, 1851.

Patent Machine Picket Fence

SIX DIFFERENT STYLES of this fence are now made by patent machinery; and is by far the most economical fence for Railroads, Farms, Yards, etc., ever yet offered to the public, costing only from 4 to 30 cents per foot, according to pattern; and is so put up as to be shipped at a trifling expense. Full particulars will be furnished, by addressing the subscriber, to whom all orders should be sent.

N. STATTON, Troy, N.Y.

Stock and Money Market.

The speculative bubble, which has for months past been swelling its dimensions, has completely collapsed. Its fragments blown in every direction, have carried destruction to many a luckless fellow, struggling under a load of "fancies." The greatest fall has been in the New York and Erie, Reading, and Canton stocks. These have severally fallen 16, 17 and 25 cents. on the dollar. When we take into consideration the immense amount of property which these stocks represent, we see here a rise and fall, to the extent of millions, without any appreciable cause but the operations of brokers in Wall street. Nothing has occurred to make these stocks less valuable than they were a month since. Money is still abundant for all business transactions, and undoubted securities still command their usual rates.

The recent gambling operation in stocks is certainly one of the most remarkable in its results that we have witnessed for years. One always expects that financial crises, which occur at stated periods, and seem to be a necessary law in all business operations, will carry down the price of all kinds of stock. A great fall in one kind of property affects, through sympathy, the value of every kind. But, we now see a perfect route in the stock market, with broad sunshine overhead; with an easy state of the money market, and with auspicious prospects for the future. It shows that the recent advance has been a mere fiction. But these fictions work the most injurious consequences. A great number of unsuspecting persons, who have neither the means nor opportunity for getting at the merits of the securities, are tempted to buy merely because they are current in the market. It is the fall only that opens his eyes, too late to help him. A large number of operators, too, are suddenly stripped of all they possess. The securities, which have played the shuttle-cock between the opposing parties, are sorely damaged by the blows and tumbles they have received.

But these are not the worst consequences of stock jobbing. A great fall is sure to embarrass the money market. The operators themselves exert a great influence in monetary affairs, and their condition re-acts upon the market, and a rapid decline of stocks begets a general distrust, which injuriously affects all other branches of business and all other species of property.

The securities of railroads in progress, the negotiation of which make up an important part of the transactions of Wall street, still continues in good request. We are inclined to believe that they have sold as well for a month past as they have at any time within a year. These are likely to be viewed with increased favor, as the roads, as fast as they are opened, demonstrate the goodness of the security upon which loans are based.

Our western friends complain that securities, as good as can be made by any railroad companies in the west, sell at 90 cents on the dollar, while others of a similar character sell at from 100 to 110. The reason of this is obvious, though apparently not founded upon any sufficient cause. The market value of securities depends upon their reputation, rather than intrinsic worth. The 6 per cent. bonds of the Boston and Worcester railroad, for instance, sell at 106, 16 per cent. higher than a 7 per cent. Western bond. As far as ultimate security is concerned, the one is as good as the other. The difference between the two is, that the value of the former is well known to all, while that of the latter is not. A capitalist does not so much look at the amount of income which a security yields, as its safety and convertibility. He prefers to invest in United States stock to all others, because he knows that he can at an instance notice convert them into money, in whatever market he may find himself. A well-known and undoubted 5 per cent. stock, such as United States, New York and Massachusetts 5's, will always command *par*, and will always be sought after for investment in all conditions of the market; so with the 6 per cents of our older and well-known railroads. These are always at a premium, for a similar reason. But time is necessary to invest securities with such attributes, and those of our western friends that are in the market now must make the sacrifice due to their position. They pay a penalty for no other reason than that of being pioneers in railroad construction. Time will bring with it that general confidence and reputation, the want of which is now so severely felt. It is in giving these securities this character that the capitalist makes his money. It is through such a person that securities reach the man who buys to hold, and, such is the course of business, that all new securities must have the endorsement of some leading man on 'change, before the person who stands behind him will venture to buy. For a security to be unknown, is to be, for all practical purposes, worthless. It is here that capital makes its money; not in imparting any additional value, but in convincing others of this fact. The course for our western friends to pursue is to call public attention to their works, and their securities in every way possible, relying with full confidence upon the fact that, they will be sure to be appreciated when thoroughly known. Bonds issued by such a company as the Utica and Schenectady are entirely above the influence of individual operators, and need no endorsement to give them currency. They are known as well as a dollar, to be exactly what they represent.

The prices of English rails by the last advices

are not quite so firm as previous quotations. Rails here are quoted all the way from \$40 50 to \$44 per ton, according to the views of holders and manufacturers, as to the probabilities of a rise. Contracts for a good article can be made here for \$40 50.

SALES OF STOCK IN NEW YORK.

	February 7. Sales.	January 31. Sales.
U. S '67 Loan.....	115½	115½
Erie R.R.....	79½	83
Harlem R.R.....	64½	65
Stonington.....	42	46
L.I. R.R.....	21½	21
Norwich & Wor....	61	63½
Albany & Sch'y R.R.	90	94
Del. & Hudson.....	133	134½
Rochester and Syracuse	112½	
Reading.....	62	58½
Morris Canal.....	19½	19
Erie income.....	91½	98
Hudson River.....	79	
" " Bonds.	103	
" " 2d mor	96	
Utica and Sch'y RR.	123	
Ohio and Pennsylvania railroad bonds.	96	
New York City Loan		
5s '60.....	103	
Erie 7s '68.....	109	
Canton.....	70	
Farmers Loan.....	61	

SALES OF STOCKS IN BOSTON.

	Feb. 6.	Jan. 30.
Old Colony Railroad.....	68	68
Boston and Maine R.R.....	105½	106½
Eastern Railroad.....	103	104
Fitchburg Railroad.....	111	111½
Michigan Central Railroad....	97½	98
Northern Railroad.....	72½	72½
Vermont Central Railroad.....	35½	36½
Vermont and Mass. R.R.....	30	31½
Western Railroad.....	106½	107
Ogdensburg Railroad.....	38½	39½
Rutland Railroad.....	56	56
Portland, Saco & Portsmouth R.R	99	99
Boston and Worcester Railroad.	105½	106½
Rutland Railroad Bonds.....	88	89
Vermont and Mass. R.R. Bonds..	89	
Ogdensburg Railroad Bonds.....	99½	99½
Vermont Central R.R. Bonds.....	92	92½
Norfolk County R.R. Bonds.....	63	69
Boston and Providence R.R.....	84½	84½
Philadelphia, Wilm'gton & Balt.	30	31½
Concord R.R.....	55½	53½
Connecticut river R.R.....	78	78
Cheshire R.R.....	63	64
Boston and Lowell.....	114	115
Boston, Concord & Montreal....	43	41
Nashua & Lowell.....	108	109
Fall River Railroad.....	92½	
Sullivan Railroad.....	19	
Manchester and Lawrence.....	90	
Worcester and Nashua.....	51	
Rutland Railroad Bonds.....	88	

Illinois.

Railroad from Cairo to Chicago.—Below we give the memorial of certain eastern capitalists to the legislature of Illinois, proposing to build the road for which a grant of land was made by the general government.

MEMORIAL.

To the honorable, the Senators and Representatives of the State of Illinois, in general assembly convened.

The memorial of Robert Schuyler, George Griswold, Gouverneur Morris, Jonathan Sturgis, Geo. W. Ludlow, and John F. R. Sanford, of the city of New York, and of David A. Neal, Franklin Haven and Robert Rantoul, Jr., of the city of Boston and vicinity, respectfully represents—

Having examined and considered an act of the Congress of the United States, whereby land is donated by the United States for the purpose of insuring the construction of a railroad from Cairo, at the mouth of the Ohio river, to Galena, and the northwestern angle of the State of Illinois, with a

branch extending to Chicago, on Lake Michigan, on certain conditions therein expressed; and having also examined the resources of the tract of country through which it is proposed that the said railroad shall pass, and the amount of cost and space of time necessary to construct the same, the subscribers propose to form a company, with such others as they may associate with them, including among their number persons of large experience in the construction of several of the principal railroads in the United States, and of means and credit sufficient to place beyond doubt their ability to perform what they, hereinafter propose, make the following offer to the State of Illinois for their consideration:

The company so formed by the authority and direction of the State of Illinois, fully and faithfully perform the several conditions, and execute the trusts in the said act of Congress contained. And will build a railroad, with branches between the termini set forth in said act with a single track, and complete the same ready for the transportation of merchandise and passengers, on or before the 4th day of July, which will be in the year of our Lord eighteen hundred and fifty-four.

And the said railroad shall be in all respects as well and thoroughly built, as the railroad running from Boston to Albany, with such improvements thereon, as experience has shown to be desirable and expedient, and shall be equipped in a manner suitable to the business to be accommodated thereby.

And the said company, from and after the completion of the said road, will pay to the State of Illinois annually — per cent. of the gross earnings of said road, without deduction or charge for expense or for any other matter or cause, provided that the State of Illinois will grant to the subscribers a charter of incorporation with terms mutually advantageous, with powers and limitations as they in their wisdom may think fit, as shall be accepted by the said company, and as will sufficiently remunerate the subscribers for their care, labor and expenditure, in that behalf incurred, and will enable them to avail themselves of the lands donated by the said act, to raise the funds, or some portion of the funds, necessary for the construction and equipment of said railroad.

Iowa.

Dubuque and Keokuk Railroad.—A meeting of the friends and stockholders of this road was held at Iowa City, at which two companies were organized—to wit: the "Dubuque and Keokuk railroad company north," and the "Dubuque and Keokuk railroad company south." The first is to build the line from Dubuque to Iowa City, and the latter the road from Iowa City, to Keokuk. It was reported by a committee on stock that 2,180 shares of \$100 each had been subscribed, or \$218,000.—Calvin J. Price, Esq., was chosen President of the Southern company, and George Green, Esq., of the Northern.

Maine.

Up-River Railroad.—A committee of stockholders, and others interested in the subject, was raised at the meeting of the Kennebec and Portland railroad company, held at Augusta on the 8th ult, "to take into consideration the subject of the extension of the Kennebec and Portland railroad north and east from Augusta, and report to the adjourned meeting of said company, to be held at the same place on Tuesday, February 4th."

The committee having been duly notified, held a meeting on Thursday, the 16th ult., and spent the day in deliberating on the subject referred to them, and adopted the following resolutions, offered by Capt. Coffin, of Sidney, with directions to the chairman to report them to the adjourned stockholders' meeting.

Resolved, That in the opinion of this committee it is highly important to the interests of the Kennebec and Portland railroad company, that said railroad, or one to be connected therewith, should

be extended and constructed forthwith, up the valley of the Kennebec river, as far, at least, as Show-began; and, as an important and efficient means of securing the accomplishment of so desirable an object, they would earnestly recommend to said company, to offer their guaranty of six per cent. interest per annum, for a term of years, on the capital stock necessary to construct the same as far as Kendall's Mills in Fairfield; provided, said railroad shall be finally located to the satisfaction of the directors of the Kennebec and Portland railroad company.

Resolved, That, if any further legislative grant of power is necessary to attain the object above expressed, it is advised that a committee be raised to petition the legislature at its next session, for the necessary authority for that purpose.

JAMES L. CHILD, Chairman,
at the meeting of the committee.

It is obvious that the proposition to be submitted as above, at the adjourned meeting of stockholders in the Kennebec and Portland railroad, is one of no small consequence, and it is desirable that a very full attendance of the stockholders should be had, that a wise and satisfactory decision of the question may be obtained.

Maryland.

York and Cumberland Railroad.—This new work, by which a direct communication is effected between the city of Baltimore and the fertile Cumberland valley, will be regularly opened on Monday for trade and travel. We learn that large quantities of produce, at different points in the valley and also at Harrisburg, are awaiting the event, and will forthwith be sent down to the Baltimore market. The work is a short one as to length, but a very important one in the connections with other roads which it consummates, and the influences which it will exercise in our favor on the trade of one of the most productive sections of Pennsylvania. Already, in the anticipation of the regular opening, a consignment of flour and whiskey was received yesterday by this road, from the valley, by Mr. James Whitford, Spear's wharf.—*Baltimore American.*

Virginia.

Hempfield Railroad.—This company has completed its organization by the election of T. M. T. McKennon of Washington, as president; Hon. Joseph Khuns and Hugh Y. Brady of Greensburg, S. Bentley, Esq., of Bentleysville, George Wilson, Esq., of West Alexander, Messrs. Samuel Neal and James Powell of Wheeling directors.

The Monongahela Republican says that the company is now awaiting the action of the Virginia legislature, before which body a bill is now pending for granting the right of way. Should it prove favorable, the road will be located at once.

Massachusetts.

Boston and Worcester Railroad.—At the annual meeting of the stockholders of the Boston and Worcester road yesterday, the following list of directors was unanimously chosen, viz:—Thomas Hopkinson, Daniel Denny, Nathaniel Hammond, Benjamin F. White, George B. Blake, Timothy C. Leeds, William Parker, Isaac Emery and George Morey. The only change of the board is the substitution of Mr. Morey for David Henshaw, who has been a director of the corporation from the date of its charter. Mr. Morey paid a handsome tribute to his predecessor, who retired on account of physical disabilities, and on his motion, supported by Wm. Sturgis in some brief remarks, a handsome vote of thanks was paid to Mr. Henshaw for his services. Mr. Sturgis also offered a resolution complimentary to the late Addison Gilmore, which was passed, and the meeting adjourned.—*Boston Courier.*

Michigan Southern Railroad.

The earnings of the Michigan Southern railroad continue to show a large advance on previous years. For the last two months the earnings compare with those of the corresponding period last year as follows:

	1849-50.	1850-51.
December.....	\$4,876 96	\$9,973 66
January.....	2,510 80	16,865 58
Total.....	\$7,387 76	\$26,839 24
		7,387 76

Increase in 2 months.....\$19,451 48
Equal to 250 per cent.

This increase was attributable to the opening of twenty-five miles of new road which were brought into use about the middle of December. About twenty-five miles more of new road will be brought into use in March; and we understand that the road will be completed to the State-line of Indiana by July, and that the Northern Indiana railroad, (which is an extension of the Michigan Southern from the State-line of Michigan through the State of Indiana,) will be finished to South Bend—162 miles from Lake Erie—by September next, and to Lake Michigan, at Michigan City, by January next. West of Michigan City the road is already graded and ready for the iron for nearly 30 miles; and it is in contemplation to have the entire line from Lake Erie to Chicago in operation by the Spring of 1852. Iron has been purchased sufficient to carry the road to Lake Michigan, and the work of construction is actively progressing along the whole line in Indiana.

Missouri.

At a meeting of the directors of the Hannibal and St. Joseph railroad, on the 8th January, Col. R. M. Stewart was unanimously elected President; Washington Jones, of Buchanan, Clerk; E. M. Moffett, of Marion, Treasurer. Commissioners to open books of subscription of stock in the various counties, were appointed as follows: Wm. H. Davison, J. B. Marmaduke, and John McAfee, Shelby county; V. E. Bragg, S. E. Nelson, Benedict Wel-den, Davies; J. H. Hubbel, Jas. Livingston, and John Graham, Grundy; W. Hollyburton, E. Hoyle and A. W. Flournoy, Linn; Thomson Smith, Col. Shambaugh, and Mr. Parrott, DeKalb; Thomas E. Burch, Mr. McClintock, and the Hon. Jas. H. Birch, Clinton; Charles J. Hughes, Geo. Smith, Walter A. Doak, Caldwell; Thos. E. Thompson and Thos. E. Hatcher, Palmyra.

Pennsylvania.

Ohio and Pennsylvania Railroad.—The Pittsburgh Gazette gives the following account of the purchase recently made by this company—according to the Gazette it is a first rate purchase, and will result very beneficially to the company:

"The work on the Ohio and Pennsylvania railroad, in Allegheny city and vicinity, is going forward with great rapidity. The track will be ready for the rails early in the spring, and as the iron is on hand we may expect this end of the line to be finished in good season.

The company has purchased, as a site for the outer depot, the twenty acres of ground, situated in the lower part of the city, recently offered for sale by Wm. O'Hara Robinson, Esq. The price paid for the ground was \$35,000, and the mode and time of payment is favorable for the company. The company have secured this beautiful and most eligible site at a rate decidedly cheap. It will be worth quadruple this amount in a few years.—

Nearly every question of depots, right of way, &c., so difficult to manage in a region like this, is now settled, and the work under its present able management will go rapidly forward to completion.

Illinois.

Illinois Central Railroad.—The Chicago Democrat, of the 21st inst., gives the following piece of railroad intelligence:

We learn from the Ottawa Free Trader, that the Auditor of State has completed the map of land through which the Central railroad passes, and makes the vacant land on the main track, between Cairo and Peru, amount to 3,174,000 acres. Also, that Hon. Robert Rantoul, jr., of Boston, has arrived at Springfield, with a proposition from capitalists to construct the Central railroad. They propose to take the grant off the hands of the State, and build the road by July, 1854, with a single track. They will pay the State out of the gross proceeds, from the time it goes into operation. The following signatures appear to the proposition:—

Robert Schuyler, Gouverneur Morris, Jonathan Sturges, George W. Ludlow, and John F. A. Sanford, of the city of New York; D. A. Neal, Franklin Haven, and Robert Rantoul, jr., of Boston and vicinity.

They offer to construct the road in all respects equal to that running from Boston to Albany, and with some further improvements. Mr. Rantoul was greatly instrumental in the construction of the Western railroad, in Massachusetts, running from Boston, Mass., to Albany, New York. The names that are attached to this proposition speak well for its character, and are a guarantee of its proper fulfillment. The early period at which the road is proposed to be completed, is also of vast importance to the State, and should have great weight. We are also inclined to the belief that if not disposed of in some such way to a responsible company, the donation will be frittered away by political harpies, and mere adventurers and sharpers, and the road never built.

Pennsylvania.

Railroad from the Water Gap to Leggett's Gap.—The Stoudsbury Democrat says that the commissioners appointed to open the books for subscriptions to the capital stock of the Delaware and Cobb's Gap railroad company met in that borough. The books opened for subscriptions of 18,000 shares at \$50 per share, all of which was immediately taken upon the opening of the books, and \$5 on each share paid in. The stock was taken by the following gentlemen:

John J. Blair, Blairstown, 1,000 shares; T. W. Gale, New York, 1,000; S. C. Scranton, New York, 480; G. W. Scranton, Scranton, 500; J. C. Platt, Scranton & Platt, Scranton, each 1,000; E. R. Griffith, New-Haven, Ct. 1,000; S. Marsh, Edward Mowray, W. E. Dodge, John J. Phillips, Jas. Stokes, Daniel S. Miller, J. F. Sturges, R. Sprague, New York, each 1,000; Henry Hackett, New Haven, 1,000; G. Buckley, A. S. Phelps, New York, each 1,000; J. M. Porter, Easton, 5; Samuel Taylor, Stateford, 5; P. H. Mattes, Easton 5; H. W. Nicholas, Wilkesbarre, 5.

The sum paid in, amounting to \$90,000, the commissioners deposited in the Belvidere Bank. The commissioners immediately gave notice to the governor, of the proceedings which had taken place, and he will doubtless issue the charter for the said road at an early day. The design is to connect this road on the west with the Leggett's Gap railroad, (which will be connected with the New York and Erie railroad,) and on the east with the Newburgh and Chester railroad, running through the County of Sussex.

Central Railroad.—The Philadelphia papers publish the annual report of the board of directors of the Pennsylvania railroad company, as just submitted to the stockholders. It comprises the period between October 1, 1849, and December 31, 1850.

The receipts of the company on account of the capital stock, were \$5,822,210. The disbursements \$5,095,496. Balance, \$726,663. Amount of subscriptions yet to be collected, \$1,013,640. Thus the available means of the company for the prosecution of the work, amount to \$1,740,303. The eastern division of the road has been completed to the Tyrone Forges, and in a manner entirely satisfactory to the board. Upon the western division, the work thus far has been well done, and has been executed as rapidly as was deemed consistent with durability. The eastern division road was opened for use to the Portage intersection, one mile west of Hollidaysburg, on the 17th Sept. last.

During the months of October, November and December, the net receipts for passengers and freight were \$42,084—equal to annual interest of \$382-100 per cent upon the cost of this division, including the Hollidaysburg branch, with the interest thereon, chargeable to construction, and of all the cars, locomotives, machinery and fixtures in use. This result induces the board to believe that the road will, during the current year, earn six per cent upon the cost of whatever portion of it may be brought into operation—and that it will henceforward yield an equal or larger per centage upon the whole outlay.

Massachusetts.

Fitchburg Railroad.—At the annual meeting of the company was held in Boston on the 21st inst., Jacob Forster, president, in the chair. The report of the directors was presented N. F. Cunningham, E. H. Derby, H. Adams, Alva Crocker, and Israel Longley were chosen directors for the ensuing year, having all the votes cast, 3635 each, except Derby, who had 3518. On the motion of D. Shattuck, he and Thomas Sumner, Josiah Bearn, Thos. Thatcher, and Amos Hawes, were appointed a committee to investigate the cause of the disproportionate increase of freight to the increase of passengers. On motion of T. Thatcher, the directors were authorized to complete the arrangement by which the Waltham and Watertown branch railroad agree to build a road $\frac{1}{2}$ of a mile long to connect with the Fitchburg, at a cost of \$40,000. On motion of Mr. Wood, of Somersworth, the directors were requested to publish hereafter the names of all persons who pass over the road free.

We annex a condensed statement of the operations of the company for the past year:

Earnings.....	\$533,524 28
Premium on stock sold.....	18,083 85
Total.....	\$551,607 13
Expenses and interest.....	226,541 15
Balance.....	\$325,066 98
Dividend 8 per cent.....	276,800 88
Surplus to cover contingent fund....	\$25,938 25
Contingent fund last year.....	58,606 85
Total.....	\$84,544 10
Paid for cars.....	8,214 92
Amount of contingent fund.....	\$76,329 58
Increase of income over last year.	\$58,246 70
Or about 12 per cent.	

Virginia.

Virginia Central Railroad.—At a public meeting in Mason county on the subject of this road, Henry J. Fisher, George W. Sumners, Benjamin H. Smith, Samuel Price and Wm. Smith, members of the Virginia Convention, were requested to act as "Lobby members" to the House of Delegates, with the view of helping on the Virginia Central railroad.—And they were requested further to impress upon the public, by all manner of means, the advantages of the route, via the Kanawha Valley to the Ohio, where the meeting say the people of Ohio are ready to meet Virginia with a railroad thence to Chillicothe, to connect with the Ohio system of roads at that place.—Dispatch.

Seaboard and Roanoke Railroad.—The cars now run as far as Franklin. Fare between Portsmouth and Franklin \$1.75. Children and colored persons 87 $\frac{1}{2}$ cents. This road will be completed as far as Weldon by the early part of the summer.—Roanoke Rep.

Orange and Alexandria Railroad.—We learn from the Alexandria Gazette that the Alexandria railroad company have contracted with Mr. James Dunlap, of Petersburg, agent for the iron manufacturers in Wales, for the delivery of 2,500 tons railroad iron for the use of the road. The whole to be delivered by December next. This purchase, with that heretofore made and already received, will lay down sixty miles of road.

Maryland.

The Baltimore American states that a project of a railroad connection between Baltimore and Hagerstown, by the route through Westminster and Hannan's Gap, is engaging the serious attention of the people of Carroll, Frederick and Washington counties. It will traverse one of the most fertile and productive sections of Maryland.

The Tehantepec Expedition.

The steamer Alabama returned to New Orleans on the 10th inst., from her trip to the Isthmus of Tehantepec with the surveying expedition. The New Orleans papers contain some interesting accounts of the trip. The Alabama, on her outward passage, left New Orleans on the 10th of December, and arrived at Vera Cruz on the 16th. She was detained at the latter port several days on account of a refusal on the part of the local authorities to grant a permission to prosecute the voyage until definite instructions had been received from the capital. The permit at length arrived, and she departed on the evening of the 23d. On the morning of the 25th she entered the Coatzacoalcas river, and in the evening arrived at Minatitlan. At this place the surveying expedition was divided into three parties; the first or hydrographic party was led by Lieutenant Temple, U. S. Navy, and the other two by Messrs. J. J. Williams and J. C. Avery.

The hydrographic party was to commence work on the 31st of December, on a survey of the river above and below Minatitlan, with a re-survey of the mouth below. The land parties were to proceed up the river in a few days. The width of the river at Minatitlan is said to be not less than 780 feet, and the depth of the water not less than 650. The town of Minatitlan is 18 miles from the mouth of the river. It is an inconsiderable place, containing from 200 to 300 inhabitants. The people evinced a mixed race, destitute of energy, and living a life of idleness. The soil in this region is extremely fertile, producing many vegetables spontaneously and domestic animals abound, so that no exertion is necessary for the procurement of food. The navigation of the river can be made good to that place for the largest size ships, and forty miles further for ordinary shipping. It is entirely free from bars and snags, and has advantages not inferior to those of any river of its size in the United States. It is stated that the minds of all who are there are impressed with a full belief of the practicability of the route across the Isthmus.

Marvels in the Cornish Mines.

Some of the mines are truly grand undertakings. The consolidated mines, the largest of the Cornish group, employ upwards of 3,000 persons. One of its engines pumps water from a direct depth of 1,600 feet, the weight of the pumping apparatus alone being upwards of 500 tons; the pumping-rod is 1,740 feet long, and it raises about 2,000,000 gallons of water in a week, from a depth equal to five times the height of St. Paul's. These are, indeed, wonders to marvel at! The consolidated and united mines, both belonging to one company, are stated to have used the following vast quantities of materials in a year: Coals, 15,270 tons; candles, 132,144 lbs.; gunpowder, 82,000 lbs.; leather straps, &c., 13,493 lbs.; pick and shovel handles, 16,698 dozens. Sir Charles

Lemon has estimated that, in the whole of the Cornish mines, \$13,000 worth of gunpowder is used annually; that the timber employed in the underground works equals the growth of 140 square miles of Norwegian forest, and that 37,000,000 tons of water are raised annually from the mines.

New York.

It is stated that new subscriptions to the stock of the Williamsport and Elmira railroad have been received to the amount of \$500,000, and that the owners of the 25 miles already constructed from Williamsport to Ralston, have surrendered their rights to the corporation, in consideration of receiving stock for the same. At a late meeting of the directors the books were closed, and the whole line placed under contract. Joseph Gonder, jun., one of the enterprising firm, who has just finished the York and Cumberland railroad, and also one of the firm who finished, about a year ago, the railroad from Elmira to Seneca Lake, has contracted to re-lay, with a T rail, the 25 miles already constructed and to put it in complete repair, and also to construct the whole line of 50 miles from Ralston to Elmira—the track to correspond in width with the New York and Erie road.

The directors have authorized the taking of a loan to the amount of \$600,000, on 7 per cent. Bonds secured by mortgage of the whole road, a distance of 75 miles. In addition to this security, the company is entitled to the descending tolls for 80 miles of the Pennsylvania canal, on all articles brought on to the canal at Williamsport by the railroad, for the period of 15 years, after the completion of a single track to Elmira.

Complete Census of Virginia.

The First Auditor of Virginia has prepared the following statement of the population of Virginia, as returned by the United States Marshals:—

CENSUS OF 1830.				
Districts.	White.	F.Col'd.	Slaves.	Total.
Valley.....	134,791	4,745	34,772	174,308
Trans Allegh'y.	183,854	1,598	18,665	204,117
Piedmont.....	208,656	12,026	230,861	451,542
Tidewater.....	167,001	28,980	185,457	281,438
Aggregates..	694,302	47,349	469,755	1,311,405

CENSUS OF 1840.				
Valley.....	136,796	5,188	33,697	165,681
Trans Allegh'y.	234,774	2,360	20,040	257,174
Piedmont.....	198,868	13,036	222,460	434,359
Tidewater.....	170,560	29,262	172,791	372,583
Aggregates..	740,608	49,841	468,788	1,239,797

CENSUS OF 1850.				
Valley.....	163,177	5,319	38,798	207,294
Trans Allegh'y.	331,586	2,483	24,436	358,504
Piedmont.....	216,717	13,166	234,057	463,939
Tidewater.....	187,955	32,790	178,681	399,126
Aggregates..	899,134	53,757	475,972	1,428,863

In order to exhibit more conspicuously the relative progress of eastern and western Virginia since 1840, we make up from the foregoing figures the following tabular comparison:

	1840.	1850.	Inc.
Eastern whites.....	369,398	404,371	34,973
“ free colored.....	42,393	45,956	4,563
“ slaves.....	395,251	412,738	17,487
Total.....	806,942	863,065	56,123
Western whites.....	37,560	494,763	123,203
“ free colored.....	7,548	7,801	253
“ slaves.....	33,737	63,234	9,497
Total.....	433,863	565,790	132,943

These results are considerably more favorable to eastern Virginia than it was anticipated, when the convention adjourned in the fall, that they would be. There has been a decided increase in both its white and slave population. Whilst the western majority of whites is 90,000, instead of 150,000 as was predicted, the eastern majority of aggregate population is 297,267.

If the representative federal number be about 100,000, as is commonly supposed, the State delegation in the House of Representatives will be reduced from 15 to 12.

Pennsylvania.

Youghioghany Slack Water.—Mr. White: I do not recollect having seen any description of this valuable improvement, and, I think it is due to the judicious and skillful engineer, James E. Day, under whose direction it was carried on and completed, that it should be publicly noticed. The work is now in successful operation, and gives very strong promise of yielding pleasing dividends to the stockholders, great facilities to the country through which it passes, increased business to our city, and it would be hard, indeed, that the engineer who directed its execution should be forgotten.

The law incorporating the company fixed the maximum lift of the locks at eight feet, but a supplement increased the lift to thirteen feet thirty-three hundredths.

The total fall of the Youghioghany, from Robbs-town or West Newton, to the foot of dam No. 2, on the Monongahela river was twenty-six feet 66-100, or 26 feet 8 inches.

Two locks then of the maximum lift allowed by the supplementary act, divides the fall into equal lifts of 13 feet 4 inches each.

The locks are constructed on the composite plan, the walls laid of dry masonry, and laid with two courses of jointed plank sheeting.

The dams are constructed of earth work filled in with stone sloped on the upper side 15 inches to every foot of rise, and on the lower side 5 feet 22-100 to one foot rise. The whole height of the dams from the bed of the river is from 16 to 18 feet.

The mitre sill of lock No. 1, on the Youghioghany, is 4 feet below the comb of the dam No. 2, on the Monongahela, and dam No. 1, on the Youghioghany, throws 5 feet of water upon the mitre sill of the dam above.

This difference was made under the belief that the rapidly and increasing trade on the Monongahela will soon obtain for that company the privilege of increasing the height of their dams, and thereby secure to the Youghioghany company a depth of full five feet at the lowest stage of water, and thus accommodate the coal trade from the head of their upper pool, without any further expenditure of money by the Youghioghany company.

The engineer in planning the work, looked to the means of the company as well as to the trade to be accommodated.

[Pittsburgh Gazette.

The Tariff.

The following proposed modifications of the existing tariff were offered as an amendment to the deficiency bill, in the House of Representatives on Tuesday, by Mr. Strong:—

And be it further enacted, That on and after the first day of April next, the duties required by law to be levied, collected, and paid on goods, wares, and merchandise imported into the United States, shall be assessed on the market value thereof, with the addition of such charges as are now imposed by law, at the time and place of export, provided that upon all descriptions of iron, upon machinery made wholly or in part of iron, and upon anchors, chain-cables and anvils, the duties shall be assessed upon the average prices, with charges added, which like descriptions of iron bore in the principal ports of the country whence imported, during the ten fiscal years immediately preceding the year of importation, such values and charges to be ascertained and declared by the Secretary of the Treasury as the basis for each succeeding fiscal year.

Sec. 2. And be it further enacted, That on and after the first day of April next, the duties upon window glass and linseed oil shall be thirty per cent, and upon all descriptions of iron, upon machinery made wholly or in part of iron, and upon chain-cables, anchors and anvils, the duties shall be 40 per cent., provided that any excess of duties imposed by this act on any railroad iron imported for the use of any railroad, and actually and permanently laid down for the use of such railroad, within one year after the passage of this act, shall be remitted by the Secretary of the Treasury, on satisfactory proof being furnished that such iron was so imported and laid down.

Sec. 3. And be it further enacted, That, on and after the first day of April next, the duties upon all cordage and yarns composed wholly or in part of hemp or grass, upon all manufactures composed wholly or in part of sheep's wool, and upon all refined sugar, shall be respectively ten per centum ad valorem, over and above the rate of duty now assessed by law on hemp and sheep's wool manufactured, and raw sugar.

Sec. 4. And be it further enacted, That, on and after the first day of April next, raw silk, indigo, and all articles which on the twenty-ninth day of July, 1846, were exempt from duty, shall be admitted free of duty.

Sec. 5. And be it further enacted, That to prevent frauds by undervaluations, and to insure uniformity in appraisements, there shall be appointed, as now provided for local appraisers, three appraisers at large, who shall prepare rules for the government of the local appraisers, visit the several ports of the United States, and perform such other duties as the secretary of the treasury may approve and direct; each of which appraisers shall receive an annual compensation of two thousand dollars, with his necessary travelling expenses, to be fixed by the secretary of the treasury.

Sec. 6. And be it further enacted, That the periods during which, by existing laws, imports deposited in public warehouses may be withdrawn for immediate exportation or consumption, be and the same are hereby extended to three years.

[On Wednesday, this amendment was decided to be out of order, and it was not received, and the prospect of any revenue the present session is at an end we presume.]

ANNUAL REPORT

Of the President and Directors of the East Tennessee and Georgia Railroad Company, to the Stockholders in said Company, at their meeting on Monday, January 6th, 1851.

The contract which existed at the time of the last yearly meeting of the stockholders, with Duff Green, for the construction of the road, was by agreement, surrendered by him on the 5th of April last, the company agreeing to pay him the estimates for work, &c., up to that date; out of which were to be paid, first, the debts due from said Green to his sub-contractors, for work, and which debts were by the agreement assumed by the company, and the balance, if any, to said Green. The debts thus assumed by the company, it is ascertained, will fully cover the estimates at said date, and they are now paid, with the exception of two or three small claims yet outstanding.

After the surrender of the contract by Gen. Green the work was continued by the sub-contractors, for the company, until some time in May, when a contract was entered into with Messrs. Wm. Grant & Co., for furnishing the balance of the materials needed—iron rails, chairs and spikes excepted—and for completing the work, including the laying of the main track and turn outs from Dalton to the Hiwassee river, for the sum of \$90,000, one half payable in the stock of the company, and the other half in five per cent state bonds. This aggregate sum may be increased or diminished by the result of the actual measurement of items of the work, an approximate estimate, by the item being set down by the engineer in the contract as the amount of work to be done.

In April, and again in July, the board of directors, by resolutions, authorized and directed the President of the company, A. D. Keys, Esq., in conjunction with the agent of the State, and the engineer of the company, M. B. Prichard, Esq., to purchase iron to lay the road from Dalton to the Tennessee river, and the necessary locomotives, cars, &c., to put the road in complete operation—and authorized the issuing of stock of the company and company bonds, to be used in contracts at par.—This authority to issue bonds and stock, in contracts, was given and used to enable the company, at once, to purchase a sufficient quantity of iron and ample equipments to finish and put the road in complete and successful operation from Dalton to the Tennessee river, the State loan by itself being insufficient in amount to effect those objects.

In the latter part of July a contract was closed with Messrs. Bailey, Brothers & Co., of England,

for eight thousand tons of rails of the T pattern, of best quality of railroad iron, to weigh 57 lbs. per lineal yard, to be delivered at Charleston or Savannah at the option of our company; four thousand tons to be shipped before the first of the present month, and as much earlier as practicable; and the remaining four thousand tons before the first of June next, and as much earlier as practicable. On delivery at Savannah, which port we have selected, we are to pay \$22 75 cents, in cash, \$4 in stock of the company, and \$6 in the company's bonds at thirty years, 6 per cent interest to be paid half yearly in the city of New York; making \$32 75 cents per ton of 2,000 lbs.—added to which we have to pay the tariff duty of about \$6 14 cts. per ton, and making the aggregate cost at Savannah \$38 89 cents per ton as aforesaid.

This contract, under all the circumstances with which the company was surrounded at the time it was made, is exceedingly favorable to the company, and secures the completion of the road to the Tennessee river, at an early day, beyond a doubt.

Owing to several unavoidable occurrences, such as stress of weather at sea, &c., the first cargoes did not reach this country as soon as they were to have arrived. Three cargoes have, however, now arrived and two others, the sailing of which we have accounts, are daily looked for—all together making over three thousand tons, or the greater part of the quantity required to finish the road to the Hiwassee river. The rails are now being delivered at our southern terminus daily, and those that have come to hand are considered by competent judges to be of the very best quality in pattern, material and workmanship.

Four first class locomotives are contracted for—two of them to be made at the Globe Locomotive Works, South Boston, and two by Messrs. Norris Brothers, Philadelphia. We are informed that they are all in a state of forwardness, and two of them now nearly or quite completed. Those from Boston will be delivered at Savannah in a short time, and the two at Philadelphia will be ready for delivery by the middle of March or first of April. We have every assurance, and are confident that all these machines will be of the very best description in material and workmanship. The cost of two of them, at the works is \$7,000 each, and the other two \$7,500 each.

Two first class passenger cars are engaged at Boston at 2,000 dollars each, with all the best improvements on the truck, boxes, &c.

Arrangements are now being made to procure from the workshops in Augusta, a limited number of baggage and freight cars, which will be needed in a very short time, and in fact a few are needed now.

We have purchased of Messrs. Smith and Tyson, of Baltimore, on favorable terms, wrought iron chairs and spikes for the first forty miles of the road, to be delivered and paid for at Savannah as needed. A part of them are already received, and are of the very best quality.

A contract has been made with the Georgia railroad and banking company for the transportation of our iron, &c., from Savannah to Dalton, at \$8 75 per ton of 2,240 lbs.—to cover all charges—one dollar and fifty cents per ton of which is to be paid in stock of our company, and the balance in cash.

All the foregoing contracts are considered favorable ones for the company. They are filed in the office, and will be submitted to the inspection of the stockholders present, if desired and called for.

The grading and masonry on the first section to the Hiwassee river is completed, with the exception of a shallow cut near the State-line which is not quite finished. The timbers are prepared for the entire section, and about twelve miles of mud sills and cross ties are laid down ready to receive the iron rails. Six gangs of laborers are engaged at different points, rapidly putting down the timber. An efficient force is also engaged in laying down, adjusting and spiking the iron rails. About two miles are laid and ready for the cars. We can now calculate with a great degree of certainty, that if the winter and spring prove ordinarily favorable for prosecuting the work, and the iron can be delivered as fast as it can be laid down, that the road will be finished to the Hiwassee river by the first of June, and possibly a month sooner.

It is our duty to state that the contractors, Messrs. Grant & Co., are pushing forward the work with energy, and are finishing it off in an excellent and satisfactory manner. Had it not been for the unexpected delay in the receipt of the iron, and other unavoidable obstacles hindering the progress of the work, they would, by this time, have had their contract nearly completed.

The completion of the road to the Hiwassee river being now provided for, and rendered certain at an early day, the iron and equipments being provided not only for the first section, but also for the extension of the road to the Tennessee river, the directors have not forgotten, or omitted to discuss the necessity and expediency of putting under contract the work for the completion of the road between the two rivers.

When adequate means are secured for this purpose, we will then look to the extension to Knoxville with increased interest and confidence. The completion of the two first sections will render the accomplishment of the third comparatively easy. We will then, in addition to the income of the road and the bettered condition of the county, have ample resources in credit and friends.

To secure the completion of the road to the Tennessee river, and its consequent blessing, we now only need, to be raised, by a subscription and payment of stock, or in some other way, about \$50,000, a part of which is already subscribed. With that sum in cash, in addition to the present means of the company, we can finish and equip that portion of the road, and liquidate the remaining balance of the debt of the old company, amounting to a little over \$30,000.

The prospects our company are brightening in many respects. Its condition is growing better daily, and must now improve rapidly with care and prudence in the management of its affairs. Its indebtedness at present is inconsiderable, aside from the State loan, which will not be burdensome. The old debts can be paid within the present year with proper management, without retarding the prosecution of the work. But few, if indeed any, stock companies in the union, with the same amount of work done, and materials and equipments furnished, can make a better showing than ours.

Our road completed on the plan adopted and with the iron purchased, will be one of the best in the union. In firmness of road bed, easy grade, straightness of line, excellence of superstructure, size, pattern and quality of iron rail, it will compare favorably with the best. The motive power and other equipments will be of the best class. It will cost the present stockholders, including the State completed to the Tennessee river, a little over 80 miles, with ample equipments for doing business, about the sum of \$1,270,000; or a little over \$15,875 per mile, but little over one-half of the average cost per mile of good roads in the United States. But suppose we put down \$1,300,000 as the aggregate cost which will be more than sufficient to cover all contingencies. Six per cent on that sum will be \$78,000. Every well informed man at all acquainted with the history of railroads, and with the position and prospects of ours, will be satisfied that our road will pay that sum after deducting all the expenses of working, repairs, &c. Indeed we will be disappointed in our calculations if it does not pay 10 per cent the third year after its completion to the Tennessee. The stockholders need not desire a better property than it will be. They could not obtain a better in any railroad in the union, for our road will occupy a favorable position as a part of that great line of railway, connecting the north and northeast of our extended country with the south and southwest, the main trunk extending through East Tennessee and Western Virginia, and at each end reaching out its branches in every direction. This main trunk can never have any competitor or rival in any parallel road, and must draw to it all the extensive commerce, supplying the wants and subserving the interests of one million of people, and the teeming travel flowing in from each and from a great distance on either side.

The company are indebted to the Engineer-in-Chief for his energy and perseverance in their service, and especially for his exertions in negotiating some of the contracts hereinbefore mentioned.

ENGINEERS.

Atkinson, T. C.,

Alexandria and Orange Railroad, Alexandria, Va.

Clement, Wm. H.,

Little Miami Railroad, Cincinnati, Ohio.

Cozzens, W. H.,

Engineer and Surveyor, St. Louis, Mo.

Alfred W. Craven,

Chief Engineer Croton Aqueduct, New York.

Floyd-Jones, Charles,

Alton and Sangamon Railroad, Alton, Illinois.

Gzowski, Mr.,

St. Lawrence & Atlantic Railroad, Montreal, Canada.

Grant, James H.,

Nashville and Chattanooga R. R., Nashville, Tenn.

S. W. Hill,

Mining Engineer and Surveyor, Eagle River, Lake Superior.

Holcomb, F. P.

Southwestern Railroad, Macon, Ga.

Latrobe, B. H.,

Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,

Buffalo and Conhocton Valley Railroad, Bath, N. Y.

Morris, Elwood,

Schuylkill Navigation, Schuylkill Haven, Pa.

Nott, Samuel,

Lawrence and Manchester Railroad, Boston.

Prichard, M. B.,

East Tennessee and Georgia R. R., Cleveland, Tenn.

W. Milnor Roberts,

Bellefontaine and Indiana Railroad, Marion, Ohio.

Roberts, Solomon W.,

Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Sanford, C. O.,

South Side Railroad, Virginia.

Steele, J. Dutton,

Pottstown, Pa.

Trautwine, John C.,

Panama Railroad—Address through office of Panama Railroad Co., 78 Broadway, N. Y.

Tinkham, A. W.,

United States Fort, Bucksport, Me.

Troost, Lewis,

Alabama and Tennessee Railroad, Selma, Ala.

Whipple, S.,

Civil Engineer and Bridge Builder, Utica, N. Y.

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218 PEARL ST., NEW YORK.**Charles T. Jackson, M. D.,**

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CIVIL AND MINING ENGINEER AND ATTORNEY for Patents. Office and Laboratory, F St., opposite the Patent office, Washington, D. C.

Dudley B. Fuller & Co.,IRON COMMISSION MERCHANTS,
No. 139 GREENWICH STREET,
NEW YORK.**Manning & Lee,**GENERAL COMMISSION MERCHANTS,
NO. 51 EXCHANGE PLACE,
BALTIMORE.

Agents for Avalon Railroad Iron and Nail Works. Maryland Mining Company's Cumberland Coal 'CED'—'Potomac' and other good brands of Pig Iron.

Samuel Kimber & Co.,COMMISSION MERCHANTS
WILLOW ST. WHARVES, PHILADELPHIA.

AGENTS for the sale of Charcoal and Anthracite Pig Iron, Hammered Railroad Car and Locomotive Axles, Force Pumps of the most approved construction for Railroad Water Stations and Hydraulic Rams, etc., etc.

July, 27, 1849.

James Herron, Civil Engineer,OF THE UNITED STATES NAVY YARD,
PENSACOLA, FLORIDA,

PATENTEE OF THE

HERRON RAILWAY TRACK.
Models of this Track, on the most improved plane, may be seen at the Engineer's office of the New York and Erie Railroad.

PLUSHES

FOR

Railway Cars & Omnibuses.**F. S. & S. A. MARTINE,**

112 WILLIAM ST., NEAR JOHN.

ARE now receiving a large and complete assortment of Plain and Figured PLUSHES, of their own importation, which will be sold at the lowest market price, viz: Crimson, Maroon, Scarlet, Green, Blue, Purple, etc.

ALSO—CURLED HAIR, the best manufactured in market.

To Railroad Companies, Machinists, Car Manufacturers, etc., etc.**CHARLES T. GILBERT,**

NO. 80 BROAD ST., NEW YORK,

IS prepared to contract for furnishing at manufacturer's prices—
Railroad iron,

Locomotive Engines,
Passenger and Freight Cars,
Car Wheels and Axles,
Chairs and Spikes.

Orders are invited; and all inquiries in relation to any of the above articles will receive immediate attention.

Manufacture of Patent Wire ROPE AND CABLES,

For Inclined Planes, Suspension Bridges, Standing Rigging, Mines, Cranes, Derrick, Tilters, &c., by
JOHN A. ROEBLING, Civil Engineer,
TRENTON, N. J.

FORGING.**Ranstead, Dearborn & Co.,**

MANUFACTURERS OF

LOCOMOTIVE CRANKS AND CAR AXLES,

ALSO

WROUGHT IRON SHAFTING,

And All Kinds of Hammered Shapes.

Office 25 Foster's Wharf, Boston.

Samuel D. Willmott,MERCHANT, AND MANUFACTURER OF
CAST STEEL WARRANTED SAWS,
—AND FILES—

IMPORTER OF THE
GENUINE WICKESRLY GRINDSTONES
NO. 8 LIBERTY STREET,
NEW YORK.

Railroad Instruments.

THEODOLITES, TRANSIT COMPASSES, and Levels, with Fraunhoffers Munich Glasses, Surveyor's Compasses, Chains, Drawing Instruments, Barometers, etc., all of the best quality and workmanship, for sale at unusually low prices, by
E. & G. W. BLUNT,

No. 179 Water St., cor. Burling Slip.
New York, May 19, 1849.**IRON.****Iron.**

Pig Iron, Anthracite and Charcoal; Boiler and Flue Iron, Spring and Blistered Steel, Nail Rods, Best Refined Bar Iron, Railroad Iron, Car Axles, Nails, Stove Castings, Cast Iron Pipes of all sizes, Railway Chairs of approved patterns for sale by
COLEMAN, KELTON & CAMPBELL,
109 N. Water St., Philadelphia.

Stickney & Beatty,

DEALERS IN IRON AND IRON MANUFACTURERS.

AGENTS for the Balt. City Rolling Mill, from which establishment they are prepared to furnish Ellicott's round, square, and flat bar iron, puddled and charcoal boiler plates and billet iron—also agents for the sale of the Laurel, Gunpowder, and Locust Grove (Balt.) forge pig irons, Locust Grove and Laurel Irons for car wheels, Caledonian boiler blooms made from cold blast iron, Old Colony and anti-Eatam nails, Wm. Jessop & Son's steel, Coleman's blister steel and nail rods, sheet, hoop, band, oval and common English iron.

Nos. 18 and 20 South Charles st., Baltimore.

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. J. F. WINSLOW, President

Troy, N. Y.

ERASTUS CORNING, Albany

WARREN DELANO, Jr., N. Y.

JOHN M. FORBES, Boston.

ENOCH PRATT, Baltimore, Md

November 6, 1848.

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phoenix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehanna river; which two establishments are now turning out upwards of 1800 tons of finished rails per month.

Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.

REEVES, BUCK & CO.

45 North Water St. Philadelphia.

March 15, 1849.

LAP—WELDED WROUGHT IRON TUBES

FOR

TUBULAR BOILERS,

FROM ONE AND A QUARTER TO SEVEN INCHES IN DIAMETER.

THE ONLY Tubes of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER & SON, Patentees,
28 Platt street, New York.

Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron.

THOMAS B. SANDS & CO.,

73 New street,
New York.

February 3, 1849.

Iron Store.

THE Subscribers, having the selling agency of the following named Rolling Mills, viz: Norristown, Rough and Ready, Kensington, Triadelphia, Pottsgrove and Thorndale, can supply Railroad Companies, Merchants and others, at the wholesale mill prices for bars of all sizes, sheets cut to order as large as 58 in. diameter; Railroad Iron, domestic and foreign; Locomotive tire welded to given size; Chairs and Spikes; Iron for shafting, locomotive and general machinery purposes; Cast, Shear, Blister and Spring Steel; Boiler rivets; Copper; Pig iron, etc., etc.

MORRIS, JONES & CO.,

Iron Merchants,

Schuylkill 7th and Market Sts., Philadelphia.
August 16, 1849. ly33**Glendon Refined Iron.**

Round Iron, Band Iron, Hoop Iron,
Square " Flat " Scroll "

Axles, Locomotive Tyres,
Manufactured at the Glendon Mills, East Boston, for sale by
GEORGE GARDNER & CO.,
5 Liberty Square, Boston, Mass.

Sept. 15, 1849.

3m37

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for rail roads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.

JOHN F. WINSLOW, Agent.

Albany Iron and Nail Works, Troy, N. Y.

The above Spikes may be had at factory prices, of Erastus Corning & Co Albany; Merritt & Co., New York; E. Pratt & Brother, Baltimore, Md.

RAYMOND & FULLERTON, 45 Cliff st.
Bowling Iron. Stamped B.O.
 Railway Tire Bars | Rivet Iron
 Locomotive and other Axles | Locomotive Frame do
 Boiler Plates | Bars,
 and every other description of this superior Iron.

The subscribers, agents for the sale of Bowling Iron, are prepared to execute orders for importation, especially for railway and machinery uses, with despatch from the manufacturers.

RAYMOND & FULLERTON, 45 Cliff st.

Ibbotson, Brothers & Co's
CELEBRATED CAST STEEL

AND
 Best Cast Steel Royal Improved Files, well known as better adapted for Engineers' and Machinists' purposes than any now in use in the United States.

Every description of Square, Octagon, Flat and Round Cast Steel, Sheet, Shovel and Railway Spring Steel, etc., and Steel to order for any purposes—manufactured at their works in Sheffield—and universally known by the old stamp "Globe."

HENRY I. IBBOTSON, Agent.,
 218 Pearl st., New York.

Railroad Iron.
SPIKES.

Wrought Iron CHAIRS, New Pattern.

THE Undersigned continues to contract, as usual, for the above articles. The reputation already acquired for their excellent quality is a guarantee that strict attention shall continue to be paid to the wants and interests of purchasers.

CHARLES ILLIUS,
 20 Beaver St., New York.

WILLIAM JESSOP & SONS'
CELEBRATED CAST-STEEL.

The subscribers have on hand, and are constantly receiving from their manufactory,

PARK WORKS, SHEFFIELD,
 Double Refined Cast Steel—square, flat and octagon. Best warranted Cast Steel—square, flat and octagon. Best double and single Shear Steel—warranted. Machinery Steel—round.

Best and 2d gy. Sheet Steel—for saws and other purposes.

German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.

Genuine "Sykes" L Blister Steel.

Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by

WM. JESSOP & SONS,
 91 John street, New York.

Also by their Agents—

Curtis & Hand, 47 Commerce street, Philadelphia.

Alex'r Fullerton & Co., 119 Milk street, Boston.

Stickney & Beatty, South Charles street, Baltimore.
 May 6, 1848.

Railroad Iron.

B. O. Railway Tires, | Railway Wheels,
 Scotch Pig Iron, | Tin Plates and Banca Tin,
 Muntz's Patent Metal Sheathing,
 Baltimore Copper.

Contracts for Rails made on behalf of the manufacturers, for delivery at any ports in the United States, at fixed prices.

Bowling Tires and Tire Bars and Scotch Pigs imported to order.

Muntz's Ship-sheathing, and a general stock of Tin Plates and Banca Tin in store, and for sale by

IRONDALE PIG METAL, MANUFACTURED
 and for sale by the Bloomsburg Railroad Iron Co.
 LINDLEY FISHER, Treasurer.
 75 N. Water St., Philadelphia.

Faggotted Car and Engine
Axles

FORGED by RANSTEAD, DEARBORN & Co.,
 Boston, Mass.

These Axles enjoy the highest reputation for excellence, and are all warranted.

Railroad Iron.

3,000 TONS C. L. MAKE 63½ lbs. per yard,
 now landing and to arrive.

Also contracts made for future delivery of above superior make English Iron.

300 Tons Banks Best Iron, Round, Square and Flat.
 200 " English Bar " " " " "

10 " 9-16 Square Iron for Railroad Spikes.

For sale in lots to suit purchasers by

DAVID W. WETMORE.

New York, March 26, 1850.

3m

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

JOHNSON, CAMMELL & Co's
Celebrated Cast Steel,

AND
 ENGINEERING AND MACHINE FILES,
 which for quality and adaptation to mechanical uses, have been proved superior to any in the United States. Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cyclops Steel Works Sheffield.

JOHNSON, CAMMELL & CO.,

100 William St., New York.

November 23 1849.

Bowling Tire Bars.

40 Best Flange Bars 5½x2 inches, 11 feet long.
 40 " " 5½x2 " 7 feet 8 in. long.
 40 " Flat " 6x2 " 11 feet long.
 40 " " 6x2 " 7 feet 8 in. long.

Now in store and for sale by

RAYMOND & FULLERTON,
 45 Cliff street.

Wheel, Forge and Foundry
Iron.

LOCUST GROVE Wheel Iron of great strength
 and superior chilling property.

Balt. Charcoal Forge Iron, from Patuxent, Curtis Creek and Gunpowder furnaces.

Elkridge Foundry Iron, of superior strength and softness. Anthracite and Charcoal Iron from Pennsylvania and Virginia. Gas and Water Pipes, Lamp Posts from Elkridge furnace.

LEMMON & GLENN,
 62 Buchanan's Wharf, Baltimore.

S. S. Keyser & Co.,
IRON WAREHOUSE,

Corner of South and Pratt Streets,
 BALTIMORE, MD.

Selling Agents for the Rough and Ready Bar Iron and Elk Boiler and Flue Iron Rolling Mills, Sarah and Taylor Furnaces, and Wrightsville Hollow Ware Foundry, and Dealers in Bar and Sheet Iron, and Cast, Sheer, German, Blister, Spring and Electrodes Steel, etc., etc.

Smith & Tyson,

GENERAL COMMISSION MERCHANTS,
 No. 25 South Charles St., Baltimore, Md.

AGENTS for the Celebrated Columbia Pig Iron, suitable for Car Wheels and Chilled Rolls.

Columbia refined Charcoal Blooms; Refined Charcoal Juniata Billet Iron for Wire; Refined Iron for Bridging, of great strength; Cut Nails, Spikes, and Brads; Railroad Spikes and Wrought Chairs. 22tf

Tredegar Iron Works.

ROLLING MILL FOUNDRY AND MACHINE
SHOPS. The undersigned continues to manufacture at his Works in this city (from best charcoal metal) Bar Iron of every description, embracing—

Rounds and Squares, from ½ to 5 inches diameter. Flats, from ½ to 7 inches, all thicknesses. Bands and Scrolls, all sizes. Boiler plate and Plough Iron. Railroad and Locomotive Axles and Tires. Locomotive Frames, Spikes and Plates. Hoops, Ovals, Half Ovals, Half Rounds, Angle, T, L, and indeed every description of Iron usually manufactured, all of which he warrants to be equal to any made in this country.

He also manufactures at his Foundry and Machine Shops all descriptions of Railroad Work, say, Locomotives, Railroad Wheels and Axles complete and ready for the road, Railroad Chairs, etc. Also, Marine and Stationary Engines all sizes, Sugar mills and Engines, Horse mills, and every kind of Machinery usually required for the operations of the country.

He has paid particular attention to getting up machinery, etc., for Gold Mine operations, and those in want of such work might find it to their advantage to give him a call.

J. R. ANDERSON.

Richmond, Va., Sept. 10, 1850.

CUT NAILS OF BEST QUALITY, BAR IRON

(including Flat Raile) manufactured and for sale by

FISHER, MORGAN & CO.,

75 N. Water St., Philadelphia.

Car Wheel Iron.

100 Tons "Columbia" No. 2 Cold Blast Charcoal Iron.

300 Tons "Salisbury" No. 1, do. do.
 For sale by CHARLES T. GILBERT,
 No. 80 Broad st.

New York, Sept. 21, 1850.

Railroad Spikes.

THE subscribers are prepared to make and execute contracts for Railroad Spikes of a superior quality, manufactured by the New Jersey Iron Company, at Boonton.

DUDLEY B. FULLER & CO.
 139 Greenwich st. corner of Cedar.

Railroad Iron.

1650 Tons, weighing about 61 lbs. per yard, 40 tons, weighing about 52 lbs. per yard, and 825 tons, weighing about 53½ lbs. per yard, of the latest and most approved patterns of T rail, for sale by

BOORMAN, JOHNSTON & CO.,
 119 Greenwich street.

New York, Aug. 26, 1850.

N.B.—B. J. & Co are also prepared to take contracts for English rails, delivered in any of the Atlantic ports of the United States.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract to deliver Rails of superior quality, and of any size or pattern, to any ports of discharge in the United States.

COLLINS, VOSE & CO.,
 74 South St.

New York, June 1, 1850.

Spikes, Spikes, Spikes.

ANY person wishing a simple and effective Spiking Machine, or a number of them, may be supplied by addressing

J. W. FLACK,
 Troy, N. Y.

March 6, 1850.

Railroad Iron.

2000 Tons, weighing 58 pounds per lineal yard, of the most approved pattern of T rails, in store and to arrive, for sale by

COLLINS, VOSE & CO.,
 74 South St.

New York, June 1, 1850.

Railroad Spikes, Boiler Rivets, etc.

THE Subscribers, Agents for the sale of James S. Spencer's, Jr., Railroad and Boat Spikes, Boiler Rivets, and Wrought Iron Chairs for Railroads, made at his Works near this city, will execute all orders with promptness, despatch, and of the best quality.

ALSO IMPORTERS of English refined and Merchant bar Iron; Extra refined Car and Locomotive Axles (from 3½ to 6½ inches in diameter); B. O. Locomotive Tire (welded by Baldwin). Also, supply Boiler and Flue Iron cut to pattern or otherwise.—Spring, Shear, and Cast Steel, etc., etc., etc.

T. & E. GEORGE.

Philadelphia, November 14, 1850.

Railroad Iron.

THE UNDERSIGNED, HAVING made arrangements abroad, are prepared to contract for the delivery of Foreign rails, of approved brands upon the most favorable terms.

They will also make contracts for American rails, made at their Trenton works, from Andover Iron, in whole or in part, as may be agreed upon.

They are prepared to furnish Telegraph, Spring and Market Wire; Braziers and Wire Rods; Rivets and Merchant Bars to order, all made exclusively from Andover Iron. The attention of parties who require iron of the very best quality for special purposes, is respectfully invited.

COOPER & HEWITT,
 17 Burling Slip, New York.

February 15, 1850.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract for the delivery of English, Welsh and Scotch Rails, of any pattern and weight, also for every description of English, Welsh, Scotch, and Swedish Iron, Railway Chairs and Spikes, Rivets, Bolts, Nuts, Washers, Chain Cables, Anchors, Tin Plates, German Spelter, Iron Castings, and every description of Machinery.

WILLIAM BIRD & CO.,
 Iron and Tin Plate Merchants,
 44 Wall st., New York.

And at 5 Martin's Lane, City, London,
 and 140 Buchanan st. Glasgow.

July 27th, 1850.

Railway Iron.

THE Subscribers will contract to deliver, in the course of the ensuing Spring and Summer, the best English Rails, made by a particular specification, and of any pattern required.

DAVIS, BROOKS & CO.,

68 Broad st.

On hand for sale, English rails of 58 lbs. to the yard, made by particular specifications.

January 10, 1851.

To Iron Masters.

WANTED—A Person to take charge of a Blast Furnace for Smelting Iron, for further information apply to

COLLINS, VOSE & CO.,

74 South street.

Railroad Iron for Sale.

THE Mansfield and Sandusky City Railroad Co. have on hand from twelve to fifteen hundred tons of American Flat Bar Railroad Iron, weighing 38 lbs. to the lineal yard, which they offer for sale at reasonable rates.

The iron has been in use about four years, and is sound and in good condition. It is 2½ by 1.

It will be ready for delivery at short intervals between the opening of navigation in the spring and the 1st September next.

For further particulars inquire at the office of the company at Sandusky City, Ohio.

C. G. FORBES, President.

December 24, 1850.

Railroad Iron.

THE "Montour Iron Company" is prepared to execute orders for Rails of the usual patterns and weights, and of any required length not exceeding 30 feet per rail. Apply at the office of the Company,

No. 73 South 4th st., Philadelphia,

Or to the Agents,

CHOUTEAU, MERLE & SANFORD,

No. 51 New st., New York.

September, 1850.

American Railroad Iron.

1000 Tons, weighing 50 lbs. per yard, manufactured by Reeves, Abbott & Co., at the Safe Harbor Iron Works, and now lying in yard at Brooklyn, for sale by

CHOUTEAU, MERLE & SANFORD,

No. 51 New street.

Tubes, Tubes, Tubes.

THE undersigned have received special permission from, and are in direct communication with, the Birmingham Patent Lap Welded Iron Tube Company, for the sale of their very excellent and superior Boiler and Gas Tubes in large or small quantities.—These Tubes are sold very extensively in England and on the continent of Europe are sold exclusively by

WM. BIRD & CO.,

Iron and Tinplate Merchants,

44 Wall st., New York

5 Martin's Lane, City, London, and 140 Buchanan st., Glasgow.

Wanted.

WANTED—A Situation in a Civil Engineer's office, by a Young Gentleman from Scotland—has had six years' experience as a practical Draughtsman, Architect, Surveyor, and Leveller in one of the principal civil engineering establishments in Scotland. First rate reference given. Apply to Messrs. Cooper & Hewitt, 17 Burlington Slip, or to

JAS. SNEDDON,

23 Harrison st.

Wanted.

A Second-hand Locomotive of 10 to 15 tons weight. A note, giving lowest terms, addressed to A. B., Railroad Journal Office, will receive attention.

January 9, 1850.

Wanted.

A Second-hand Locomotive, weighing from 10 to 15 tons. A note, addressed A. B., at "Railroad Journal" office, will receive attention, if sent soon.

January 21, 1851.

For Sale.

TWO Locomotive Engines—10½ tons weight, built by Baldwin. Also Four Eight-wheeled Passenger Cars, with side seats, all in good running order. Apply to

WM. E. MORRIS,

Office of Philad., Germantown & Norristown Railroad Co., 9th and Green sts., Philadelphia.

3m5

Great Work on Bridge Building, etc., etc.

JUST published in medium folio, One Dollar, 75 cts. to subscribers.

Part IV of a "THEORETICAL AND PRACTICAL TREATISE ON THE CONSTRUCTION OF BRIDGES IN STONE, IRON AND WOOD," including the Equilibrium of Arches, the mathematical principles of the Oblique Arch, Suspension Arch, etc., Construction of Foundations in Water, Centering, Oblique Arches, etc., the application of Iron to Railroad Structures, Practical Tunnelling, Suspension Bridges, etc.; illustrated by numerous accurately executed Plans, Elevations, Sections and Details of Stone, Iron and Wood Bridges, Viaducts, Tunnels, Culverts, Machines, etc., constructed by the most eminent Architects and Engineers in Europe and the United States, and numerous Original Designs for Bridges, Viaducts, Culverts, etc. The whole calculated to meet the exigencies of Engineers, and assist Draughtsmen, Bridge Builders, Mechanics and Students. By George Duggan, Architect and Civil Engineer.

The present part contains beautifully executed plans, elevations, sections, and details of the Iron Lattice Bridge 140 feet span over the canal in the suburbs of Dublin on the line of the Dublin and Drogheda R.R., Plans, elevations and sections of the Timber Bridge over the Schuylkill, at Market st., Philadelphia, with Arches 160 and 190 feet span. Plans, elevations and sections of a Timber Bridge with Arches 155 and 200 feet span over the Delaware. Also, plans, elevations, sections and details of Lattice and Frame Wood Bridges, explanatory of Nathaniel Towns and Colonel S. H. Long's methods of constructing Bridges of Wood, with the continuation of the Articles on Cofferdams, Concrete, Limes, Mortars, Cements, etc.

Published by George Duggan, 300 Broadway, New York, to whom all communications should be addressed and subscriptions forwarded.

Parties remitting Mr. Duggan \$5. and the remainder \$4 when they have been supplied with the first six parts of the "Theoretical and Practical Treatise on Bridge Building, etc.," shall receive it monthly as published. To those making Mr. Duggan a present remittance of \$9, the work will be forwarded post free to any part of the United States.

Great American Engineering AND MECHANICAL WORK,

just published in medium folio One Dollar, 75 cts. to Subscribers.

Part X. of "Specimens of the Stone, Iron & Wood Bridges Viaducts, Tunnels, Culverts, &c., &c., of the United States Railroads." By George Duggan, Architect and Civil Engineer.

The present part contains beautifully executed plans, elevations, and sections of the Timber Bridge with Arches 136 feet span, over the Mohawk river, on the line of the Utica and Schenectady R.R. Plans elevations, sections and isometrical views of Timber Piers 100 feet high, a Timber Bridge of 55 feet span, and Ice Breakers, on the line of the Little Schuylkill and Susquehanna R.R.

Also plans, elevations, sections, isometrical views and details of an Iron Bridge 356 feet long, with Arches 81 feet span, erected by the N. York Iron Bridge Co. over Moores Creek, on the line of the Virginia Central R.R., and plans, elevations and sections of an Iron Plank Road Bridge 160 feet span, erected over Buffalo creek by the same company, with a description of Col. Long's method of constructing Bridges in Iron, and an explanation of the causes that led to the failure of the Iron Bridge 60 feet span, near Lackawaxen, on the line of the New York and Erie R. R., at midday, on the 31st July last, by which several lives were lost, and a great amount of property destroyed.

Published by GEORGE DUGGAN,

300 Broadway, New York.

To whom all communications should be addressed and subscriptions forwarded.

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,

No. 24 Commercial St. Boston.

August, 16, 1849.

6m33

Gas Fixtures.

FIXTURES for Burning Gas for Lighting Public Buildings, Private Dwellings, Stores and Factories, manufactured by the subscriber in great variety. Orders by Mail, or left at the Factory on Causeway street, will be promptly attended to.

HENRY N. HOOPER & CO.
Boston, March 23, 1850.

6m13

TO RAILROAD COMPANIES, CAR MANUFACTURERS, etc.

THE Undersigned hereby gives public notice, that the Commissioner of Patents, pursuant to his decision in relation thereto, on the 8th day of October, 1850, issued to him a Patent for the sole right to manufacture, and exclusive use of the INDIA RUBBER CAR SPRING, on account of priority of invention of said Spring.

F. M. RAY

New York, Oct. 23, 1850.

Iron Trade of Pennsylvania.

DOCUMENTS and Statistics relating to the Manufacture of Iron in the State of Pennsylvania—giving a history of the manufacture from its commencement to this date, illustrated by diagrams. Also tables giving the address and capacity of every establishment in the State. Prepared by direction of the late convention of the trade held in Philadelphia.

For sale by

LINDSAY & BLACKISTON, Philadelphia.

FINDLING LUCUS, Jr., Baltimore.

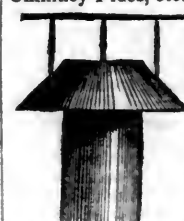
HENRY G. NICHOLS, 79 Water st., N. Y.

or at this office—price \$1 00.

It will be sent by mail to any order enclosing the money, and post paid.

Emerson's Patent Ventilator,

ADAPTED to Cars, Engine houses, Public Halls, Factories, Churches, School Houses, Dwellings, Chimney Flues, etc.



This Ventilator is stationary, and cannot get out of order. It is constructed in such conformity to certain ascertained laws of pneumatics, as to insure a constant draft outward, whatever may be the changing direction of the wind. The Massachusetts Mechanic Association have awarded a gold medal to the Inventor, and the Manufacturers have already disposed of over

3,000 of the article. Manufactured and sold by

CHILSON, ALLEN, WALKER & Co.,

351 Broadway, New York.

Providence Tool Co.,

MANUFACTURERS OF

Plane Irons, Tooth Irons, Soft Moulding and Rubber Irons, Cornice Irons, Plow Bits, and Planing Machine Knives:

NUTS, WASHERS AND BOLTS.

—ALSO—

PLATE HINGES AND PICK AXES.

They are prepared to execute orders for all descriptions of Cold Punching and Job Work.

WM. FIELD, Agent. REFUS WATERMAN, Treas. PROVIDENCE, R. I.

Lovegrove's Patent Cast Iron Water and Gas Pipes.

THE Subscriber, the Inventor and Patentee of the Centrifugal mode of giving form to metallic substances while in a molten state, is preparing to make Cast Iron Water and Gas Pipes, of any dimensions, at prices much lower than they can be made in the old manner, and the pipes warranted to stand a pressure of three hundred pounds to the square inch, and to be soft enough to drill. Steam Engines and all kinds of machinery. Cast Iron Doors and Frames, and Mill Castings of every description, made to order.

THOMAS J. LOVEGROVE,

Machinist and Founder,

West Falls Avenue, below Pratt st., Baltimore.

Railroad Letting, in Virginia.

PROPOSALS will be received at the office of the chief engineer of the Richmond and Danville railroad, until 9 o'clock A. M., Monday, the 10th of March, to be decided the 13th of the same month, for doing all the grubbing, clearing, grading, ditching and masonry, on the Richmond and Danville railroad, in the counties of Amelia, Nottingham, Prince Edward, Lunenburg and Charlotte, comprehending about 45 miles of road.

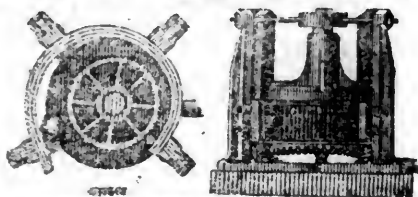
Profiles and specifications can now be seen at the office of the company in Richmond; and after the 10th of February, at the offices of the resident engineers, on the line, at Burkeville and Keysville.

By order of the board of directors,

ANDREW TALCOTT,

Chief Engineer R. & D. railroad.

Engineering department R. & D. }
R. R. Co., Richmond, Jan. 22, 1851. }

MACHINERY.**Henry Burden's Patent Revolving Shingling Machine.**

THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phoenixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll sounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y.

P. A. BURDEN.

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Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

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P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

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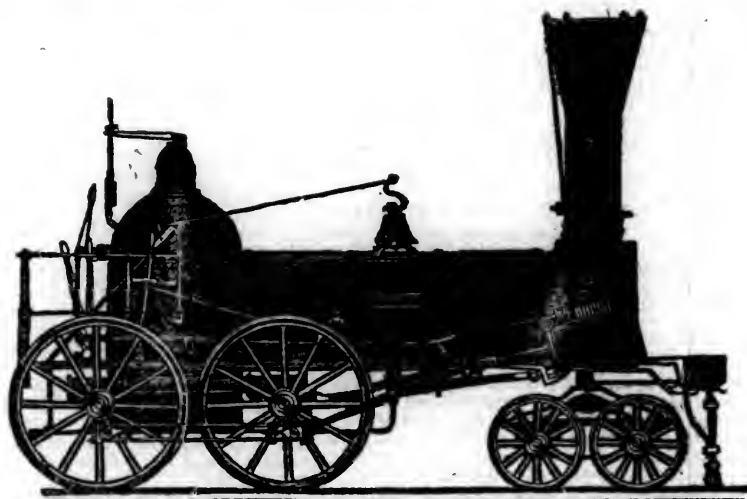
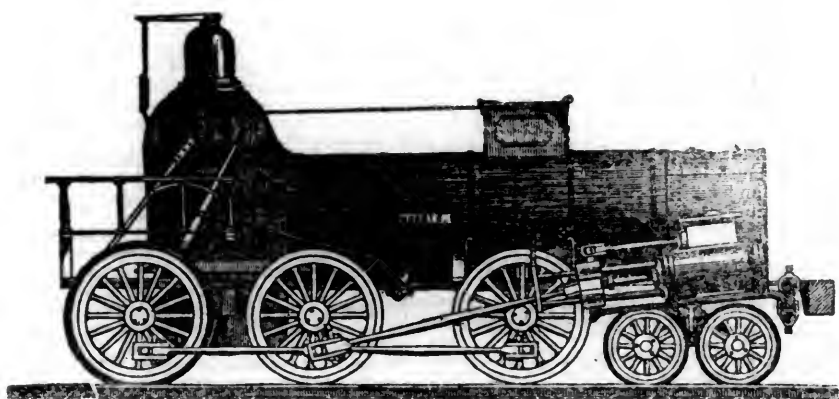
THE Subscriber, Practical Manufacturer of Scales of every description, respectfully asks the attention of Railroad Companies to his Improved Wrought Iron Railroad Track and Depot Scales which for strength, durability, accuracy, convenience in weighing, and beauty of workmanship, are not surpassed by any others in this country.

He is aware that this is rather a bold assertion for him to make, yet he can say with confidence that they have but to be tried to give them precedence over all others.

J. L. BROWN.

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November 3, 1849.

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RIDGWAYS & KIMBALL,

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THREE LOCOMOTIVES, Manufactured by M. W. Baldwin, of 10 tons weight, all in complete repair, and now running on the Columbia and Philadelphia Railroad.

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AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

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GEN. CHAS. T. JAMES, *For Manufactures and the
Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & Co., 136 NASSAU ST.

Saturday, February 15, 1851.

Accidents on Railroads.

We can hardly look into an exchange paper of late, without meeting an account of some dreadful accident on railroads. These have become so alarmingly frequent, as to create great uneasiness on the part of travellers for their own safety, and is a source of great expense to companies, not only in *repairs*, but in the still greater one, of paying for mangled limbs, and for life destroyed. Certainly something should be done to prevent this crying evil.

A few days since a train of cars tumbled down a high bank on the Erie railroad into the Delaware river. Within a day or two, a most serious accident occurred on the Housatonic railroad. The cars were precipitated down a high bank of some 30 or 40 feet, and a large number of passengers very seriously injured.

It generally turns out that “no one is to blame” in these accidents. They are attributable to some cause that no person could have foreseen, or to some latent defect, which only shows itself after the disaster occurs. As far as immediate responsibility on the part of persons employed is concerned, this may be true. Take the case of the late accident on the Erie railroad. This was caused by the breaking of a rail, owing to the poor quality of its iron, for no good rail will break short off, without showing indications of this before hand. The accident probably occurred at a curve of the road, and the fitting the rail to this, very likely was the primary cause of the fracture. At any rate a bad rail was used. The whole lot, of which this was a part, might have been bad, or this might have been an exception. If so, the exception may again happen at some other dangerous points, and the unlucky traveller may again be pitched down a precipice, at the imminent risk of life and limb.

The great question is, how shall these accidents be prevented? Is there any difficulty in this? for if so, our railroads will begin to be looked upon as very dangerous modes of travelling. There can be no question but these accidents may be placed almost beyond the bound of possibility, by proper care, and by the use of suitable material, both in the rail and the rolling stock.

It is notorious that at the present low price of rails, a great many of our roads are laid with a very poor iron, entirely unsuitable for its purpose, both as regards true economy and safety. Where roads are built upon *contract*, the contractor puts down the cheapest article he can get. His connection with the road is over as soon as he can get the work accepted. Roads are thus very often put in operation, when the lives of the passengers are jeopardised every time that a train passes over them. Where the company purchase their own iron, the result is often the same. Most of them, for the want of sufficient means, or a proper idea of the importance of a liberal expenditure in the outset, or from mistaken ambition of having the reputation of building the cheapest road going, act upon the false principle of economy, of using what *cost* the least, without any regard to *quality*. Such are facts too notorious to require proofs. In the end, a succession of accidents, the legitimate result of this *kind of economy*, will force a company into the proper steps to remedy them, to relay the track, or buy new furniture, and throw away

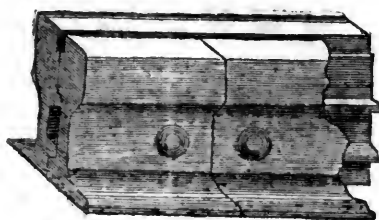
the old. The cost of a road in this way is about double, nearly one half of which might have been saved, by using the proper materials in the first instance.

How shall this evil be remedied? Shall it be left to work its own cure by a process which shall half destroy the life of the patient, or shall it become the subject of legal interposition? We think it should, though we are generally opposed to legislative interference with the operations of companies. As things are now, directors cannot be brought to a proper sense of their duties. They have not the courage frequently to act according to their convictions, to withstand the desire of having the reputation of buying *low*, to gain an eclat in the community, or some supposed advantage over other roads. Nothing is more common than the remark, “I should like to purchase a good article; I think it would be economy in the long run; but we must husband our means, and buy where we can buy cheapest. If we give a high price, we cannot build our road.” This is the argument used. The cheapest article is often bought for no other reason but its cheapness. The consequence is, that it comes to repair as soon as it is used, and the company soon finds itself compelled by the constant annoyance of accidents, and the cost of repairs, to throw away the *cheap* for the *economical*.

While as a general rule, companies should be left, in the management of their affairs, to the guidance of their own ideas of economy, or prudence, the community should, in its collective capacity, see that certain conditions, essential to personal safety, are followed in all cases. One of these conditions should be, that, on all dangerous curves, either upon an embankment, or of a short radius, an iron should be used of known and tested quality, about which there can be no mistake. If such an article had been used, the accident on the Erie railroad would have been prevented. So with iron bridges. What does the travelling public know about the safety of these structures? What do companies know about the quality of iron used? Nothing. All this is left to the contractor. His chief motive is to make all the money he can. The only inducement to the use of proper materials, is his own reputation. The same is to a certain extent true of every article in use, both upon railroads and their equipment.

There has been recently invented a new rail, which, it strikes us, is exactly adapted for safety

on curves, and should be used in all cases. We refer to the "compound rail," of which we gave some account in our paper of the 18th ult., and of which the following cut will give a good idea.—



With a rail of this form, accidents from a misplacement or break of the rail, which are now so common, would be almost impossible. This may be made a continuous rail for miles. If it is composed of good iron and properly put together, it is exactly adapted to resist the enormous centrifugal force produced by high speeds on short curves. With this, the curves can be made perfectly true. No immediate evil can happen from the loosening of a spike, the breaking of a chair, or the settling of a cross tie. In the crossing of bridges, such a rail would of itself sustain a train, even if the structure should give way. In many respects its use would be a vast saving. In principle, nothing can be more faulty than the form in common use, by which the line is made up of distinct pieces, and which require to be held in their places by chairs of great strength, and between which and the rails the concussion produced, not only destroys the rail, but for a similar reason, is the great cause of the wear and tear of machinery. The new rail is perfect in principle. It has proved to be equally so in practice, as far as it has been used. Is it not then the bounden duty of companies to turn their attention to this subject, and to adopt it, should further experience confirm the present evidence in its favor. If it is what it is believed to be, should not companies be required to use it in all places where accidents are likely to be attended with serious consequences?

Railroad Improvement.

The Richmond Enquirer contains the following detailed notice of the experiment, made on Saturday last, at Richmond, of the invention to overcome high grades on railroads. It seems to have proved completely successful, and if it can be brought into ordinary use will be of immense value:

James S. French's Experimental Railway.—Last winter the legislature appropriated \$10,000, to test the invention of Mr. French for ascending high grades on railroads. Mr. French has expended a large sum in arranging a locomotive and car for the purpose, and for laying down a railway on the opposite side of the river, a mile above Richmond. It starts from the Danville railroad, near the Spring Hill Factory, in a valley just above the "Haunted House," and runs up hills and over streams in a direction perpendicular to the river. The experiments with the railway were very interesting; tho' on account of some accident to the steam boxes of the locomotive, they were not as full as desirable.

For the ascending and descending of undulating surfaces, it seems clear to us that no better method can possibly be found, combining as it does many requisite qualifications, viz: despatch in the construction of roads, greater cheapness and certainty of travelling; as, by this method, the road is neither affected by frost, ice, or even grease itself, [for the latter has been tried.] On this railway the road as constructed by Mr. French is more than a third of a mile in length, on a grade of 200 feet to the

mile. The ends of the sills are cut off square with the string pieces; the rail, six inches wide, and three fourths of an inch thick, is placed upon the string pieces, and extends outwards two and a half inches, thus affording an under surface against which a pair of rollers [the simple principle of the whole invention] are pressed. These rollers or wheels are suspended from the engine, a little in advance of the driving wheels, and are pressed against the extended rail by a lever, by the regulation of which any amount of adhesion may be obtained. This mechanical adhesion has the advantage of being graduated to circumstances, for on running on a level but little adhesion is required, and on reaching any inclined surface it is put on in a quantity requisite for ascending, and no more.— Thus are avoided the effects of weight in a great measure; whereas, on the ordinary principle, much dead weight is put on, only to be made use of at certain points, and destroying the road on every passage over it. The engine used for the experiment is only 3½ tons, and was built by Messrs. Hogg & Delamater of New York, under the superintendence of Capt. John Erickson, a gentleman well known for his great mechanical talents. Up this grade of 200 feet, this little engine drew a passenger car filled with about 100 passengers, at a velocity of perhaps ten miles an hour. On descending, both engine and car were perfectly under control, capable of being stopped at any moment in a space of ten feet, and this while descending by steam power and the force of gravity combined.— The experiments have clearly indicated the practical use to which this invention can be applied.

Among the two hundred persons present on Saturday, there seemed to be a general gratification with the experiment. One of the great objects to be gained by this invention is that the same power may be obtained by a lighter engine and cars, and consequently less wearing out and injury to the rails. We hear that the highest grade ever surmounted by locomotives is one hundred and eighty feet in a mile, in Pennsylvania. But there, it required a locomotive of 20 tons—while, with Mr. French's invention, a locomotive of only 3½ tons [the "Climber"] overcame a grade of two hundred feet in a mile. When the experiment shall have been fully tested, and a heavy weight shall have been drawn up and down, and great power shall have been obtained by lighter engines, it will be for the State to order the adaptation of the invention to some portions of the various roads now being built, to which it is applicable. We know not what may be the effect, in time, of the heavy friction of the two small rollers, revolving 1700 times, while the driving wheels revolve only 32 times.

We are not engineers enough to venture a prediction as to the permanent usefulness of the invention. As far as it went, it succeeded perfectly on Saturday, and we heard several mountaineers declare that if the invention could succeed in overcoming the grade of the present experiment, it would be sufficient for railroads through their mountain passes. In this age of invention, we should not be surprised to see this application so improved, that, in less than a year, it will be made use of in surmounting the Blue Ridge, superseding the very expensive and snail-like tunnels through the mountains.

From the Merchant's Magazine.

Internal Improvements of the State of New York.

A SKETCH OF THE RISE, PROGRESS, AND PRESENT CONDITION OF INTERNAL IMPROVEMENTS IN THE STATE OF NEW YORK.

RATES OF TOLL ON THE NEW YORK STATE CANALS.

Continued from page 83.

The canal board, in a report written by Colonel Young, answered this resolution in February, 1830, (Leg. Doc. No. 291,) in which it was asserted that the canals, separate from auction and salt duties, "have yet done nothing towards the extinguishment of their debt." "In every point of view, therefore," says the report, "it becomes a matter of sound policy, and a dictate of justice, in reference to 'the interests of State,' to fix the tolls at such rates as will give the greatest amount of revenue. But this object cannot be accomplished by raising the tolls beyond a certain amount, and

this amount it is difficult, in many cases, to ascertain with precision before the experiment is made. The cheapness of an article increases its use; and where there are competitors in various places, in the production of any exchangeable commodity, a small impediment placed in the road to market which some of them are compelled to travel, would in some instances entirely destroy their business. The city of New York is supplied with lumber, in part, from the State of Maine, from the country bordering Lake Champlain, and from the western part of this State. The Lake Champlain lumber passes upon the Champlain canal about sixty miles, whilst the western lumber is compelled to traverse the Erie canal from 100 to 250 miles.* It is apparent, then, that if tolls should be raised much on lumber, this article from the west would be entirely excluded from competition in the New York market; and the canal fund would lose all that it now gains from this source. An increased toll on pot and pearl ashes, on beef and pork, wheat, flour, &c., might drive these articles to the Canada market, in whole or in part, and thereby diminish instead of augmenting the avails of the canal fund. It is not believed that the rates of toll on the descending articles can be advantageously increased. The articles of merchandise which now pay three cents a ton a mile, may, it is believed, be increased to three cents and five mills." And it was estimated that this would add from thirty to thirty-five thousand dollars to the amount of revenue.

The report adds:—"The canal board have, at the present session, passed an ordinance directing that the provisions of the Revised Statutes in reference to weights shall be carried into effect upon the canals. This regulation abolishes gross weights and will thereby add 12 per cent to the tolls on all articles which are estimated by weight. An addition to the revenue of seventy-five or eighty thousand dollars may be expected from this regulation."

On the 20th of March, Mr. Maynard introduced a resolution which was adopted by the Senate, calling on the Attorney-General for his opinion whether it was constitutional to impose on, and collect from, the canals referred to in the 10th section of the 7th article, any higher rates of tolls; or on salt or goods sold at auction, any greater duties than those fixed by said article of the constitution.

Judge Bronson, who was at that time Attorney General, answered this resolution on the 29th of March, (Leg. Doc. 344, 1830.) After referring to the section which pledges the canal revenues to the payment of the debt, the report says:—"The Attorney General is of opinion that this provision was not designed to limit the power of the Legislature in calling forth the resources of the State to their full extent, either by imposing and collecting increased tolls and duties, or by any other means; but that it was intended as a renewed pledge, in a form beyond the control of the Legislature, that an amount of revenue equal at the least to the sum which the tolls and duties in question would produce, should be levied and collected, and be inviolably appropriated and applied to the redemption of the debt which had been, or should thereafter be, incurred in the construction of the canals. That the framers of the constitution only designed to guard against the reduction, and not against the increase of tolls and duties, is evident from the fact, that the former was expressly provided for, while nothing was said of the latter." "But although the Legislature may increase the rates of toll upon the canals, and the duties on salt and sales at auction, it is believed that this can only be done for the purpose of augmenting the amount of revenue to be derived from those sources; otherwise such tolls and duties might be imposed as would exclude all merchandise from the canals, prevent the manufacture of salt, and put an end to sales at auction." "The boundaries then which the constitution has prescribed to the power of the Legislature are, that the rates of toll upon the canals and the duties on salt and sales at auction, as they were established in 1821, shall not in any event be reduced, while the canal debt remains; nor shall they be increased to such an amount as

* In 1830, the Oswego, which intersects the Erie canal 171 miles from Albany, and the Cayuga and Seneca, at a distance of 205 miles, were the only lateral canals then in operation.

would result in a diminution of the canal revenue." "It is a well established principle concerning trade, that increasing the cost of an article will (all other things being equal) diminish the amount of consumption, and consequently, there can be no means of ascertaining the income of revenue which will be produced by a given rate of increase in the duties imposed." "If then it be conceded that the constitution has not in terms appropriated the increased revenue that may arise from increased duties, how shall it be determined what portion of the whole revenue belongs to the canal fund, and what amount may be directed or applied to other objects? To say that the Legislature, in the absence of any certain guide to a just result, may exercise its best judgment upon the question, involves the power of indirectly directing a portion of the funds which have been pledged by the constitution to a specific object."

On the 13th of April, Mr. Pettibone, of the Assembly, from Oneida, introduced a concurrent resolution directing the canal board to suspend, until the 1st of January next, the collection of any increased tolls on the canals since the 31st of December last. This passed the Assembly by a vote of 66 to 14.

When this resolution came up for consideration in the Senate, N. S. Benton, of Herkimer, moved as an amendment, "that the canal board suspend, until January next, the collection of the five mills per ton, per mile, additional toll added by them upon freight ascending the canals from tide water;" and that on articles charged by weight the rates be so graduated as to conform to those of 1829, but not to raise the tolls on any articles on which they made a reduction at their late session, or to reduce the rates on packet boats. This amendment was concurred in by the Assembly, and the tolls were graduated accordingly.

Previous to 1827, the toll on tobacco prevented its transportation through the Erie canal to tide water. In that year the toll was reduced to the constitutional minimum; and in 1829 there came to tide water 32 tons; in 1830, 62 tons; in 1831, 222 tons; in 1832, 386 tons; in 1833, 535 tons; in 1834, 1,009; and in 1835 1,750 tons.

In 1829, the toll on copperas, which had been charged at ten mills per ton as a non-enumerated article was reduced to five mills coming towards tide water. This was done on a representation that the quantity produced on the west side of the mountains in Vermont, which had previously been carried by land to Boston, would by such reduction be transported to New York through the Champlain canal. During the first season after the reduction, 110 tons of copperas were cleared at Whitehall, and this quantity was increased from year to year, until in 1835, the quantity cleared was 693 tons.

In the same year, on a petition of the millers of Rochester, the toll on bran and ship stuffs was reduced 50 per cent, and the first season after this reduction there came to tide water 590 tons, and the next year, 3,592 tons, valued at \$86,348. In 1849, the quantity coming to tide water was 18,400 tons, valued at \$242,000.

In 1825, the toll on household furniture was fixed at one cent per ton per mile. Subsequently this rate was limited to "furniture accompanied by, and actually belonging to, families emigrating." And in 1830, or previous, the same rate of toll was extended to carts, wagons, sleighs, plows, and mechanics' tools, of emigrants. In July, 1845, these rates were reduced to six mills per ton per mile.

A majority of the canal board, adhered, perhaps, too rigidly to the original rates of toll, except in a few cases like those which have been enumerated; and there was no general reduction in the rates of toll previous to 1833. In the spring of the latter year, in anticipation of the opening of the Ohio canal from Cleveland to the Ohio river, the canal board made a general reduction in the rates of toll equal on the average to 20 per cent on all articles transported. The rate on merchandise was reduced from 14 to 12 mills per 1,000 pounds per mile, being a small fraction more than 14 per cent leaving the toll at 24 mills per mile on a ton of 2,000 pounds, equal to \$8.71 on a ton of merchandise from Albany to Buffalo. The rates on the Ohio canal were fixed in 1830, at four cents per gross ton per mile, for the first 100 miles, and three cents for ev-

ery additional mile, equal to \$10.27 on a gross ton from Cleveland to the Ohio river. It was considered necessary to make a considerable reduction in these rates in order to supply the valleys of the Ohio and Mississippi with merchandise from New York, through the Erie and Ohio canals. The State of Ohio had a direct interest in securing this trade to their canal; and a correspondence took place between the canal commissioners of the two States which resulted in a meeting between a committee of the commissioners of Ohio and the canal board of the State of New York in the summer of 1833. Judge Tappan, late United States Senator, and Alfred Kelly, for many years canal commissioner, attended on the part of the State of Ohio. At their meeting, which took place at the Comptroller's office in Albany, it was mutually agreed to make a reduction of 25 per cent on the rates of toll on merchandise on the Erie and Ohio canals, to take effect on the opening of navigation in 1834.

In September, 1833, the Comptroller, (A. C. Flagg,) addressed a circular to a number of merchants in the Western States and Territories, informing them of the reduction in the rates of toll made, and contemplated to be made, and soliciting information to enable the canal board to judge of the expediency of further reductions. This circular alluded to the joint action of Ohio and New York in regard to the reduction of 25 per cent on merchandise, and stated that the charges on the New York canal would be \$6.53 on a ton of 2,000 pounds from Albany to Buffalo, a distance of 363 miles, being less by \$3.63 than the sum charged prior to 1833. "By this reduction of more than one-third in the rates of tolls on merchandise, it is supposed that goods may be transported through this channel for a region of country much more extended than that which has heretofore received its supplies of merchandise from New York." The circular also informed them that the toll on wheat, flour, salted beef and pork, and most agricultural productions, had been reduced from \$5.08 to \$3.63 on a ton from Buffalo to Albany. Inquiries were also made in regard to their place of market, the products sent, mode and price of transportation, and where their merchandise was obtained, and cost of transportation: And "whether any of the products of their region would bear transportation to market through the Erie canal by a reduction of tolls, which now find a market in another direction, and what must the reduction be to effect the object?" Whether any canals or railroads were in progress which would affect the present channels of transportation—whether any products were sent to Montreal through the Welland canal, and the cost of transportation—and whether those who sent products to Montreal purchased goods there, and what kind?—Whether the Onondaga salt was sent to their region, and its price? The cost of transportation to and from New Orleans; the landing place on the Ohio, or Mississippi, and the number of miles of land carriage, &c.

Answers were received from eight States, and one Territory, which afforded valuable information to the canal board, in graduating the tolls on the canals. A letter from Huntsville, Alabama, says:—"If goods can be delivered in a reasonable time, say 20 or 30 days, at Portsmouth from New York, for \$2 per 100 pounds, it will secure the trade of this country when the canal is open. The cost of 100 pounds from Cincinnati to this place averages \$2.25; the usual route is first to Louisville, 150 miles, thence down the Ohio to the mouth of the Tennessee, about 400 miles by steamboats, thence up the Tennessee 300 miles to Florence, a town at the foot of the Muscle shoals, from thence by wagons to this place, a distance of 75 miles. The cost from New Orleans to this place is \$2 per 100 lbs., making the total cost from the eastern cities coastwise, \$3. By Wheeling and Pittsburgh, from \$5 to \$6. It would be about \$4 if delivered at Portsmouth for \$2.

This correspondence showed that merchandise was sent from the city of New York to Huntsville and Florence, in Alabama; Nashville, Tennessee; St. Louis, Missouri, and Lexington, Kentucky.—The distance from New York to Huntsville is 2,010 miles, of which 672 miles are taxed with tolls on the Erie and Ohio canals. Goods for Nashville, Tennessee, follow the Huntsville route before described, to the mouth of the Cumberland river, (13

miles above the Tennessee,) and then ascend the Cumberland about 200 miles to Nashville. It cost (in 1833) about \$1 per 100 pounds more to transport goods to Nashville and Florence by the Erie canal route, than from New York to the same places coastwise and by New Orleans. The Erie route, however, was considered much the safest, and could be performed in 10 or 12 days less time, and this was assigned by an intelligent merchant as the reason for giving this route a preference.

In the report made by the commissioners of the canal fund respecting the tonnage and tolls in 1836, written by A. C. Flagg, and signed by John A. Dix, Wm. Campbell, and A. Keyser, after reviewing the measures adopted in reducing tolls, which it was confidently asserted would enable our merchants to send great quantities of merchandise into the valleys of the Ohio and the Mississippi, without producing an essential diminution of the canal revenues, the report adds:—

"A reduction in the rates of toll might be desirable, from its beneficial influence upon trade, even though the revenues of the State should be diminished by the operation. The revenue from tolls is a minor interest, when compared with the twenty millions in value of products coming to market, the sale of twenty or thirty millions of merchandise,* and the benefit derived by our citizens from the transportation of this property upon the river, and the canals and the lakes. Notwithstanding the great reduction in the rates of toll heretofore made, the aggregate amount of revenue from the canals for three years, since the reduction commenced, exceeds the amount for three years at the old rates by the sum of more than a million of dollars."

The same report states that "the rates of toll on sawed lumber were reduced in January, 1835, from eight to five mills per 1,000 feet per mile. This reduction is calculated to produce a serious diminution in the revenues of the Champlain and the lateral canals, as they furnish three-fourths of the lumber coming to tide water. The quantity of lumber coming to market has increased from 107 millions in 1834, to 185 millions of feet in 1835.—The Champlain canal has furnished more lumber for the last season than the whole quantity which came to tide water in the preceding season. The increase is to be ascribed mainly, perhaps, to the high price paid for this commodity in market; but the reduction of tolls has undoubtedly had considerable influence in increasing the quantity. The rate of tolls on shingles was reduced at the same time from two mills to one mill per 1,000 per mile. The number of shingles coming to market has increased from 34 to 51 millions. These were the only material alterations made in the rates of toll in 1835.

To be continued.

Common Meridian for all Nations.

We find it stated in the French journals, that in consequence of the confusion existing between the maritime calculations of different powers, and the unfortunate occurrences to which it sometimes leads, the naval powers of the north—Russia, Sweden, Denmark, and Holland—have entered into an agreement to open conferences on the old question of a common meridian for all nations. France, Spain, and Portugal, it is said, have given in their adhesion to the scheme; and a hope is held out that England will come into the arrangement.—There never has been, and there never can be, a doubt as to the utility to science of common points of reference and uniformity of regulation; and no local jealousy should be allowed to stand in the way of them. The most advanced opinion on the Continent seems to be in favor of the selection of an entirely neutral point of intersection—say Cape Horn—which would have the immense advantage of being agreeable to the Americans. If the Admiralty are disposed to go with this movement, there seems a probability of establishing once and for ever this great maritime desideratum.—*London Athenaeum.*

* The value of products coming to tide water for the last four years averages more than fifty-six millions of dollars for each year. And the value of merchandise transported on the canals for the same time, averages seventy-five millions for each year.

Finances of Maryland.

Under the following heads:				Of the above stocks there were issued for the Baltimore and Ohio, the Baltimore and Washington and the Baltimore and Tidewater canal companies and for the Susquehanna and Tide Water Canal company, the following:			
Amount.	Description.	Annual interest.	State Tax.	Net Amount.	5 per cent.	6 per cent.	Total.
4,779,195 22 1/2	per ct.	Sig. 272 170 00	12,655 00	229,515 00	497,000	500,000	497,000
4,067,037 20 6	per ct.	Cur. 244 022 23	10,167 59	223,854 64	1,543,334	88,711	2,232,045
2,778,219 04 1/2	do	do. 138,910 95	5,003 71	133,007 24	500,000	500,000	1,000,000
100,000 00 4 1/2	do	do. 4,500 00	200 00	4,300 00	500,000	500,000	1,000,000
500,000 00 3	do	do. 15,000 00	750 00	14,250 00	500,000	500,000	1,000,000
12,224,381 46		674,603 18	29,626 30	644,926 88	1,000,000	2,040,334	4,929,056
This interest on the sterling stock varies with the exchange on London; 10 1/2 per cent was estimated.				The State pays interest on the above.....\$222,105			
The average interest on the above stocks after deducting State tax is 5 276-1000 per cent.				Less State tax.....9,563			
				\$222,542			
The amount that will be paid by the above companies during the present fiscal year to the State is estimated at from tax on passengers, Washington Railroad.....\$52,000				From dividend.....27,500			
" Baltimore and Ohio railroad in stock 7 per cent at 75 cents.....26,250				" interest Baltimore and Susquehanna railroad.....113,000			
" interest Susquehanna and Tide Water canal.....66,924				285,974			
Deduct interest paid by State for said companies, see table B.....222,542				Excess paid by companies over State's interest.....63,132			
In addition to the payment by the Susquehanna and Tide Water canal, it will make a further payment of \$33,000 on account of arrears of interest.							

The above excess of \$63,132 of payment over the State's interest is made
By Baltimore and Washington railroad company.....53,438
By Susquehanna and Tide Water canal company.....13,424
\$66,863

Less deficiency by B. & Ohio railroad.....\$2,328
Less deficiency by B. & Susquehanna railroad.....1,402
3,730
\$63,132

D.

Statement showing the actual amount of funded debt for which the State has to provide funds for the payment of interest other than those furnished by the railroad and canal companies.

Amount of debt see table A.....\$12,224,381 46
Deduct amount funded for interest as balance on hand to Dec., was sufficient.....133,712 82
12,090,668 64

Deduct amount issued for the above companies, as they pay more than the interest on the same.....4,229,045 00
7,761,623 64

And deduct the principal, covered by the excess, table C, \$63,132, at 5 276-1000 per cent.....1,196,588 64

Leaving for the State to provide for.....6,665,035 00
And if the sinking fund is deducted.....2,003,016 00

Would leave to be provided for to pay interest from the various taxes, only the sum of.....4,662,019 00

E.

But as the sinking fund is sacred, and not to be diverted from its purposes, it will be necessary to assume the debt as amounting to...\$6,665,035
The annual interest on which is...352,754
The other expenditures of the State as per F. annexed are.....258,073
Total expenditures.....\$610,827

The receipts from all other sources except interest received from the above companies, and direct tax, see table G., are.....\$525,000
The direct tax..460,000
985,000

Leaving a surplus of.....\$374,173
To which add balance on hand December 1st, 1850.....\$245,409
Less appropriations not paid..34,373
And arrears of interest.....133,712 168,085 77,324
451,497

And adding the annual interest on the sinking fund, say \$2,000,000, at 5 276-1000 per cent.....105,520

Gives the handsome sum to be added annually to sinking fund of.....557,016
—Baltimore American.]

Coal Mining in Maryland.

The coal companies of the Cumberland district are now making preparations to commence mining for the ensuing season on a large scale. In relation to two of these companies, we copy the following paragraphs from the Cumberland Civilian:

Maryland Mining Company.—This company is one among those most actively engaged in the

transportation of coal in this region. They own fine coal lands connected with the canal by a railroad, at the terminus of which is a commodious basin, with fixtures, already completed, for loading. The works and railroad cost \$300,000, and the active capital employed amounts to \$75,000 more.—For the year ending June 1st, 1850, this company transported to market 105,000 tons of coal, employing 60 men at an average rate of wages of \$25 per month.

Frostburg Coal Company.—This has for some time been engaged in the successful mining of coal. The cost of their coal lands was \$100,000; the cost of their railroad horse power, added to their active capital, makes the sum of \$50,000. They employ 40 hands, at an average rate of wages of \$30 per month, and for the year ending June 1st, 1850, sent to market 59,000 tons of coal.

Population of New Hampshire.

The following is the population of New Hampshire by the late census:

	1850.	1840.
Rockingham.....	49,215	45,791
Strafford.....	29,359	23,149
Belknap.....	17,722	17,989
Carroll.....	20,166	20,182
Merrimack.....	40,346	36,283
Hillsborough.....	57,480	42,345
Cheshire.....	30,141	26,430
Sullivan.....	19,376	20,318
Grafton.....	42,343	42,200
Coos.....	11,853	9,836

318,001 281,523

Grand total of the State, 318,001—a gain since 1840 of 33,478.

In the counties of Belknap and Sullivan, it will be seen that there has been a small decrease of population.

Annual Report of the Commissioners of the Canal Fund.

STATE OF NEW YORK CANAL DEPARTMENT, }
Albany, January 22, 1851. }
To the Honorable the Commissioners of the Canal Fund:

The auditor of the canal department, in compliance with the statute, respectfully presents a statement of the receipts and payments on account of the canals and the canal debt, and the balances of the funds on hand, the depositories of the same, and the condition thereof, for the last fiscal year:

The balance of canal funds on hand on the 1st October, 1849, consisted of—

Deposits in banks.....\$1,725,136 68
Investments, securities in canal department.....483,089 49
2,208,226 17

The receipts during the year have been.....3,714,376 67
6,922,602 84

The payments during the year have been.....4,895,688 12
1,026,914 72

Due from the general fund.....4,596 99

Total balance at the close of the year, \$1,031,511 71

Of this balance there is deposited in banks.....817,483 39

Invested in bank fund stock.....209,431 33

Due from the general fund.....4,596 99

\$1,031,511 71

REVENUES AND EXPENDITURES OF THE FISCAL YEAR.

Statement of the revenues of the State canals, and the expenses of collection, superintendence, and ordinary repairs, during the fiscal year ending the 30th September, 1850.—Art. 7, sec. 1, of the constitution.

RECEIPTS.

Tolls.....\$3,390,476 63
Rent of surplus water.....2,604 74
Interest of current canal revenue, etc. 93,090 93

Revenues.....\$3,846,172 30

PAYMENTS.

For repairs on canal, viz:	
To superintendents of repairs	\$560,845 62
To canal commissioners ..	9,108 98
	<hr/> 569,954 60
For expenses of collection of tolls, viz:	
By collection of tolls	\$48,904 57
By weigh-masters	6,081 93
	<hr/> 54,986 50
For tolls refunded	3,137 32
For printing	1,308 94
For salary of auditor and clerks of the canal department	7,187 72
For miscellaneous payments	8,186 92
	<hr/> 644,762 00
	<hr/> \$2,841,410 30
Payments by canal commissioners for new work on the lateral canals, under special laws, viz:	
On the Oswego canal	82,507 60
On the Cayuga and Seneca canal	58,443 77
On the Chemung canal	40,991 10
On Crooked Lake canal	9,261 25
	<hr/> 191,203 81
Surplus revenues	\$2,650,206 49
Amount set apart by article 7 of the constitution, to pay the interest and redeem the principal of the State debt, and for the support of government, viz:	
For that part of the debt, called the canal debt, sec. 1	1,300,000 00
For that part of the debt, called the general fund debt, sec. 2	350,000 00
For the general fund, to pay the necessary expenses of government, sec. 3	200,000 00
	<hr/> 1,850,000 00
The "remainder of the revenues" of the fiscal year, applicable to the completion of the Erie canal enlargement, Black River and Genesee Valley canals	
	<hr/> \$800,206 49

COMPLETION OF THE CANALS.

From the foregoing statement of the revenues and expenditures of the year, the surplus applicable to the completion of the canals appears to have been \$800,206 49, to which is to be added the sum of \$7,969 16, paid out of the tolls of the previous year for extraordinary repairs, and now restored to the fund for the completion of the canals, making the sum of \$808,175 65 to be applied to that object. In my last report the surplus was estimated at \$942,000. There is, therefore, a deficiency of anticipated means of \$133,824 35. The appropriations previous to 1850, had exceeded the revenues applicable to meet them, by the sum of \$202,425 78. The legislature last year appropriated \$944,000 of the surplus revenues to the completion of the canals, which exceeded the estimated amount for that object, after supplying the deficiency of the revenue of the previous year to meet the appropriations, by \$202,425 78, and exceeded the actual means, after supplying such deficiency, by \$338,250 13, leaving that sum to be supplied from the surplus of the current fiscal year, to meet the appropriations already made.

ESTIMATE FOR THE FISCAL YEAR.

I estimate the revenues of the present year at \$3,342,000, and the expenditures for collection, repairs, etc., at \$750,000. After deducting the constitutional appropriation to the canal debt sinking fund of \$1,300,000, and the contributions to the general fund of \$550,000, this estimate leaves a surplus for the unfinished canals of \$742,000. Of this surplus \$338,250 13 will be required to make

good the deficiency of last year, and only \$403,749 87 can be considered under the control of the present legislature.

The appropriation of last year for repairs proved inadequate, and it became necessary to throw the payments for September forward upon the appropriation for this year. This was done, by inducing one of the deposit banks to hold the drafts for the month till the appropriation became applicable for their payment.

The appropriations for repairs ought to be large enough to meet every demand upon them. Economy cannot be enforced in the repairs of the canals by any restriction in legislation. The constitution provides that the current expenses shall be paid first of all, as it is obvious that they must be, or our whole reliance for revenue would fail. No foresight can guard against the effects of such storms and floods as prevailed during the last season; and as the damages they occasion must of necessity be repaired, it is very desirable that the symmetry of our accounts should be preserved, and every expenditure paid from the treasury at the time it is made, and not have those of one year thrown upon the next, which necessarily shows, in the account of payments, an untrue statement of actual transactions.

The tolls of the present year are estimated at \$90,000 less than the receipts of last year. Under the law of last year, exempting certain live stock and fresh meats from toll when conveyed on railroads, it is already certain that there will be a considerable diminution in railroad tolls. The consolidation of four of the toll paying railroads into two under the provisions of law in regard to local freight, also reduces our receipts from those companies. The statutes in relation to tolls on the railroads need revision and amendment. The Northern railroad is completed, and is already manifesting its ability to draw profitable employment from the business heretofore tributary to our canals. When navigation opens in the spring, we shall find the New York and Erie railroad on the shores of Lake Erie, completed in its whole extent, contending with us for the transportation of the accumulating products of the west. If, under this powerful competition, our tolls do not recede more than \$90,000, it will be the greatest triumph of our canal policy that has been achieved in its beneficent history.

The wise liberality and enterprise of the State of New York, in the construction of the Erie canal, opened the prolific west to easy settlement and profitable cultivation. Richly freighted vessels and steamboats now cover the waters of lakes and rivers, where the whole tonnage would have been confined to rafts and canoes but for this great work.—The accelerated growth of the west, dependent upon the facilities proffered by the people of this State, has enabled industry and capital to penetrate remote regions with solid iron roads and rapid engines, earning rich rewards for outlay and toil, where otherwise the forest path and prairie solitude would still have been trod only by the adventurous hunter. It is the province of the wisdom and justice of the State to provide for the permanent maintenance of the ascendancy, now long enjoyed by our great artery of trade, as a channel of intercourse between the States peopled by its means and the Atlantic. This object would now have been placed beyond all contingencies, if the work of the enlargement had not been unfortunately arrested. If the enlargement was now completed, it would be entirely within the control of the State to accommodate all the carrying trade between the Atlantic and the lakes, at rates so cheap as to preclude the idea of competition, and at the same time to secure a revenue sufficient to discharge the public debt, and relieve the people from the burdens of taxation for all time to come. The instant completion of the enlargement would, if practicable, be cheaply purchased at a cost of twenty millions;—but a far less sum is required to effect it, and the most deeply interesting inquiry in the present policy of the State is, how most economically and speedily to effect this great object. The present estimates require for this work the sum of \$11,000,000. Allowing \$750,000 a year under the constitutional arrangement, we must wait more than 14 years before the consummation of the work.

In the meantime, while the capacity of the canal

remains limited, its revenues are endangered by the active competition before referred to, and by the no less ambitious efforts of the Canadians to attract business through the costly work with which they have united the St. Lawrence to Lake Champlain.

It is in the power of the State to make this competition subservient to the great purpose of completing her own improvements, by exacting equitable tolls for the transportation of property through her limits, on the thoroughfares which are the legitimate offspring of her munificence.

Nor could it be a fair subject of complaint on the part of our railroads, or the people of the west, if this State should exercise its just power in this respect, and not suffer them to enter upon an unrestricted rivalry with the canals [to which they owe the strength and wealth which have called them into being] until the canals themselves shall have been completed.

Whether any other means than wisely protecting and husbanding the canal revenues, can be devised to secure an immediate completion of the enlargement, is a consideration addressing itself with peculiar force to every responsible department of the government, and to the people.

In connection with this subject, it seems appropriate to present a view of the progressive advancement of the canal revenues from the opening of the Erie and Champlain canals. The canal board, in 1840, presented to the Assembly an elaborate report on the prospective revenues of the canals, in which they arrived at the conclusion, from their past history, that it was prudent to anticipate, at least for the period of seven years, an increase of the tolls of the Erie and Champlain canals, at the rate of seven per cent. per annum, for each period of seven years—that is to say, that the general result for seven years would be equal to what the tolls of each year would amount to, calculated at that rate of increase from the seventh preceding year. The actual result of the seven years embraced in their estimate fell short of their anticipations only a little more than half a million of dollars, in a gross amount of nearly \$14,000,000. This is a remarkable close approximation to actual results in an estimate for so long a period, embracing transactions of such magnitude. But the results of further experience more fully justify the general correctness of the views exhibited by the board. Bringing forward the computations on the basis of the same estimated rates of increase, it is found that in the whole period from the opening of the canals, including 1850, the actual revenues of the Erie and Champlain canals have exceeded the progressive increase, at seven per cent. per year for each period of seven years, by the sum of \$1,782,440.

The calculations of the canal board were based upon the rates of toll then established upon the canals. Since that time large reductions have been made in the rates of tolls, which, of course, greatly modified the results I have stated.

But, heretofore, every modification and reduction of our canal tolls has been made (whether judicious or otherwise), with reference to favorable effects on the revenue. Now, for the first time in the history of the canals, the question is presented whether they can maintain their business against powerful and active rivalry.

Without this rivalry, I should not hesitate to assume with entire confidence, that the general rate of increase at seven per cent a year, for succeeding periods of seven years, would be maintained by the Erie and Champlain canals, for another quarter of a century, if the tolls should continue to be established from time to time, on a revenue basis.

The present must be regarded as an interesting period in the history of the canals. Hitherto their prosperity has been uninterrupted; and so certain in prospect from year to year that their friends have never been oppressed with an anxious thought in regard to their increasing value and usefulness. I am impressed with the belief that it depends upon the wisdom of the State, now, by adopting expeditious means of giving the Erie canal the full capacity of its enlarged size, to perpetuate the augmenting value of this rich possession. Otherwise, apprehensions are not unreasonable that the point has been reached where a long pause must be made.

Whatever the future may have in store, it will

not be uninteresting, at the close of the first quarter of a century after the opening of the Erie and Champlain canals, to look back at the results of their construction upon the finances of the State, and compare their income from one period to another.

To be continued.

Pennsylvania.
Pennsylvania Railroad.

The Philadelphia papers published last week the annual report of the board of directors of the Pennsylvania railroad company—extending from Harrisburg to Pittsburg. The statement of its affairs includes a period of fourteen months ending on the 31st of December, 1850. We extract some passages from the report which show its progress, condition and aims:

The report of the Treasurer shows the receipts of the company, on account of capital stock to the latter date to have been.....\$5,822,210 00

Leaving a balance of.....	\$726,663 88
Which, with the amount of subscrip- tion yet to be collected.....	1,013,640 00

Constitutes the available means of the company for the prosecution the work.....	\$1.740.303 80
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The eastern division of the road has been completed to the Tyrone Forges, in a manner entirely satisfactory to the board, and will not, in their estimation, suffer to contrast with any other railroad in the country.

Upon the western division, the work thus far has been well done, and has been executed as rapidly, except a few sections, as was deemed consistent with durability.

The board have contracted upon favorable terms for a sufficient quantity of iron for the superstructure of the western division. While an honest State pride is gratified in adverting to the fact that the road is thus far constructed exclusively of Pennsylvania material, the board have no hesitation in expressing their full conviction that the difference in price will be more than counterbalanced by the superiority of our rails over the best of those recently imported for other roads. The contractors, as an evidence of their own confidence, bind themselves to replace, without charge, all rails which shall give way within five years, from an original defect.

The eastern division of the road was opened for use to the Portage intersection, one mile west of Hollidaysburg, on the 17th of September last, too late to secure to the company the full benefit of the fall trade and travel, and the Portage railroad was closed for repairs, by order of the canal commissioners, on the 17th of December.

During the months of October, November and December, the net receipts for passengers and freight were \$42,084 84, equal to an annual interest of \$3.82-00 per cent upon the cost of this division, including the Hollidaysburg branch, with the interest thereon chargeable to construction, and of all the cars, locomotives, machinery and fixtures in use. The result induces the board to believe that the road will, during the current year, earn 6 per cent upon the cost of whatever portion may be brought into operation, and that it will henceforward yield an equal or larger per cent upon the whole outlay, productive and unproductive after making proper provision for depreciation, by the creation of an ample contingent and renewal fund.

The local trade and travel increase so steadily as to leave little room for doubt that they will, in a few years, be adequate to the support of the road, and the payment of interest upon its cost. Even now the receipts at stations which had no name when the road was located, exceed those at some of the largest towns upon the Juniata.

All other things being equal, the geographical position of Philadelphia will secure to her a virtual monopoly of the trade of the west against all rivalry. That trade is, however, too tempting a prize to be permitted to remain in any hands but

those which are as prompt to defend as they are able to hold it. We must look the fact in the face that it is lost in part, at least, to Philadelphia, if further delay be suffered in the construction of the mountain division of the Pennsylvania railroad.

The Baltimore and Ohio railroad is now under contract throughout its entire length; from Cumberland westward 5,000 men are at work upon it. 22,000 tons of rails have been imported for it, and the energy and sagacity which mark its management, permit no doubt that it will be prosecuted with the utmost vigor till it reaches the Ohio river. The Erie railroad, hitherto driven forward with very little regard to cost, must be completed to Lake Erie in May next, in compliance with the condition upon which \$3,000,000 of State, and \$750,000 of private stock were relinquished to the present stockholders.

To compete with these unbroken lines from the seaboard to the western waters, managed, as they will be, by the ablest merchants of our sister cities, Philadelphia will have the eastern and western divisions of the Pennsylvania road connected by a link of 30 miles, embracing ten inclined planes, the crossing of which has heretofore generally consumed sufficient time to make the trip between Philadelphia and Pittsburg, upon a first class railroad, and the use of which will entirely cut off from this company one of its largest prospective sources of revenue, the transportation of live stock from points west of the Allegheny to the eastern grazing counties of Pennsylvania, and to the Philadelphia and New York markets.

It is suggested by the Chief Engineer, that the sum of \$1,500,000 will suffice to build a road from Altona to the head of plane No. 2, by which the worst portions of the Allegheny Portage road would be avoided, and the time consumed in crossing the mountains materially reduced.

As a last alternative, this proposition might be adopted; but while the proposed connection would be, in many points of view, a decided improvement over the one now in use, it would fall very far short of accomplishing the primary purpose for which this undertaking was projected, of securing to the commonwealth and its two great cities the benefits accruing from the possession of the trade and travel of the west, by furnishing a route which should in all respects compare favorably with the best of its rivals. That object can never be attained, while any link, however small, shall remain under the ever-varying management incident to the incessant changes of State and local politics.

With a view to procure that result at the earliest possible day, and to promote at the same time what they conceive to be the true interests of the present stockholders, the board earnestly recommend that immediate provision be made for putting the mountain division under contract at as early a period of the ensuing spring, as the character of the ground will permit. To build this portion of the road, and partially equip the whole, will require the filling up of the capital stock of company to the limit fixed by the recent action of the stockholders, under the authority conferred in the charter. The amount subscribed to this date is \$6,835,850, which will be increased more than \$100,000 by the issue of stock, deliverable upon the completion of a portion of the contracts upon the western division, leaving to be supplied a sum slightly exceeding three millions of dollars.

If we could forget what is due to ourselves, we are not at liberty to overlook our obligations to others who have united their fortunes with ours in a common destiny, and faithfully fulfilled their part of the implied contract. The extraordinary energy with which the Ohio and Pennsylvania railroad has been driven westward, has concentrated upon that improvement many smaller ones, originally projected with a view to very different connections, and created others destined to add largely to its revenues, and to those of the Pennsylvania railroad. From the present year forward that road and its countless tributaries will pour upon the western terminus of ours an immense amount of tonnage, to find its way slowly, and at a comparatively heavy cost, over a broken line, till the completion of our entire road shall open an outlet for this and other roads whose most available eastern connection is still an open question, whose capacity shall be equal to any demands which can be made upon it.

The board have made the best arrangements in their power for the transportation of merchandise and produce between Philadelphia and Pittsburg, during the continuance of canal navigation for the current year, at prices varying from 50 cents to \$1 per 100 lbs.

They have fixed these rates not so much with a view to present profits as to the promotion of what they believe to be the true interests of this company, and of the mercantile community, with which it is so intimately identified. They have, after the most careful investigation and mature consideration, decided upon starting from the outset with a uniform tariff of low charges, in preference to the sliding scale, which has hitherto militated so seriously against the increase of the inland trade of Philadelphia and of the revenues of the commonwealth.

The board are gratified to have it in their power to state that they are sustained in the adoption of this system by the concurrence of the intelligent gentlemen who now compose the canal board, and that they are assured of their cordial co-operation in fixing the settled policy which shall hereafter govern the operations upon the State works, as well as those of this company.

Indiana.

Madison and Indianapolis Railroad.—Below we give an abstract of the report of this company for the past year.

The aggregate of the transportation service performed on the Madison road proper is \$300,943 40.

The nett earnings on this road for the year ending Dec. 31, 1850, is \$90,407 80.

The total receipts of the company, for the last year, were \$687,619 89. The total expenditures \$673,121 99, leaving a balance of \$14,496 90.

For services performed during the past year, by the M. & I. R. Co., the Bellefontaine, the Terre-Haute, the Shelbyville, the Knightstown, the Rushville, and the Peru railroads were indebted \$19,798 39, of which \$15,555 72 has been paid.

The increase of business on this road during the past year, presents a most gratifying result. The following table will show the increase of the leading articles of traffic, as compared with 1849. It is to be borne in mind that, before the crop of this year came into market, the freight transportation was very light; and that the comparison is very nearly that of the last six months of 1850 with the year 1849.

Items.	1849.	1850	Increase
Wheat, bushels....	161,981	334,176	172,195
Corn, do.....	111,519	153,581	42,062
Cornmeal do.....	3,604	19,951	16,347
Bacon, hhd.s.....	1,342	1,765	423
Bacon and pork, in bulk, lbs.....	454,398	854,333	399,935
Live hogs.....	52,044	93,949	41,895
Lime, bbls.....	142	8,763	8,621
Stone, tons.....	88	2,127	2, 39
Outward mdze lbs.	18,602,806	24,537,357	5,924,551
Inward "	1,322,251	2,068,747	737,496

There is a small decrease on flour, oats, and barrel pork. The whole freight transportation would have been largely increased had the company possessed the power and the cars to perform the service.

The passenger transportation of the two years compares as follows:

No. of passgrs in 1850.	64,986	Revenue.	\$87,465 90
" " 1847.	52,894	" "	77,996 53

Increase	12,092	\$9,459 37
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The produce transported over the Shelbyville and Rushville railroad, from the commencement of operations to the first of January, 1851, is as follows:

Wheat, bushels.....	50,378	Corn, bus.....	14,615
Potatoes, bbls.....	200	Oats.....	365
Apples, do.....	316	Dried apples bus	10
Butter, do.....	5	Brooms. dozen.	90
Eggs, do.....	2	Flaxseed, bus..	70

The gross receipts of the Madison and Indianapolis railroad, for the week ending January 18th, amounted to \$8,133 82. The business of the week ending to-night will foot up like a sum.

Lafayette and Michigan City Railroad.—We learn that the gentlemen who represent the interest of the Michigan and Southern railroad company at Indianapolis, have agreed, as one condition to obtain the right of way across the State for that company, to build a railroad from Lafayette to connect with Michigan City, within four years from this time. If the right is granted to any company we hope this provision will be made secure. The connection of that road with this city would be one of its most, if not the most important branch they could construct. It would divert a large portion of the travel which now seeks other communications, to that route, and be a connecting link with the roads which will concentrate here. This condition should not be deemed onerous, but one that will be equally advantageous to the company, as to this section of the State.—*Lafayette Courier.*

Ohio.

Steubenville and Indiana Railroad.

We have the first annual report of this company which has for its object the construction of one of the five great lines of railroad running east and west through the eastern part of Ohio. At Newark it will unite with the Central railroad.—The length of the road will be about 121 miles, and the distance from Steubenville to Pittsburg, is about 40 miles, making the entire distance from Pittsburg to Newark by this line, 161 miles.

Below we give a portion of the report of the company relative to the route, business prospects, etc., etc:—

It is a wellknown fact that the country bordering on the Ohio river, and extending for a distance of from twenty to forty miles parallel with the river, presents the feature of lofty hills broken by the intersection of numerous and deep ravines. These ravines being formed by the various currents of water flowing into the Ohio, their general direction, and that of the accompanying ridges, is at right angles with the river. Hence, in selecting the location for a railroad extending from the river into the interior of the State, the valleys of these affluents must be adopted as the routes by which the hilly region bordering the Ohio must be passed. The valleys which present themselves as adapted to this route are those of Cross Creek, Connotton, and Stillwater, which empties into the Tuscarawas, thence with the valley of that stream, and by one of its tributaries, into the valley of the Scioto.

This route has been surveyed by two competent and experienced engineers, in two distinct surveys, the results of which we will here present.

The first survey was made by Doctor Charles T. Whippo, of Pennsylvania, a gentleman of well known reputation and high character as a civil engineer, and the result is thus briefly summed up in his report:

"It will be perceived by the following table of grades, that our highest grade is upon 194 miles, and that upon the remaining portion of the line it will be very light—averaging 11 to 22 up to 26 feet. The grade from Urichsville to Coshocton will be less than three feet to the mile, and that from Coshocton to Mount Vernon, five feet per mile.

Plane No.	Distance.	Grade to mile.
1	3 miles 360 feet	11.22 feet.
2	3 " 1,224 "	22.89 "
3	1 " 984 "	18.54 "
4	0 " 2,160 "	22.00 "
5	1 " 768 "	14.84 "
6	2 " 1,104 "	15.84 "
7	1 " 4,656 "	15.94 "
8	1 " 768 "	14.84 "
9	1 " 3,144 "	25.69 "
10	1 " 1,624 "	22.15 "
11	6 " 1,368 "	*30.55 "
12	4 " 2,208 "	†30.55 "
13	9 " 2,808 "	5.38 "
14	3 " 579 "	†36.35 "
15	0 " 1,296 "	00 "
16	5 " 2,976 "	‡30.55 "
17	3 " 144 "	7.03 "

*Ascending Cross Creek summit.

†Descending into Connotton.

‡Ascending Connotton summit.

§Descending into Stillwater.

"It may be remarked that we have favorable ground for the construction of a railroad upon the entire route, with the exception of 15 miles in the Cross Creek valley, and the deep cuts at the two dividing ridges alluded to."

The following report is from Jacob Blickensderfer, Jr., the chief engineer now in the employ of the company, and at this time engaged, with a competent corps and two experienced assistant engineers, in the service of the company. Mr. Blickensderfer's long connection with the public works of Ohio, and his known character as an able engineer are a sufficient guarantee for the accuracy of his statements:

"D. Kilgore, Esq., President:

"Sir—From the examinations which have been made, I do not hesitate to say that an excellent road can be built on the route of the Steubenville and Indiana railroad, at a reasonable cost. The route is in many respects much easier than was expected. The ridge dividing the waters flowing into the Ohio from those flowing into the Tuscarawas is lower and more easily crossed, and the curves and grades will be better than I had supposed.

"The surveys have not arrived at that state of forwardness which enables me to give statements in detail, showing all the features of the road, but its general characteristics have been fully developed.

"The distance from Steubenville to Coshocton, by the route of the Steubenville and Indiana railroad, will be about 81 miles. Of this portion of the road more than one half lies in the valleys of the Tuscarawas and Connotton, on ground admitting of the construction of a road at a very reduced cost, with easy curves and grades, probably in no case exceeding 10 feet per mile. The more easterly portion of this line, comprising the first 36 miles from Steubenville westward, situated in a more broken country, will be somewhat more expensive, but even here the cost of construction will be within moderate limits, and the curves and grades favorable.

"In no instance will grades exceeding about 394 feet per mile be required. The minimum radius of curvature will not be less than 1500 feet, and may perhaps be increased to 1910 feet.

"Between Coshocton and Columbus the road will also be of easy construction, with favorable curves and grades; and I am satisfied that the entire road from Columbus to Steubenville will be of a character which will compare favorably with any other line of communication between the interior of the State and the Ohio river, and a large proportion of it, (being that part situated in the valleys of the Muskingum, Tuscarawas, Stillwater and Connotton) will be equalled by few other roads in the State.

The natural direction of trade for the exports and imports of Central Ohio is by this route.

Other things being equal, trade will take the shortest and cheapest route to a market. Since the construction of the New York and Ohio canals, they have afforded the cheapest, though not the shortest, route for the trade of central Ohio. Hence, although Philadelphia is the nearest, and that which nature seems to have designed as the proper market for central Ohio, yet New York and Boston have nearly monopolised its trade. It can only be restored by the construction of roads possessing superior advantages to those leading northward. Not only will Philadelphia find this necessary in order to recover the trade which she has lost, but even to retain that which she now possesses. The only part of the trade of Ohio, which now goes to Philadelphia, is that from the counties bordering on the Ohio river. So soon as the Wellsville and Cleveland road is in operation, a great part of this will leave the river at Wellsville, instead of passing on to Pittsburgh. This must necessarily tend to divide the trade which Philadelphia and Pittsburgh still derive from the west; and in a low stage of the Ohio, nearly all of it will leave the river at Wellsville.

It is claimed that the Pennsylvania and Ohio road will secure this trade to Pittsburgh and Philadelphia. There can be no doubt but that this road will open to Pittsburgh an immense market for her manufactures of iron, glass, cotton, &c., which may amply remunerate her for its construction. But will it divert the exports of central Ohio, Indiana, Illinois and Missouri, from New York and Boston, to Philadelphia? A glance at the map will show that in order to reach Pittsburgh by this route, the entire trade of this region must pass the point of intersection of the Columbus and Cleveland road at Galion. This is 72 miles from Cleveland, on a dead level and without a curve.

This distance from Galion to Cleveland will be run in 24 hours. From Galion to Pittsburgh the distance is 180 miles, on a serpentine road, with grades of fifty feet to the mile. It may be run in 9 hours, making a difference of 64 hours in favor of Cleveland.

This 64 hours will carry the trade to Buffalo in the same time required to carry it to Pittsburgh. The distance from Buffalo to Albany is 327 miles; from Pittsburgh to Philadelphia, 355 miles; difference in favor of Albany, 28 miles.

But when it is recollected that Albany is much nearer to the Boston and New England markets, the great consumers of western produce, than Philadelphia is; and that flour and wheat always command a higher price at Albany than at Philadelphia, it is not difficult to answer the question whether the Pennsylvania and Ohio road will divert this trade from the northern markets. The entire trade of central Ohio, Indiana, Illinois and Missouri, in order to reach Pittsburgh by the Pennsylvania and Ohio road, must pass this point of intersection at Galion. This is unavoidable. Once at Galion, no one can doubt for a moment, if he will look at facts and figures as they exist, what direction the trade would take from that point eastward. Galion is too near the lake for Philadelphia to attempt to divert a trade, once there, from New York and New England influence. Galion is within a circle of that wide-spreading whirlpool which carries all that it reaches to these northern markets.

The counties traversed by this line are Jefferson, Harrison, Tuscarawas, Coshockton, Licking and Franklin, embracing an aggregate of 1,974,000 acres, valued at \$26,884,000, and with a total valuation of \$42,132,000, and with a population of 172,201. A portion of the trade of these counties would be shared by this, in common with other roads; but it is believed that this would be made up by what would be attracted to it from other counties. The line traverses an excellent farming region, and in addition it passes through one of the great coal fields of Ohio. In relation to this the report speaks as follows:

But there is another fact, of immense importance, which should not be omitted in stating the comparative advantages of this route for a railroad. It is this: *It traverses one of the best bituminous coal regions in the United States.* From the Ohio river westward to the Tuscarawas, a distance of over 50 miles, the whole abounds in coal, of the best quality, and easily mined. To the west of the Tuscarawas valley, no coal is found. Hence a large trade in this article would be at once opened, between eastern, and central and southern Ohio. This trade would pass in an opposite direction to that of the agricultural products exported, thus giving full employment to the road in both directions.—No estimate can be formed of the amount of this coal trade, as all experience proves that the consumption of coal increases precisely in the ratio that you reduce its cost. When it is recollected that railroads of equal extent, and much greater cost than this, have been constructed and found profitable for the exclusive business of transporting coal; and others for the exclusive business of transporting agricultural products, which have also proved profitable, who can doubt the result, when both these advantages, in their greatest extent, are combined in the one road? No other road, in the entire west, or perhaps in the United States, embrac-

es, to an equal extent, resources in local trade, which this one undoubtedly does.

But we must not overlook the *through travel and trade* which the road would also command. Most of the travel between Pittsburgh and Cincinnati would certainly be diverted from the circuitous river route, to this road. Time is the great element to be saved in travel. The distance saved over the river route would be 190 miles. The time would be about 24 hours on each trip. This saving, in both distance and time, would command the travel. A low estimate would place the amount of travel at least at 100 passengers daily each way. This would itself more than sustain the road.

Our road, therefore, will command three distinct and independent sources of profit, either one of which would be more than adequate to make it a paying investment. These are—

1st. The local produce business and way travel of the country traversed.

2d. The coal which it would transport.

3d. The through travel and trade which it would command.

AMERICAN RAILROAD JOURNAL.

Saturday, February 15, 1851.

Patent Machine Picket Fence

SIX DIFFERENT STYLES of this fence are now made by patent machinery; and is by far the most economical fence for Railroads, Farms, Yards, etc., ever yet offered to the public, costing only from 4 to 30 cents per foot, according to pattern; and is so put up as to be shipped at a trifling expense. Full particulars will be furnished, by addressing the subscriber, to whom all orders should be sent.

N. STATTON, Troy, N. Y.

The Stock and Money Market.

The past has been an uneasy week in the stock market, but the recent panic is blowing over, money is more accessible, and speculators are again commencing operations. The tendency of prices is upward. Quotations are pretty much the same as in our last issue, though the market has fluctuated a good deal during the week. As we have before stated, the recent fluctuations have been the result of speculations, and have had but little to do with the value of securities, or to the condition of the money market. Should the influx of California gold continue, the money will remain abundant, prices of stock will be sustained and the securities will continue to command a good price. Should this fall off we may then begin to look out for a panic.

The operations which most concern our readers, are those in railroad bonds. A very heavy business continues to be done in these securities, and the prospective amount coming into market is very large. The communities that are now most actively engaged in railroad construction, are the new States—the people of which have accumulated but little surplus capital. The demand for capital in these is too great, and the opportunities for investment too inviting to allow any thing to be hoarded. Railroad companies consequently find it for their interest to come here for money, and pay at the rate of 8 or 9 per cent, than to attempt to raise it among their stockholders. It a western company comes into market for money with their road graded and prepared for the iron, they are considered to have made out a case, which entitles them to money, and if their routes are favorable they find but little difficulty in borrowing sufficient for their iron and equipment upon a mortgage of the road. This mode of raising the means necessary for these works is now reduced to a pretty regular system, and is likely to continue till our means are exhausted or till the country is completely covered with these works.

Since our last, several important moves have been made in railroad affairs. One is the incorporation of a company of eastern capitalists, at the head of which is Mr. Schuyler, of this city, for the purpose of building the Great Central railroad of Illinois. This company, we understand, take the lands granted by the general government, and as a consideration pay the State 7 per cent of its annual gross earnings. They are to build the road in three years. The lands well managed will probably furnish sufficient means to build the road, though not so fast as the means will be wanted. The State will probably receive a handsome income from the road and the corporators will make colossal fortunes. The gross earnings of this road after its completion should be 3 or 4,000,000 dollars per year.

We learn by a telegraphic dispatch that a bill appropriating \$3,000,000 for the Pacific and the Hannibal and St. Josephs has passed the senate of Missouri. We presume that there is no doubt of its becoming a law. This amount will be ample to secure the completion of both of these lines, and as the State guarantee will undoubtedly be negotiated abroad, their construction will help instead of depressing the money market. This movement on the part of Missouri will exert a favorable influence upon the securities of roads east of them, as it removes the frontier line of railroad some 4 or 500 miles further west, and gives to the railroads of Ohio, Indiana, Illinois, and Kentucky, more of a character and appearance of central and connecting lines. It is important too as indicating another stride in the great line to the Pacific. Should the general government undertake this work the Missouri roads will essentially abbreviate the distance to be built.

At the present sitting of the Virginia Legislature, that State has granted important aid to two works the Manasses Gap and the South Side railroad. It has also chartered a road from the Baltimore and Ohio railroad to Parkersburgh on the Ohio. This is an important matter to the Baltimore and Ohio railroad company, as it will save the through travel the great detour by way of Wheeling. This charter will add materially to the value of the stock of the Baltimore and Ohio railroad, as it will in connection with other lines, open a direct route between Baltimore, Cincinnati and St. Louis, Mo.

The New York and Erie is still much depressed, owing in part we presume to the probable issue of new bonds, to the amount of \$3,500,000 to pay off the floating debt of the company and for a double track for a portion of the line. Parts of new track at various places on the line of the road will be indispensable when the whole is opened. The company are pushing forward their work with great energy. A long section west of Hornellsville is about being opened for business. The iron is also laid on a portion of the western end of the line. The company has also secured the use of the Ramapo road for the purpose of bringing their line into Jersey City, a very important matter for the convenience of travel and as offering a great saving to the company.

Since our last quotations, rails have remained nearly the same. Contracts have been made at about \$40 50, though we think it very probable that some dealers would decline selling at that rate. Western railroad bonds are selling for 85 to 90 net. There is every appearance that these will continue to be in demand for some time to come.

SALES OF STOCK IN NEW YORK.

	February 7.	February 14.
	Sales.	Sales.
U. S '67 Loan.....	115½	115½
Erie R.R.....	79½	81
Harlem R.R.....	64½	68
Stonington.....	42	43
L.I. R.R.....	21½	21
Norwich & Wor....	61	65
Albany & Sch'y R.R.	90	
Del. & Hudson.....	133	
Rochester and Syracuse	112½	112½
Reading.....	62	63
Morris Canal.....	19½	21½
Erie income.....	91½	93½
Hudson River.....	79	81
" " Bonds.	103	102½
" " 2d mor	96	
Utica and Sch'y R.R.	123	123
Canton.....	70	62
Farmers Loan.....	61	66

SALES OF STOCKS IN BOSTON.

	Feb. 6.	Feb. 13.
Old Colony Railroad.....	68	67
Boston and Maine R.R.....	105½	106
Eastern Railroad.....	103	102½
Fitchburg Railroad.....	111	111½
Michigan Central Railroad....	97½	95
Northern Railroad.....	72½	72
Vermont Central Railroad.....	35½	34½
Vermont and Mass. R.R.....	30	29
Western Railroad.....	106½	108
Ogdensburg Railroad.....	38½	37
Rutland Railroad.....	56	52½
Portland, Saco & Portsmouth R.R.	99	99½
Boston and Worcester Railroad.	105½	105½
Rutland Railroad Bonds.....	88	86
Vermont and Mass. R.R. Bonds..	89	88
Ogdensburg Railroad Bonds.....	99½	99
Vermont Central R.R. Bonds.....	92	95
Norfolk County R.R. Bonds.....	63	72
Boston and Providence R.R.....		85
Philadelphia, Wilm'gton & Balt.	30	31½
Concord R.R.....	55½	55½
Connecticut river R.R.....	78	76
Cheshire R.R.....	63	62
Boston and Lowell.....	114	115
Boston, Concord & Montreal....	43	43
Nashua & Lowell.....	108	108½
Fall River Railroad.....	92½	92½
Sullivan Railroad.....	19	20
Manchester and Lawrence.....	90	90
Worcester and Nashua.....	51	51

Indiana.

Lawrenceburgh and Upper Mississippi Railroad.

The immediate object of this company is to build a road from Lawrenceburgh, on the bend of the Ohio, 20 miles below Cincinnati, to Indianapolis, though its title indicates a more western terminus. The length of this line is 90½ miles, making the whole distance between Cincinnati and Indianapolis 110½ miles. The portion between Cincinnati and Lawrenceburgh, the surveys for which are now being made, will be built by the Ohio and Mississippi railroad company. The line of this road will run through Greensburgh, the county seat of Decatur, and Shelbyville, the county seat of Shelby county. It will form a very direct, and for many years to come, if not always, the shortest line of railroad between Indianapolis and Cincinnati, and the route for a large portion of the trade between Indiana and the latter city. An examination of a map will show its very favorable position in this respect.

The grading of this road from the Ohio river to Shelbyville, a distance of 64 miles, is now under contract, and about 18 miles of the line is ready for the iron. This distance, which is by far the most expensive portion of the line, carries it to the summit of the descending ridge, between the Ohio river and the table lands beyond. When this point is gained, the construction of the remaining portion will be an easy task.

The present available means of the company amount to about \$400,000. This sum will be largely increased as the work progresses. Sufficient can be raised along the line of the road to prepare it for the iron, which the company, we presume, propose to purchase with the proceeds of their bonds.

This road will traverse what is known to be one of the best portions of Indiana. Its friends claim it to be the appropriate, as it will be the shortest route, by which the trade and travel of that State can reach Cincinnati; and will also form a part of the trunk line between that city and the South Shore of Lake Michigan, which must always be one of the most important routes in the United States. In this direction, the Lafayette road is the natural extension. It will also form a part of the shortest through line which for years can be made between Cincinnati and St. Louis. The great through line of travel between these cities will always, we have no doubt, be through Indianapolis. The completion of the Ohio and Mississippi road, must, for aught we see, be indefinitely postponed, unless Illinois changes her present "protective policy," as it is termed, which at present refuses a charter for any line below the Terre Haute and Alton railroad.

North Carolina.

At the recent session of the legislature of this State, the following acts in relation to railroads were passed, viz: an act authorising the Seaboard and Roanoke railroad company to issue bonds to the amount of \$400,000, at seven per cent. interest, payable in the city of New York in 1860.

2d. Authorising the Wilmington and Raleigh railroad company to increase its stock to the sum of \$2,500,000.

3d. To incorporate the Newbern and Central railroad company, for the purpose of constructing a railroad from the town of Newbern to where the North Carolina railroad crosses Neuse river.

4th. To incorporate the Roanoke Valley railroad company to construct a road from Clarksville, Va., to the Raleigh and Gaston road, to connect with the same in the vicinity of Ridgeway.

Virginia.

The railroad interest seems to be predominant in this State. Against the recommendation of the Governor, in his recent message, the Legislature have just decided to subscribe two-fifths of the capital stock of \$800,000 of the Manassas Gap railroad company, which is engaged in constructing a road from Alexandria into the valley of Virginia, above Winchester. At the present session, the Winchester interest defeated a bill giving the aid now granted. The amount subscribed by the State will secure the completion of the work into the valley, which will in time undoubtedly be extended to Staunton.

The State has also subscribed the sum of \$300,000 to the South Side railroad, which extends from Petersburg to Lynchburgh. This amount will be ample, with the means at command of this company, to complete the road. The line of this work follows nearly a west course. It traverses one of the best portions of the State, and is regarded a very important work for Petersburg, in bringing her into direct connection with the Virginia and Tennessee railroad, and the great southern line of which that is an important part.

Another very important movement is the granting a charter to build a road from the Baltimore and Ohio railroad direct to Parkersburgh, on the Ohio. The Wheeling interest has heretofore been

strong enough to defeat this charter. This new extension gives symmetry and shape to the whole line of railroad from Baltimore to the Ohio river, and is of immense importance, both to that city, and to the Baltimore and Ohio railroad. We can have no doubt but that company will take measures to secure its speedy construction; as it will open, in connection with the Hillsboro' and Belpre lines in Ohio, a continuous and a very direct route to Cincinnati.

All the great lines of railroad in progress in the State of Virginia with the exception of the extension of the Central, from Staunton to the Ohio, have now secured the aid of the State, sufficient to secure their vigorous prosecution and speedy completion. Whether the Central will yet succeed in obtaining a like aid remains to be seen. Virginia is now in a fair way to be pretty well off for railroad accommodations. These will give an immense impulse to all her interests, and we may soon expect to see that State taking a start, which upon every principle, should again place her where she once was, at the head of this great confederacy.

Ohio.

The Columbus, Piqua and Indiana Railroad commences at the Indiana State-line, (from which point it is carried to Winchester, where it forms a junction with the Indiana and Bellefontaine road leading westward—this junction line is now under contract,) and runs a due east course to the city of Columbus, the capital of Ohio, where it connects with the Cleveland and Columbus, and Columbus and Wheeling roads. At Greenville, the county seat of Darke county, it intercepts the Greenville and Miami road, extending to this place, (the link between Dayton and Greenville of 34 miles being nearly completed.) At the city of Piqua it intersects the Miami Extension Canal, the great water communication between the Ohio river and Lake Erie, having its termini at Cincinnati and Toledo. At Urbana, the capital of Champaign county, it intersects the Mad River and Lake Erie, and at Columbus the Cincinnati and Xenia roads. Thus it is seen, that at four different points, on its length of 86 miles, are met the leading thoroughfares ranging the State from north to south. This link, it may be noticed, as an intercepting or intersecting line, is characteristic of nearly every other link composing this great central chain from the Ohio to the Mississippi river. This fact attending its position, clearly indicates a large and perpetual support for itself from foreign sources. The district of country through which the Columbus, Piqua and Indiana road passes, is not excelled for fertility of soil, extent of cultivation, and abundance of crops and stock, by any other in the State. The numerous valley streams including Stillwater, Miami river, Mad river and its tributaries, which drain this section of country, afford every facility for a large milling business, and every inducement afforded for a most extended trade and agriculture. Add to these, the large population of both town and county, and their extent and diversity of commerce—we see that every element of a successful traffic exists. This link, considering the lateness of its projection, is in rapid progress of construction, with the most flattering prospects of an early completion, with little or no accompanying embarrassments.

The subscriptions of stock in this road, both public and private, are nearly sufficient to prepare it for the iron, and are constantly increasing. The

Engineer, A. G. Conover, Esq., estimates the graduation of the road at \$1,000 per mile. At the letting of 22½ miles in December last, contracts were made much below this estimate, and this section of the road is considerably more expensive than the average of the whole line. At this letting a large portion of the stock and bonds of the company were taken by the contractors at par. The other section, of 11 miles, to complete the connection between the Mad river railroad, at Urbana, and the Miami Extension Canal, at Piqua, is about to be placed under contract, so as to put the line between these two great thoroughfares in working order at an early day. The right of way has been mostly secured along the entire line, and which has been in many instances donated, or compensated for by stock of the company.

Another link of 20 miles, between Greenville, Ohio, and Winchester, Indiana, connecting this line with the the Indiana lines of railroad, is under contract. This leaves only 14 miles of the west end of this road not under contract. The entire line being surveyed and located, those portions not yet worked, will be put in preparation for letting as early as practicable.

Missouri.

This State is about to lend its credit to the amount of \$3,000,000 to aid the construction of two great lines of railway across it, one starting from the Mississippi river at Hannibal, and the other from St. Louis. This aid will secure the immediate construction of two lines of railroad to the western limits of the settled portion of the Mississippi valley.

Private enterprise will thus be adequate to the construction of railroads through all the settled portions of the territory between the Mississippi and the Pacific coast. Beyond this the general government must aid in their extension. While Mr. Whitney has been besieging government for a sanction of his mammoth scheme of speculation, railroads have been projected and are in progress which will reach some 500 miles west of his proposed terminus! The idea that government will now aid a work commencing at Lake Michigan, to run for this distance along side with lines already in progress, and which will be completed before the first blow can be struck upon the new one, is too absurd to be entertained for an instant.

The action of Missouri will give a new importance to the lines of railroad in Ohio, Indiana and Illinois, and will add not only to the value of the stocks, but will tend to give them a much higher place in the public estimation.

Wabash and Erie Canal.

The Cincinnati Gazette gives the annexed abstract of the annual report of the Trustees of the Wabash and Erie Canal: This great work of internal water communication, is now completed between Toledo, Ohio, and Point Commerce, Indiana—giving a continuous line of canal of 352 miles—268 miles in the State of Indiana, and 84 miles in Ohio. The continuation of the line from Point Commerce to Evansville, on the Ohio river, a distance of 141 miles, is all under contract—an effective force of 2,000 men has been employed upon it the past season, and its final completion in the fall of 1852 placed beyond a doubt.

This great work, so soon to be completed, will be 463½ miles in length—the largest work of the kind ever undertaken by any State, in the American Union—the largest continuous artificial channel of communication on the European or Ameri-

can continents. It passes through a country of unrivalled productiveness in the substantial articles of human food, and capable of supplying a dense and active population.

From the annual report of the Trustees to the General Assembly of the State of Indiana, for 1850, we learn officially, that the canal was opened between the State-line and Lafayette on the 18th of March last, and south of that point on the first of April. It was closed on the 8th of December, having been open for navigation 261 days. From the State-line to Coal Creek, a distance of 189 miles, navigation was suspended during the season less than *two days*, and the breach which occasioned it was repaired at an expense of about two hundred dollars. Several large breaches occurred on other divisions of the canal, but taking the average cost per mile of the repairs given, during the last three years, it is less than any similar canal in the country. Merchandise, purchased in New York, was transported the past season, to Terre Haute in twenty-two days.

The revenue of the canal within the limits of Indiana the past year, amounted to \$157,158 38, being an increase of \$22,499 38 over the previous year.

The work upon the unfinished portion of the line was quite suspended for a time the last season, by the prevalence of the cholera, and 150 laborers fell victims to it. The liabilities of the Trustees for canal work, when the unfinished divisions shall be completed, will amount to \$777,183 25. The final cost of the 190 miles under construction, as stated by J. L. Williams, the Chief Engineer, will be \$2,012,085 17, while the estimated cost was \$1,910,371.

We said the repair service on this canal was less than on any similar work. From the Engineer's statement, it appears that the average cost of repairs per mile, for the past three years on this canal has been \$188—on the Ohio canal the average annual cost of 15 years was \$394 per mile. On the Miami and Erie canal and branches, the yearly average for 15 years has been \$361 per mile, and taking the entire system of canal navigation in New York for 32 years, the average annual cost per mile has been \$645.

The Trustees have sold, during the past year, canal lands as follows: in the Vincennes district, 25,468 22 acres, for \$52,983 76; at the Land Office at Logansport, 33,985 32 acres were sold, for which \$21,675 16 was received in cash, and the balance on credit. And there was received for lands sold east of Tippecanoe, the past year, the sum of \$31,800 17.

The value of the canal lands unsold, and the amount due on sales made, amounts, in the aggregate, to \$1,249,030 59.

Ohio.

Bellefontaine and Indiana Railroad.—The clearing and graduation on the whole line of the Bellefontaine and Indiana railroad, 118 miles, are now under contract, and in the hands of responsible men.

This road connects at its western terminus with the Indiana railroads, now rapidly advancing to completion, and crosses about midway the railroad which has been opened several years between Cincinnati and Sandusky city.

At Galion, the Eastern terminus, it connects with the Cleveland, Columbus and Cincinnati railroad, now opened and in operation from Cleveland to Galion, 79 miles, and to be entirely finished with-

in a few weeks between Cleveland and Cincinnati. It also connects at its eastern terminus with the Ohio and Pennsylvania railroad, extending 185 miles to Pittsburg.

The Bellefontaine and Indiana railroad is an indispensable link in the great railroad route between New York and Boston and St. Louis, and will be the means of opening to the States of New York and New England a magnificent avenue to the productive and almost illimitable valleys of the great Mississippi basin.

It is confidently expected that the great New York and Erie railroad will be completed from Piermont to Dunkirk next spring. From Dunkirk to the Pennsylvania line, and thence to Erie, the work is all under contract, and will soon be finished. From Erie to Cleveland, along the lake shore, the line is in the hands of two companies, under contract, and to be opened in 1852. From Cleveland to Galion, the line is in operation. From Galion to the Indiana State-line, the work is under contract, and its completion anticipated in 1852.—Across the State of Indiana, passing through Indianapolis, the line belongs to two companies, who have a portion in operation, and all to be finished as far as Terre Haute, on the Wabash river, in 1852. From Terre Haute to St. Louis, the surveys have been made, and it is expected that the work will be put under contract this season, to be finished in 1853, so that in two years there will be a continuous railroad from Piermont, and from New York city, by way of the Hudson River railroad, to Terre Haute, 966 miles, and in three years, to St. Louis, 1136 miles.

This grand trunk line will be intersected at numerous points, from one and to the other, with branch lines of railroads and plank roads, pouring into it the commercial tributes of a population of several millions, whose number the construction of these improved modes of conveyance must greatly augment.

The New York and Erie railroad, is a work of considerable cost, but the business daily accumulating upon it as it progresses westward, link after link towards completion, should satisfy its most sanguine friends, that its ultimate entire success is certain. Its continuation westward from Dunkirk, through Pennsylvania, Ohio, Indiana and Illinois, to St. Louis, and along the lake shore from Cleveland to Chicago, must throw upon it an immense additional tonnage, and a heavy increase of passengers; and these western works, costing only from \$15,000 to \$20,000 per mile, bid fair to be among the most profitable railroads in the world.

With the greatest agricultural region of our country at one end, and the largest manufacturing district at the other, this long and continuous chain of railways must prove eminently successful, and every link in it profitable.

New York.

Canandaigua and Corning Railroad.—This road runs from Canandaigua to Jefferson, at the foot of Seneca Lake, a distance of 45 miles. The capital stock of the company is \$1,600,000. The actual cost of the road is not expected to exceed one half that sum. The amount of stock subscribed is about \$450,000. The company pay for their iron in bonds. The road is expected to be completed within the year.

Rochester and Niagara Falls Railroad.—We learn from the Rochester Democrat, that ground was broken on this road at Spencerport, on Thursday, by Mr. Otis, of Gates, who has the contract

for the section between Rochester and Brockport. The work will be pushed along vigorously, after the machinery once gets fully in motion. The company expect to run a locomotive over the road from Rochester to the Suspension bridge on the 4th of July, 1852. Mr. John N. Drummond, city clerk, has been appointed secretary of the company.

Kentucky.

Railroad from Louisville to Nashville.—The people on the line of this road are moving in a most energetic manner in the preliminary steps of construction, and are holding meetings in the various counties through which it is to run. These bodies propose to subscribe a large amount to the stock, in their corporate capacity. This road is certain to be built at an early day, and as rapidly as the means of the company can be economically expended. The route is an easy one; and the road, when completed, will connect the southern Atlantic cities with the Ohio, and realise the old idea of the Charleston and Cincinnati railroad, once a favorite project with South Carolina, and upon which a good deal of money was expended in preliminary surveys. The present route, however, occupies a very different line from the one first proposed.

The two other projects in that State now occupying a great deal of attention, are the Covington and Lexington, and the Maysville and Lexington railroads. These, the latter particularly, are making good progress. A portion of the former is already under contract, though we should judge the Maysville line to be much the best off for means. This line we believe has already secured means sufficient for its construction, with the use of such bonds as it may be prudent to issue. The county of Mason, of which Maysville is the county seat, has just voted a subscription of \$100,000. The friends of this line are indebted in no small degree for their success, to their Engineer, L. L. Robinson, Esq., who has thoroughly canvassed the general subject of the importance of railroads before the people, as well as performed his appropriate duties as engineer.

Railroads in Virginia.—In the House of Delegates of Virginia on Monday, the bill to incorporate the Northwestern (or Parkersburg) railroad was passed—yeas 74, nays 16. Previous to the passage of the bill a "compromise rider," agreed upon by the Northwestern members, was adopted, providing for the construction of a railroad from Three Forks, on the Baltimore and Ohio railroad, to Parkersburg, but prohibiting the use of the road until twelve months after the Baltimore and Ohio railroad shall have graded the road for two tracks and at least laid down one of them, from the point of intersection to the city of Wheeling.

The Richmond Whig, referring to this bill, has the following remarks:—

THE RIGHT OF WAY.—The important contest between the city of Wheeling and certain counties of the Northwest, which desire the right of constructing a connection with the Baltimore & Ohio railroad, will be permanently decided by the passage of a bill engrossed yesterday. This bill incorporates the Northwestern railroad company under certain conditions. Those conditions require that the Baltimore and Ohio railroad shall complete a single track, with the graduations, bridges, tunneling, and masonry necessary for a double track to Wheeling, before the Northwestern railroad company shall be authorized to use their road. The bill also provides that the Northwestern railroad should not make a double track until the Baltimore and Ohio railroad should complete a double track to Wheeling. It is also provided that the western terminus of the Northwestern railroad

shall be at some point on the Ohio river, not above Parkersburg.

The Flour Trade.

The Mississippi River and New York Canals.—What constitutes the largest portion of the exports of the Northern States is "human food," and as these exports are chiefly made by way of Mississippi river and the New York canals, it may be interesting to our readers to see what proportion our inland waters bear to that big ditch.

We copy from Hunt's Merchants' Magazine for February, the following comparative table of the aggregates of the last three years, (1848, 1849 and 1850) receipts at New Orleans to 30th September in each year; and at the tide water, at the head of the Hudson, to the close of navigation of the canals:—

	N. Orleans.	Albany and Troy.
Flour, bbls.....	2,312,121	8,636,207
Pork, do.....	1,536,817	211,018
Beef, do.....	200,901	264,072
Wheat, bu.....	852,497	8,798,759
Corn, do.....	9,758,750	11,178,223
Other grain, do.....	6,350,151	11,210,239
Bacon, lbs.....	135,622,515	26,364,156
Butter, do.....	6,215,070	61,695,942
Cheese, do.....	8,955,880	97,596,653
Lard, do.....	292,110,060	27,137,176

From the above it appears that the Mississippi has the advantage in the products of swine, and that our canal carries more of the other articles of food.

From Lake Superior.

The Green Bay Advocate, speaking of the mining operations on Lake Superior, says that, in order to overcome the difficulty of cutting the copper into moveable masses, a gigantic furnace is now being constructed to melt them and cast them in such pieces as may be handled. The plan is tho't to be feasible, and, if successful, promises to lessen very much the expense of mining.

The vestiges of apparently very ancient mining operations continue to be met with, and in greater number and extent than any previously discovered. The age of these traces is supposed to be at least two thousand years; but their connection with a particular race has not been ascertained. There are indications, however, that the copper was carried off from the mines by the way of St. Mary's river and the lakes. The excavations found are, in some cases, such as could only have been effected by years of labor, and they have very much facilitated the miners, as well as pointed them to the best locations. It is said that a road from Green Bay to the most southerly point of Keweenaw, would be less than two hundred miles in length, and shorten the present route at least one hundred miles.

Census of Kentucky.

Total population in the State.....	993,344
Total number of free inhabitants.....	782,207
" slaves.....	211,237
" deaths during the year....	15,271
" farms in the State.....	82,059
" dwellings.....	130,743
" establishments of productive industry.....	3,495
Total population in the State in 1840.....	779,828
Total No. of free inhabitants in 1840.....	597,570
" white.....	590,293
" slaves.....	182,258
" free colored persons in 1840....	7,317
Total increase of inhabitants in ten years.....	213,516
Increase of free inhabitants.....	184,437
" slaves.....	28,979
Representative population in 1840.....	699,608
" " 1850.....	908,849

If the ratio goes up to 100,000, Kentucky will lose a member of Congress. If it does not go above 95,000, she will retain her present representation of ten members in the house.

Virginia.

Richmond and Danville Railroad.—We have received the third annual report of the directors of this company, submitted to a meeting of the stockholders, held in Richmond on the 11th of December last.

Since the preceding annual report the whole line has been located to Danville. The portion of the route which has recently been located leaves the Staunton river above the mouth of the Little Roanoke river, pursues a very direct course, about S. 32° W., and falls into the Dan river low lands near South Boston; it then keeps on or near the Dan river bottom lands, until it reaches Upper Double Creek, the valley of which furnishes an easy grade to the summit, dividing it from Sandy Creek: it here takes a course about S. 81° W., and after crossing Sandy and Cane Creeks, descends by Fall Creek (which it crosses near its mouth) to the Dan river, and crosses said river a little below the corporation line of Danville.

The total length of the road will vary but little from 140 miles, including the bridges at Richmond and Danville.

The whole amount expended on account of the construction, on the 30th of Sept. last, was as follows:

Walling and grading Richmond depot site.....	6,762 46
James river bridge, including foundations and temporary track for transportation of materials.....	90,823 90
Graduation and masonry east of Staunton river.....	317,102 94
Graduation and masonry west of Staunton river.....	22,841 43
Materials for permanent way.....	333,602 25
Laying permanent way.....	6,333 43
Water-stations, sheds, &c.....	192 51
Total.....	\$777,758 92

	Miles.
Length of road and branches graded.....	29.5
Length of superstructure laid with edge rail.....	13.
Length of road partially graded, east of the Staunton river.....	17.5
Length of road partially graded, west of the Staunton river.....	3.

The following table exhibits the amount of work that had been done, and that remaining undone, on the 30th day of September, 1850, to complete the graduation and masonry of the Richmond and Danville railroad to Staunton river:—

Description.	Amount done.	Am't to be done.	Total.
	Cubic yds.	Cubic yds.	Cubic yds.
Earth excavation.....	1,660,000	1,638,000	3,298,000
Rock excavation.....	27,615	14,350	41,965
Masonry.....	20,155	10,180	30,335
	Lin. feet.	Lin. feet.	Lin. feet.
Bridging.....	2,370	360	2,730
Ditching.....	184,360	559,790	744,150
Tresseling.....	2,930		

West of the Staunton river, the exact location of the road has not been made upon the ground, except for about three miles nearest to Danville; the quantities, therefore, in the following table, are only approximate:—

Description.	Am't done.	Am't to be done.	Total.
	Cubic yds.	Cubic yds.	Cubic yds.
Earth excavation.....	118,550	1,261,220	1,379,770
Rock excavation.....	250	22,450	22,700
Masonry.....	540	12,100	12,640
Bridging.....		\$70,000	\$70,000
Ditching.....	1,320	180,000 lin. feet.	

The item for bridging is made up for the struc-

tures required to cross the Staunton, Bannister and Dan rivers—Fall, Sandy and Birch creeks.

Condition of the way and works on Sept. 30th, 1850. Richmond depot site, partially walled and graded.

James river bridge finished, with the exception of 600 feet of coping over connecting walls and arches.

Tunnel under Richmond and Petersburg railroad finished.

Materials for permanent way, purchased and on hand, viz:

Plate rail for 75 miles, equal to 3,000 tons.
Pine string-pieces for 69 miles of road.
Sills or cross-ties for 51 miles, of which 59,946 are for plate rail, and 24,540 for edge rail superstructure.

It is confidently expected that Messrs. R. Harvey & Co. will, before the end of the year, finish the grading and masonry to section 39, inclusive, which will give over 45 miles of road graded, and will leave 32 miles prepared to receive its superstructure, and for which heavy rails for only 15 miles have been contracted for. If the edge rail is to be laid west of the Appomattox river, measures to procure a further quantity should forthwith be taken.

There has been expended for the purchase of furniture for the road, the sum of \$66,967 97, of which \$19,097 55 are on account of sixty iron coal cars.

The total amount of receipts of the company, from all sources, since its organization, are \$953,406 31. The total expenditures have been \$995,451 97. The debt of the company is \$47,580 42, and the cash in the treasury amounts to \$5,531 94.

The whole amount of stock subscribed is \$1,298,900 00; of this \$269,945 21 is still unexpended. The capital stock of the company is fixed at \$1,500,000; three-fifths of which are subscribed by the State. In addition to this the State has guaranteed the bonds of the company to be used in the purchase of iron for the amount of \$200,000.

Indiana.—The following are the leading statistics of this State, as shown by the recent census:—

Number of houses.....	186,182
Number of families.....	187,618
Population.....	990,258
Value of farms.....	\$128,325,552
Value of farming implements.....	6,648,799
Capital invested in manufactures.....	7,235,220
Value of manufactured articles.....	19,199,681
Number of colleges.....	83
Students.....	6,290
Number of common schools.....	5,899
Value of real estate owned.....	170,000,000
Number of newspapers.....	98
Circulation.....	67,924
Churches.....	1,899
Value of church property.....	1,499,711
Value of home manufactures.....	1,682,918

Population of Maine.—Table exhibiting the population of Maine at different periods:

Date.	Pop.	Increase.	Ratio per cent of In.
1636	1,450		
1653	2,100	650	45
1763	5,500	3,400	162
1735	9,000	3,500	63
1743*	12,000	3,000	33
1761	17,500	5,500	45
1764	24,020	6,520	37
1784	57,060	32,980	129
1790	96,500	39,540	69
1800	151,719	55,179	57
1810	228,705	76,986	50
1820	298,335	69,630	30
1830	399,995	101,660	33
1840	499,921	99,926	25
1850	583,026	83,105	16

*From 1636 to 1743 there was no official enumeration made, and the census, during that period are based upon the statement of different historians.

NAME.	Road.																	Rate per mile charged for passengers.																
	Length of road in miles.	Length of road laid.	Length of double track, including sidings.	Length of branches owned by company.	Length of double track on branches.	Weight of rail per yard on main road.—lbs.	No. engine houses and shops.	No. of engines.	No. passenger cars, 1st class.	No. passenger cars 2d class & emigrant.	No. baggage, mail and express cars.	No. freight cars.	Speed in miles per hour of ordinary passenger trains, including stops.	Speed in miles per hour of ordinary passenger trains, when in motion.	Speed in miles per hour of express trains including stops.	Speed in miles per hour of express trains when in motion.	Speed in miles per hour of freight trains including stops.	Speed in miles per hour of freight trains when in motion.	Weight in tons of passenger trains, excluding passengers and baggage.	Weight in tons of freight trains, excluding freight.	1st class.	2d class.	3d class.											
Albany and Schenectady.....	17	17	9	1	60	3	3	736	33	45	34	25	25	28	28	15	15	15	78	150	3	2	2	63,012	2,330	18,015	3,265	1,113	3,018	18,504	16,732	12	12	12 months
Albany and W. Stockbridge.....	384	384	24	24	56	2	2	6	8	10	43	25	30	30	32	14	15	15	78	150	3	2	2	170,586	7,397	23,810	76,926	4,408	21,975	9,816	26,254	12	12	12 months
Attica and Buffalo.....	314	314	24	24	56	2	2	6	8	10	43	25	30	30	32	14	15	15	78	150	3	2	2	24,184	2,346	7,439	989	1,005	1,089	7,734	3,579	1	2	12 months
Auburn and Rochester.....	78	78	857	76	67	4	19	20	100	154	21	21	27	334	12	15	15	724	1034	34	2	14	34,145	3,383	1,067	1,095	24	1,349	892	1,076	3	5	10 months	
Auburn and Syracuse.....	22	22	3	3	57	2	3	6	5	3	7	22	30	30	30	12	14	15	60	113	2	2	8,886	3,383	1,067	1,095	24	1,349	892	1,076	3	0	12 months	
Buffalo and Niagara Falls.....	35	35	3	3	58	1	3	4	2	45	24	24	28	38	32	14	15	15	78	150	3	2	2	23,809	2,854	1,278	3,105	1,100	8,287	2,708	4,447	12	12	12 months
Cayuga and Susquehanna.....	35	35	3	3	58	1	3	4	2	45	24	24	28	38	32	14	15	15	78	150	3	2	2	5,745	111	856	139	97	2,161	1,590	788	16	3	9 months
Chemung.....	31	31	1	1	56	2	4	4	2	284	20	25	30	30	30	12	14	15	60	113	2	2	2	23,809	2,854	1,278	3,105	1,100	8,287	2,708	4,447	12	12	12 months
Hudson and Berkshire.....	143	143	38	38	70	5	15	14	15	15	15	15	15	15	15	15	15	15	15	15	15	15	5,745	111	856	139	97	2,161	1,590	788	16	3	9 months	
Long Island.....	143	143	38	38	70	5	15	14	15	15	15	15	15	15	15	15	15	15	15	15	15	15	5,745	111	856	139	97	2,161	1,590	788	16	3	9 months	
New York and Erie.....	143	143	38	38	70	5	15	14	15	15	15	15	15	15	15	15	15	15	15	15	15	15	5,745	111	856	139	97	2,161	1,590	788	16	3	9 months	
New York and Harlem.....	143	143	38	38	70	5	15	14	15	15	15	15	15	15	15	15	15	15	15	15	15	15	5,745	111	856	139	97	2,161	1,590	788	16	3	9 months	
New York and New Haven.....	143	143	38	38	70	5	15	14	15	15	15	15	15	15	15	15	15	15	15	15	15	15	5,745	111	856	139	97	2,161	1,590	788	16	3	9 months	
Norfolk.....	118	118	5	5	61	6	10	6	2	140	22	22	23	23	23	12	13	13	60	113	2	2	2	131,311	23,876	31,793	11,079	1,054	28,991	18,730	15,787	13	4	12 months
Oswego and Syracuse.....	35	35	14	14	57	2	4	5	2	28	20	25	30	30	30	12	14	15	60	113	2	2	2	7,949	821	577	3,717	117	462	1,445	1,007	0	0	12 months
Rensselaer and Saratoga.....	254	254	14	14	58	2	4	5	2	28	20	25	30	30	30	12	14	15	60	113	2	2	2	10,610	990	1,249	667	302	1,734	3,389	2,979	0	0	12 months
Rochester and Syracuse.....	104	104	1134	94	58	2	4	5	2	28	20	25	30	30	30	12	14	15	60	113	2	2	2	9,604	713	206	719	32	444	906	1,393	0	0	12 months
Saratoga and Schenectady.....	22	22	2	2	56	2	4	5	2	28	20	25	30	30	30	12	14	15	60	113	2	2	2	4,434	713	206	719	32	444	906	1,393	0	0	12 months
Saratoga and Washington.....	22	22	2	2	56	2	4	5	2	28	20	25	30	30	30	12	14	15	60	113	2	2	2	4,434	713	206	719	32	444	906	1,393	0	0	12 months
Schenectady and Troy.....	204	204	55	55	56	2	4	5	2	28	20	25	30	30	30	12	14	15	60	113	2	2	2	17,031	261	6,311	4,891	378	1,757	1,956	1,477	2	1	12 months
Syracuse and Utica.....	53	53	55	55	56	2	4	5	2	28	20	25	30	30	30	12	14	15	60	113	2	2	2	29,211	2,803	9,503	12,299	706	4,850	879	7,946	1	1	12 months
Tonaawanda.....	434	434	3	3	56	2	4	5	2	28	20	25	30	30	30	12	14	15	60	113	2	2	2	38,998	2,803	9,503	12,299	706	4,850	879	7,946	1	1	12 months
Troy and Greenbush.....	63	63	88	88	56	2	4	5	2	28	20	25	30	30	30	12	14	15	60	113	2	2	2	98,695	6,201	27,955	13,337	2,250	11,118	25,987	11,806	4	4	30 days
Utica and Schenectady.....	78	78	88	88	56	2	4	5	2	28	20	25	30	30	30	12	14	15	60	113	2	2	2	98,695	6,201	27,955	13,337	2,250	11,118	25,987	11,806	4	4	30 days
Watertown and Rome.....	97	97	2	2	56	2	4	5	2	28	20	25	30	30	30	12	14	15	60	113	2	2	2	680	38	00	00	15	576	47	4	4	4	30 days

ENGINEERS.

Atkinson, T. C.,
Alexandria and Orange Railroad, Alexandria, Va.

Clement, Wm. H.,
Little Miami Railroad, Cincinnati, Ohio.

Cozzens, W. H.,
Engineer and Surveyor, St. Louis, Mo.

Alfred W. Craven,
Chief Engineer Croton Aqueduct, New York.

Floyd-Jones, Charles,
Alton and Sangamon Railroad, Alton, Illinois.

Gzowski, Mr.,
St. Lawrence & Atlantic Railroad, Montreal, Canada.

Grant, James H.,
Nashville and Chattanooga R. R., Nashville, Tenn.

S. W. Hill,
Mining Engineer and Surveyor, Eagle River, Lake Superior.

Holcomb, F. P.,
Southwestern Railroad, Macon, Ga.

Latrobe, B. H.,
Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,
Buffalo and Conhocton Valley Railroad, Bath, N. Y.

Morris, Elwood,
Schuylkill Navigation, Schuylkill Haven, Pa.

Nott, Samuel,
Lawrence and Manchester Railroad, Boston.

Prichard, M. B.,
East Tennessee and Georgia R. R., Cleveland, Tenn.

W. Milnor Roberts,
Bellefontaine and Indiana Railroad, Marion, Ohio.

Roberts, Solomon W.,
Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Sanford, C. O.,
South Side Railroad, Virginia.

Steele, J. Dutton,
Pottstown, Pa.

Trautwine, John C.,
Civil Engineer and Architect, Philadelphia.

Tinkham, A. W.,
United States Fort, Bucksport, Me.

Troost, Lewis,
Alabama and Tennessee Railroad, Selma, Ala.

Whipple, S.,
Civil Engineer and Bridge Builder, Utica, N. Y.

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PLUSHES

FOR

Railway Cars & Omnibuses.**F. S. & S. A. MARTINE,**

112 WILLIAM ST., NEAR JOHN.

ARE now receiving a large and complete assortment of Plain and Figured PLUSHES, of their own importation, which will be sold at the lowest market price, viz: Crimson, Maroon, Scarlet, Green, Blue, Purple, etc.

ALSO—CURLED HAIR, the best manufactured in market.

To Railroad Companies, Machinists, Car Manufacturers, etc., etc.**CHARLES T. GILBERT,**

NO. 80 BROAD ST., NEW YORK,

IS prepared to contract for furnishing at manufacturer's prices—
Railroad iron,
Locomotive Engines,
Passenger and Freight Cars,
Car Wheels and Axles,
Chairs and Spikes.

Orders are invited; and all inquiries in relation to any of the above articles will receive immediate attention.

Manufacture of Patent Wire ROPE AND CABLES,

For Inclined Planes, Suspension Bridges, Standing Rigger, Mines, Cranes, Derrick, Tillers, &c., by
JOHN A. ROEBLING, Civil Engineer,

TRENTON, N. J.

FORGING.**Ranstead, Dearborn & Co.,**MANUFACTURERS OF
LOCOMOTIVE CRANKS AND CAR AXLES,

ALSO

WROUGHT IRON SHAFTING,

And All Kinds of Hammered Shapes.
Office 25 Foster's Wharf, Boston.**Samuel D. Willmott,**MERCHANT, AND MANUFACTURER OF
CAST STEEL WARRANTED SAWS,

—AND FILES—

IMPORTER OF THE
GENUINE WICKESRLY GRINDSTONES
NO. 8 LIBERTY STREET,
NEW YORK.

Railroad Instruments.

THEODOLITES, TRANSIT COMPASSES, and Levels, with Fraunhoffer's Munich Glasses, Surveyor's Compasses, Chains, Drawing Instruments, Barometers, etc., all of the best quality and workmanship, for sale at unusually low prices, by
E. & G. W. BLUNT,

No. 179 Water St., cor. Burling Slip,
New York, May 19, 1849.**IRON.****Iron.**

Pig Iron, Anthracite and Charcoal; Boiler and Flue Iron, Spring and Blistered Steel, Nail Rods, Best Refined Bar Iron, Railroad Iron, Car Axles, Nails, Stove Castings, Cast Iron Pipes of all sizes, Railway Chairs of approved patterns for sale by
COLEMAN, KELTON & CAMELL,

109 N. Water St., Philadelphia.

Stickney & Beatty, DEALERS IN IRON AND IRON MANUFACTURERS.

AGENTS for the Balt. City Rolling Mill, from which establishment they are prepared to furnish Ellicott's round, square, and flat bar iron, puddled and charcoal boiler plates and billet iron—also agents for the sale of the Laurel, Gunpowder and Locust Grove (Balt.) forge pig irons, Locust Grove and Laurel Irons for car wheels, Caledonian boiler blooms made from cold blast iron, Old Colony and anti-Eatam nails, Wm. Jessop & Son's steel, Coleman's blister steel and nail rods, sheet, hoop, band, oval and common English iron.

Nos. 18 and 20 South Charles st., Baltimore.

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. J. F. WINSLOW, President

Troy, N. Y.

ERASTUS CORNING, Albany
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md

November 6, 1848.

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phoenix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehanna river; which two establishments are now turning out upwards of 1800 tons of finished rails per month.

Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.

REEVES, BUCK & CO.

45 North Water St. Philadelphia.

March 15, 1849

LAP—WELDED WROUGHT IRON TUBES

FOR

TUBULAR BOILERS,

FROM ONE AND A QUARTER TO SEVEN INCHES IN DIAMETER.

THE ONLY Tubes of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER & SON, Patentees,
28 Platt street, New York.**Railroad Iron.**

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron.

THOMAS B. SANDS & CO.,

February 3, 1849.

73 New street,
New York.**Iron Store.**

THE Subscribers, having the selling agency of the following named Rolling Mills, viz: Norristown, Rough and Ready, Kensington, Philadelphia, Pottsgrove and Thorndale, can supply Railroad Companies, Merchants and others, at the wholesale mill prices for bars of all sizes, sheets cut to order as large as 58 in. diameter; Railroad Iron, domestic and foreign; Locomotive tire welded to given size; Chairs and Spikes; Iron for shafting, locomotive and general machinery purposes; Cast, Shear, Blister and Spring Steel; Boiler rivets; Copper; Pig Iron, etc., etc.

MORRIS, JONES & CO.,

Iron Merchants,

Schuylkill 7th and Market Sts., Philadelphia.
August 16, 1849. 1y33**Glendon Refined Iron.**

Round Iron, Band Iron, Hoop Iron,
Square " Flat " Scroll "

Axles, Locomotive Tyres,

Manufactured at the Glendon Mills, East Boston, for sale by

GEORGE GARDNER & CO.,
5 Liberty Square, Boston, Mass.

Sept. 15, 1849. 3m37

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head from the excellence of the material always used in their manufacture, and their very general use for rail roads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.

JOHN F. WINSLOW, Agent.

Albany Iron and Nail Works, Troy, N. Y.

The above Spikes may be had at factory prices, at Erastus Corning & Co Albany; Merritt & Co., New York; E. Pratt & Brother, Baltimore, Md.

RAYMOND & FULLERTON, 45 Cliff st.
Bowling Iron. Stamped B.O.
 Railway Tire Bars Rivet Iron
 Locomotive and other Axes Locomotive Frame do
 Boiler Plates Bars,
 and every other description of this superior Iron.

The subscribers, agents for the sale of Bowling Iron, are prepared to execute orders for importation, especially for railway and machinery uses, with despatch from the manufacturers.

RAYMOND & FULLERTON, 45 Cliff st.

Ibbotson, Brothers & Co's CELEBRATED CAST STEEL

Best Cast Steel Royal Improved Files, well known as better adapted for Engineers' and Machinists' purposes than any now in use in the United States.

Every description of Square, Octagon, Flat and Round Cast Steel, Sheet, Shovel and Railway Spring Steel, etc., and Steel to order for any purposes—manufactured at their works in Sheffield—and universally known by the old stamp "Globe."

HENRY I. IBBOTSON, Agent,
 218 Pearl st., New York.

Railroad Iron. SPIKES.

Wrought Iron CHAIRS, New Pattern.

THE Undersigned continues to contract, as usual, for the above articles. The reputation already acquired for their excellent quality is a guarantee that strict attention shall continue to be paid to the wants and interests of purchasers.

CHARLES ILLIUS,
 30 Beaver St., New York

WILLIAM JESSOP & SONS' CELEBRATED CAST-STEEL.

The subscribers have on hand, and are constantly receiving from their manufactory.

PARK WORKS, SHEFFIELD,
 Double Refined Cast Steel—square, flat and octagon. Best warranted Cast Steel—square, flat and octagon. Best double and single Shear Steel—warranted. Machinery Steel—round.

Best and 2d gy. Sheet Steel—for saws and other purposes.

German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.

Genuine "Sykes," L. Blister Steel.

Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by

WM. JESSOP & SONS,
 91 John street, New York.

Also by their Agents—

Curtis & Hand, 47 Commerce street, Philadelphia.
 Alex'r Fullerton & Co., 119 Milk street, Boston.
 Stickney & Beatty, South Charles street, Baltimore.
 May 6, 1848.

Railroad Iron.

B. O. Railway Tires, Railway Wheels,
 Scotch Pig Iron, Tin Plates and Banca Tin,
 Muntz's Patent Metal Sheathing,
 Baltimore Copper.

Contracts for Rails made on behalf of the manufacturers, for delivery at any ports in the United States, at fixed prices.

Bowling Tires and Tire Bars and Scotch Pigs imported to order.

Muntz's Ship-sheathing, and a general stock of Tin Plates and Banca Tin in store, and for sale by

IRONDALE PIG METAL, MANUFACTURED
 and for sale by the Bloomsburg Railroad Iron Co.
 LINDLEY FISHER, Treasurer.
 75 N. Water St., Philadelphia.

Faggotted Car and Engine Axes

FORGED by RANSTEAD, DEARBORN & Co.,
 Boston, Mass.

These Axes enjoy the highest reputation for excellence, and are all warranted.

Railroad Iron.

3,000 TONS C. L. MAKE 63½ lbs. per yard,
 now landing and to arrive.

Also contracts made for future delivery of above superior make English Iron.

300 Tons Banks Best Iron, Round, Square and Flat.
 200 " English Bar " " " "

10 " 9-16 Square Iron for Railroad Spikes.

For sale in lots to suit purchasers by
 DAVID W. WETMORE.

New York, March 26, 1850. 3m

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

JOHNSON, CAMMELL & Co's Celebrated Cast Steel,

AND
 ENGINEERING AND MACHINE FILES,
 which for quality and adaptation to mechanical uses, have been proved superior to any in the United States. Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cyclops Steel Works Sheffield.

JOHNSON, CAMMELL & CO.,
 100 William St., New York.

November 23 1849.

Bowling Tire Bars.

40 Best Flange Bars 5½x2 inches, 11 feet long.
 40 " " 5½x2 " 7 feet 8 in. long.
 40 " Flat " 6x2 " 11 feet long.
 40 " " 6x2 " 7 feet 8 in. long.

Now in store and for sale by
 RAYMOND & FULLERTON,
 45 Cliff street.

Wheel, Forge and Foundry Iron.

LOCUST GROVE Wheel Iron of great strength and superior chilling property.

Balt. Charcoal Forge Iron, from Patuxent, Curtis Creek and Gunpowder furnaces.

Elkridge Foundry Iron, of superior strength and softness. Anthracite and Charcoal Iron from Pennsylvania and Virginia. Gas and Water Pipes, Lamp Posts from Elkridge furnace.

LEMMON & GLENN,
 62 Buchanan's Wharf, Baltimore.

S. S. Keyser & Co., IRON WAREHOUSE,

Corner of South and Pratt Streets,
 BALTIMORE, MD.

Selling Agents for the Rough and Ready Bar Iron and Elk Boiler and Flue Iron Rolling Mills, Sarah and Taylor Furnaces, and Wrightsville Hollow Ware Foundry, and Dealers in Bar and Sheet Iron, and Cast, Sheer, German, Blister, Spring and Electroplated Steel, etc., etc.

Smith & Tyson,

GENERAL COMMISSION MERCHANTS,
 No. 25 South Charles St., Baltimore, Md.

AGENTS for the Celebrated Columbia Pig Iron, suitable for Car Wheels and Chilled Rolls.

Columbia refined Charcoal Blooms; Refined Charcoal Juniata Billet Iron for Wire; Refined Iron for Bridging, of great strength; Cut Nails, Spikes, and Brads; Railroad Spikes and Wrought Chairs. 221f

Tredegar Iron Works.

ROLLING MILL FOUNDRY AND MACHINE SHOPS. The undersigned continues to manufacture at his Works in this city (from best charcoal metal) Bar Iron of every description, embracing—

Rounds and Squares, from ½ to 5 inches diameter. Plates, from ½ to 7 inches, all thicknesses.

Bands and Scrolls, all sizes. Boiler plate and Plough Iron. Railroad and Locomotive Axes and Tires. Locomotive Frames, Spikes and Plates. Hoops, Ovals, Half Ovals, Half Rounds, Angle, T, L, and indeed every description of Iron usually manufactured, all of which he warrants to be equal to any made in this country.

He also manufactures at his Foundry and Machine Shops all descriptions of Railroad Work, say, Locomotives, Railroad Wheels and Axes complete and ready for the road, Railroad Chairs, etc. Also, Marine and Stationary Engines all sizes, Sugar mills and Engines, Horse mills, and every kind of Machinery usually required for the operations of the country.

He has paid particular attention to getting up machinery, etc., for Gold Mine operations, and those in want of such work might find it to their advantage to give him a call.

J. R. ANDERSON.
 Richmond, Va., Sept. 10, 1850.

CUT NAILS OF BEST QUALITY, BAR IRON (including Flat Rails) manufactured and for sale by

FISHER, MORGAN & CO.,
 75 N. Water St., Philadelphia.

Car Wheel Iron.

100 Tons "Columbia" No. 2 Cold Blast Charcoal
 Iron.

300 Tons "Salisbury" No. 1, do. do.
 For sale by CHARLES T. GILBERT,
 No. 80 Broad st.

New York, Sept. 21, 1850.

Railroad Spikes.

THE subscribers are prepared to make and execute contracts for Railroad Spikes of a superior quality, manufactured by the New Jersey Iron Company, at Boonton.

DUDLEY B. FULLER & CO.,
 139 Greenwich st. corner of Cedar.

Railroad Iron.

1650 Tons, weighing about 61 lbs. per yard, 40 tons, weighing about 52 lbs. per yard, and 825 tons, weighing about 53½ lbs. per yard, of the latest and most approved patterns of T rail, for sale by

BOORMAN, JOHNSTON & CO.,
 119 Greenwich street.

New York, Aug. 26, 1850.

N.B.—B., J. & Co are also prepared to take contracts for English rails, delivered in any of the Atlantic ports of the United States.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract to deliver Rails of superior quality, and of any size or pattern, to any ports of discharge in the United States.

COLLINS, VOSE & CO.,
 74 South St.

New York, June 1, 1850.

Spikes, Spikes, Spikes.

ANY person wishing a simple and effective Spik Machine, or a number of them, may be supplied by addressing
 J. W. FLACK,
 March 6, 1850. Troy, N. Y.

Railroad Iron.

2000 Tons, weighing 58 pounds per lineal yard, of the most approved pattern of T rails, in store and to arrive, for sale by

COLLINS, VOSE & CO.,
 74 South St.

New York, June 1, 1850.

Railroad Spikes, Boiler Rivets, etc.

THE Subscribers, Agents for the sale of James S. Spencer's, Jr., Railroad and Boat Spikes, Boiler Rivets, and Wrought Iron Chairs for Railroads, made at his Works near this city, will execute all orders with promptness, despatch, and of the best quality.

ALSO IMPORTERS of English refined and Merchant bar Iron; Extra refined Car and Locomotive Axes (from 3½ to 6½ inches in diameter); B. O. Locomotive Tire (welded by Baldwin). Also, supply Boiler and Flue Iron cut to pattern or otherwise—Spring, Shear, and Cast Steel, etc., etc., etc.

T. & E. GEORGE.

Philadelphia, November 14, 1850.

Railroad Iron.

THE UNDERSIGNED, HAVING made arrangements abroad, are prepared to contract for the delivery of Foreign rails, of approved brands upon the most favorable terms.

They will also make contracts for American rails, made at their Trenton works, from Andover Iron, in whole or in part, as may be agreed upon.

They are prepared to furnish Telegraph, Spring and Market Wire; Braziers and Wire Rods; Rivets and Merchant Bars to order, all made exclusively from Andover Iron. The attention of parties who require iron of the very best quality for special purposes, is respectfully invited.

COOPER & HEWITT,
 17 Burling Slip, New York.

February 15, 1850.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract for the delivery of English, Welsh and Scotch Rails, of any pattern and weight, also for every description of English, Welsh, Scotch, and Swedish Iron, Railway Chairs and Spikes, Rivets, Bolts, Nuts, Washers, Chain Cables, Anchors, Tin Plates, German Spelter, Iron Castings, and every description of Machinery.

WILLIAM BIRD & CO.,
 Iron and Tin Plate Merchants,
 44 Wall st., New York.

And at 5 Martin's Lane, City, London,
 and 140 Buchanan st. Glasgow.

July 27th, 1850.

Railway Iron.

THE Subscribers will contract to deliver, in the course of the ensuing Spring and Summer, the best English Rails, made by a particular specification, and of any pattern required.

DAVIS, BROOKS & CO.,
63 Broad st.

On hand for sale, English rails of 58 lbs. to the yard, made by particular specifications.
January 10, 1851. 2m

To Iron Masters.

WANTED—A Person to take charge of a Blast Furnace for Smelting Iron, for further information apply to
COLLINS, VOSE & CO.,
74 South street.

Railroad Iron for Sale.

THE Mansfield and Sandusky City Railroad Co. have on hand from twelve to fifteen hundred tons of American Flat Bar Railroad Iron, weighing 38 lbs. to the lineal yard, which they offer for sale at reasonable rates.

The iron has been in use about four years, and is sound and in good condition. It is 2½ by ½.

It will be ready for delivery at short intervals between the opening of navigation in the spring and the 1st September next.

For further particulars inquire at the office of the company at Sandusky City, Ohio.

C. G. FORBES, President.

December 24, 1850.

Railroad Iron.

THE "Montour Iron Company" is prepared to execute orders for Rails of the usual patterns and weights, and of any required length not exceeding 30 feet per rail. Apply at the office of the Company,
No. 73 South 4th st., Philadelphia,

Or to the Agents,

CHOUTEAU, MERLE & SANFORD,
NO. 51 New st., New York.

September, 1850.

American Railroad Iron.

1000 Tons, weighing 50 lbs. per yard, manufactured by Reeves, Abbott & Co., at the Safe Harbor Iron Works, and now lying in yard at Brooklyn, for sale by

CHOUTEAU, MERLE & SANFORD,
No. 51 New street.

Tubes, Tubes, Tubes.

THE undersigned have received special permission from, and are in direct communication with, the Birmingham Patent Lap Welded Iron Tube Company, for the sale of their very excellent and superior Boiler and Gas Tubes in large or small quantities. These Tubes are sold very extensively in England and on the continent of Europe are sold exclusively by

WM. BIRD & CO.,

Iron and Tinplate Merchants,
44 Wall st., New York
5 Martin's Lane, City, London,
and 140 Buchanan st., Glasgow.

Wanted.

WANTED—A Situation in a Civil Engineer's office, by a Young Gentleman from Scotland—has had six years' experience as a practical Draughtsman, Architect, Surveyor, and Leveller in one of the principal civil engineering establishments in Scotland. First rate reference given. Apply to Messrs. Cooper & Hewitt, 17 Burling Slip, or to

JAS. SNEDDON,
23 Harrison st.

Wanted.

A Second-hand Locomotive of 10 to 15 tons weight. A note, giving lowest terms, addressed to A. B., Railroad Journal Office, will receive attention.
January 9, 1850.

Wanted.

A Second-hand Locomotive, weighing from 10 to 15 tons. A note, addressed A. B., at "Railroad Journal" office, will receive attention, if sent soon.
January 21, 1851.

For Sale.

TWO Locomotive Engines—10½ tons weight, built by Baldwin. Also Four Eight-wheeled Passenger Cars, with side seats, all in good running order. Apply to
WM. E. MORRIS,
Office of Philad., Germantown & Norristown Railroad Co., 9th and Green sts., Philadelphia. 3m5

Great Work on Bridge Building, etc., etc.

JUST published in medium folio, One Dollar, 75 cts. to subscribers.

Part IV of a "THEORETICAL AND PRACTICAL TREATISE ON THE CONSTRUCTION OF BRIDGES IN STONE, IRON AND WOOD," including the Equilibrium of Arches, the mathematical principles of the Oblique Arch, Suspension Arch, etc., Construction of Foundations in Water, Centering, Oblique Arches, etc., the application of Iron to Railroad Structures, Practical Tunnelling, Suspension Bridges, etc.; illustrated by numerous accurately executed Plans, Elevations, Sections and Details of Stone, Iron and Wood Bridges, Viaducts, Tunnels, Culverts, Machines, etc., constructed by the most eminent Architects and Engineers in Europe and the United States, and numerous Original Designs for Bridges, Viaducts, Culverts, etc. The whole calculated to meet the exigencies of Engineers, and assist Draughtsmen, Bridge Builders, Mechanics and Students. By George Duggan, Architect and Civil Engineer.

The present part contains beautifully executed plans, elevations, sections, and details of the Iron Lattice Bridge 140 feet span over the canal in the suburbs of Dublin on the line of the Dublin and Drogheda R.R., Plans, elevations and sections of the Timber Bridge over the Schuylkill, at Market st., Philadelphia, with Arches 160 and 190 feet span. Plans, elevations and sections of a Timber Bridge with Arches 155 and 200 feet span over the Delaware. Also, plans, elevations, sections and details of Lattice and Frame Wood Bridges, explanatory of Nathaniel Towns and Colonel S. H. Long's methods of constructing Bridges of Wood, with the continuation of the Articles on Cofferdams, Concrete, Limes, Mortars, Cements, etc.

Published by George Duggan, 300 Broadway, New York, to whom all communications should be addressed and subscriptions forwarded.

Parties remitting Mr. Duggan \$5. and the remainder \$4 when they have been supplied with the first six parts of the "Theoretical and Practical Treatise on Bridge Building, etc." shall receive it monthly as published. To those making Mr. Duggan a present remittance of \$9, the work will be forwarded post free to any part of the United States.

Great American Engineering AND MECHANICAL WORK, just published in medium folio One Dollar, 75 cts. to Subscribers.

Part X. of "Specimens of the Stone, Iron & Wood Bridges Viaducts, Tunnels, Culverts, &c., &c., of the United States Railroads." By George Duggan, Architect and Civil Engineer.

The present part contains beautifully executed plans, elevations, and sections of the Timber Bridge with Arches 136 feet span, over the Mohawk river, on the line of the Utica and Schenectady R.R. Plans elevations, sections and isometrical views of Timber Piers 100 feet high, a Timber Bridge of 55 feet span, and Ice Breakers, on the line of the Little Schuylkill and Susquehanna R.R.

Also plans, elevations, sections, isometrical views and details of an Iron Bridge 356 feet long, with Arches 81 feet span, erected by the N. York Iron Bridge Co. over Moores Creek, on the line of the Virginia Central R.R., and plans, elevations and sections of an Iron Plank Road Bridge 160 feet span, erected over Buffalo creek by the same company, with a description of Col. Long's method of constructing Bridges in Iron, and an explanation of the causes that led to the failure of the Iron Bridge 60 feet span, near Lackawaxen, on the line of the New York and Erie R. R., at midday, on the 31st July last, by which several lives were lost, and a great amount of property destroyed.

Published by GEORGE DUGGAN,
300 Broadway, New York.

To whom all communications should be addressed and subscriptions forwarded.

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,

No. 24 Commercial St. Boston.
August, 16, 1849. 6m33

Gas Fixtures.

FIXTURES for Burning Gas for Lighting Public Buildings, Private Dwellings, Stores and Factories, manufactured by the subscriber in great variety. Orders by Mail, or left at the Factory on Causeway street, will be promptly attended to.

HENRY N. HOOPER & CO.
Boston, March 23, 1850. 6m13

TO RAILROAD COMPANIES, CAR MANUFACTURERS, etc.

THE Undersigned hereby gives public notice, that the Commissioner of Patents, pursuant to his decision in relation thereto, on the 8th day of October, 1850, issued to him a Patent for the sole right to manufacture, and exclusive use of the INDIA RUBBER CAR SPRING, on account of priority of invention of said Spring.

F. M. RAY

New York, Oct. 23, 1850.

Iron Trade of Pennsylvania.

DOCUMENTS and Statistics relating to the Manufacture of Iron in the State of Pennsylvania—giving a history of the manufacture from its commencement to this date, illustrated by diagrams. Also tables giving the address and capacity of every establishment in the State. Prepared by direction of the late convention of the trade held in Philadelphia. For sale by

LINDSAY & BLACKISTON, Philadelphia.

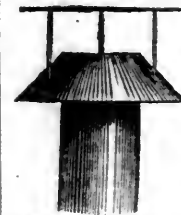
FIELDING LUCUS, Jr., Baltimore.

HENRY G. NICHOLS, 79 Water st., N. Y.
or at this office—price \$1 00.

It will be sent by mail to any order enclosing the money, and post paid.

Emerson's Patent Ventilator.

ADAPTED to Cars, Engine houses, Public Halls, Factories, Churches, School Houses, Dwellings, Chimney Flues, etc.



This Ventilator is stationary, and cannot get out of order. It is constructed in such conformity to certain ascertained laws of pneumatics, as to insure a constant draft outward, whatever may be the changing direction of the wind. The Massachusetts Mechanic Association have awarded a gold medal to the Inventor, and the Manufacturers have already disposed of over 3,000 of the article. Manufactured and sold by
CHILSON, ALLEN, WALKER & Co.,
351 Broadway, New York.

Providence Tool Co.,

MANUFACTURERS OF

Plane Irons, Tooth Irons, Soft Moulding and Rabbet Irons, Cornice Irons, Plow Bits, and Planing Machine Knives:

NUTS, WASHERS AND BOLTS.

—ALSO—

PLATE HINGES AND PICK AXES.

They are prepared to execute orders for all descriptions of Cold Punching and Job Work.

WM. FIELD, Agent. RUFUS WATERMAN, Treas.
PROVIDENCE, R. I.

Lovegrove's Patent Cast Iron Water and Gas Pipes.

THE Subscriber, the Inventor and Patentee of the Centrifugal mode of giving form to metallic substances while in a molten state, is preparing to make Cast Iron Water and Gas Pipes, of any dimensions, at prices much lower than they can be made in the old manner, and the pipes warranted to stand a pressure of three hundred pounds to the square inch, and to be soft enough to drill. Steam Engines and all kinds of machinery. Cast Iron Doors and Frames, and Mill Castings of every description, made to order.

THOMAS J. LOVEGROVE,

Machinist and Founder,

West Falls Avenue, below Pratt st., Baltimore.

Railroad Letting, in Virginia.

PROPOSALS will be received at the office of the chief engineer of the Richmond and Danville railroad, until 9 o'clock A. M., Monday, the 10th of March, to be decided the 13th of the same month, for doing all the grubbing, clearing, grading, ditching and masonry, on the Richmond and Danville railroad, in the counties of Amelia, Nottingham, Prince Edward, Lunenburg and Charlotte, comprehending about 45 miles of road.

Profiles and specifications can now be seen at the office of the company in Richmond; and after the 10th of February, at the offices of the resident engineers, on the line, at Burkeville and Keysville.

By order of the board of directors,

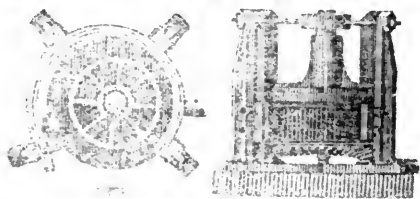
ANDREW TALCOTT,

Chief Engineer R. & D. railroad.

Engineering department R. & D.
R. R. Co., Richmond, Jan. 22, 1851. }

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phoenixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll sounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y. P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

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Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

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NO. 234 WATER ST., NEW YORK.

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He is aware that this is rather a bold assertion for him to make, yet he can say with confidence that they have but to be tried to give them precedence over all others.

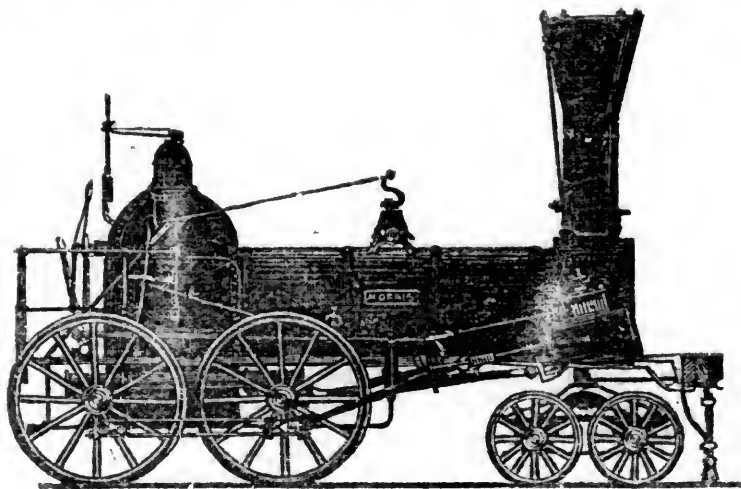
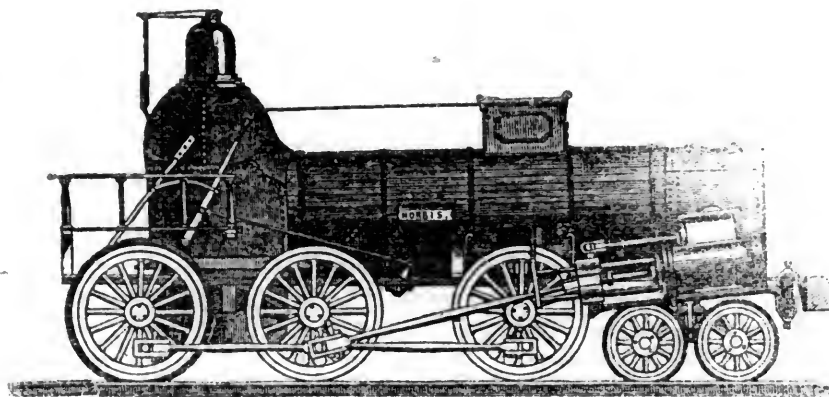
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BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA.



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THIS superior article for igniting the charge in wet or dry blasting, made with DUPONT'S best powder, is kept for sale at the office and depot of

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The Premium of the AMERICAN INSTITUTE was awarded to the Etna Safety Fuse at the late Fair held in this city.

November 3, 1849.

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Railroad Car Manufactory.
RIDGWAYS & KIMBALL,

HAVE established at this central point, the manufacture of Passenger, Freight, Gravel and Hand Cars for Railroads, and assure all Western Railroad Companies that it will be their constant aim to procure the best materials and workmen, and to turn out the best kind of work at fair prices. Specimens may be seen on the Columbus and Xenia Railroad. The patronage of Railroad Companies is respectfully solicited.

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THREE LOCOMOTIVES, Manufactured by M. W. Baldwin, of 10 tons weight, all in complete repair, and now running on the Columbia and Philadelphia Railroad.

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A. L. ROUMFORT,
Supt. Motive Power Col. & Philad. R.R.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 136 NASSAU ST., NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.

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ASSISTANT EDITORS,

J. T. HODGE, *For Mining and Metallurgy.*

GEN. CHAS. T. JAMES, *For Manufactures and the Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & Co., 136 NASSAU ST.

Saturday, February 22, 1851.

Montreal and Prescott Railway.

We learn that C. S. Gzowski, Esq., Chief Engineer of the St. Lawrence and Atlantic railway, is engaged to survey the line of railway from the city of Montreal to Prescott. We learn that arrangements are so far consummated, that an early commencement of the work of constructing the road, is now regarded as made certain.

The Parliament of Canada, a year or two since, passed a law, authorising the various municipal corporations to subscribe stock in railroad companies on certain conditions, through the aid of which subscriptions, in addition to private assistance, and with the aid of the "Facility Law" of Canada, it is supposed that the road can be readily completed. The guarantee of public credit by the law above referred to, is the most important feature in the railway measures of Canada, and promises to

give great efficiency to the movements of the friends of railway progress. We expect ere long to witness a decided movement for extending an unbroken line of railway from Montreal to Sandwich, opposite Detroit. Charters are already granted, and the route is known to be free from any serious engineering difficulties. The line passes through a succession of prosperous villages and towns for its whole extent, whose means are abundantly adequate to its construction, using the provincial guarantee to the amount of one-half the cost. Separate companies having distinct charters, which would the sooner enable them to call for the government debentures. One company's charter extends from Montreal to Kingston, another from Kingston to Toronto, and another from Toronto to Hamilton and Sandwich.

Maine.

Atlantic and St. Lawrence Railroad.—A meeting of the stockholders is called for the 6th of March, for the following purposes:

1st, To see if the stockholders will authorise the directors to make a mortgage of the whole road, and all the real and personal property and franchise of the company to secure the bonds of the company to the amount of \$1,500,000, to bear date April 1st, 1851, payable in 15 years, subject to the prior lien and mortgage to the city of Portland.

2d, To see if the stockholders will authorise the directors to unite with the Androscoggin and Kennebec railroad company, with or without other parties, in taking lease of the Penobscot and Kennebec railroad on such terms as may be agreed upon by the directors—provided the required authority to make such lease shall be granted by the Legislature.

A Shorter Route to Lake Erie.

Wm. H. Morrell, Esq., an experienced engineer, writes as follows to the Courier and Enquirer in relation to the proposed route from New York to Owego or Elmira through Pennsylvania:—

"Recently there has been much said, in quarters interested in depreciating the value of Erie railroad stock, in relation to a route through New Jersey and Pennsylvania, connecting with the New York and Erie at some point on the Susquehanna, which shall shorten the distance from this city to the point of connection nearly one hundred miles. To those who know anything of the topography of the intervening country, it is needless to say, that

no such route exists, and especially none by the route designated by these parties, as by that route an air line connecting points between which they claim that the greatest saving in distance is to be effected, is longer, by scores of miles, than set down by them. The truth is, there is no practicable route from this city to Lake Erie, connecting with the Erie road, that can reduce the distance more than twenty miles, and all of these routes are to be constituted by a combination of a number of roads of higher grades than the N. York and Erie and having a width of gauge unsuited to the New York and Erie cars, and their management under several distinct corporations; while the New York and Erie road will present a continuous track, of uniform gauge, under one management—a difference more than sufficient to compensate, both in time and in money, for any saving that can possibly be effected in distance by the aggregation of the several roads that have been paraded before the public, to frighten the holders of the New York and Erie stock and securities into a sacrifice of their property."

"Canton" Stock.

The property of this celebrated fancy consists of three thousand acres of land, and \$300,000 expended in improvements upon it, estimated to be worth two millions of dollars, and represented by 12,500 shares, at \$160 per share. In September last the shares sold at \$47; in December they had advanced to \$55; early in January to \$70—about which time they were introduced into this market—and on the 28th they reached the culminating points of \$95 for money, and \$97 on time.

Remington's Bridge.

The Amsterdam Intelligencer says "the bridge built the last season, and recently finished, across the Mohawk, at Tribes Hill, on the Remington plan, went down last week, being unable to sustain its weight from its immense length. We understand the cost of the company so far, in erecting this and another bridge that fell down last year, is about \$12,000."

We cautioned the public against this humbug, when it first made its appearance here; and Mr. Whipple, of Albany, the well-known bridge builder, demonstrated the utter absurdity of its pretensions, in articles published in our paper sometime last fall. However, people prefer to get their knowledge a different way; and in the above in-

stance have chosen to pay \$12,000 for information that any sensible man would have given them gratuitously.

From the Merchant's Magazine.

Internal Improvements of the State of New York.

A SKETCH OF THE RISE, PROGRESS, AND PRESENT CONDITION OF INTERNAL IMPROVEMENTS IN THE STATE OF NEW YORK.

RATES OF TOLL ON THE NEW YORK STATE CANALS.
Continued from page 83.

The revenue from the trade with other States in 1835, by way of Buffalo, was equal to 15 per cent of all the tolls of the Erie canal. By way of Buffalo and Oswego, the revenue on the trade with the Western States and Canada was equal to 18 per cent of the tolls of the Erie and Oswego canals.—The revenue on the trade with Canada and Vermont in the same year, by way of Whitehall, was equal to 27 per cent of the whole tolls collected on the Champlain canal.

In the report of tolls and tonnage in 1837, (Senate Doc. No. 52,) it is stated that the revenue paid to this State on the trade with other States, in 1836, was as follows, viz:—

On property passing Buffalo to other States.....	\$237,230 31
On property coming from other States by way of Buffalo.....	108,506 35
On property by way of Oswego to other States.....	35,312 15
On property coming from other States.....	8,034 54
On property by Whitehall, to other States.....	11,209 97
On property by Whitehall, from other States.....	17,699 85

Total..... \$417,993 13

This sum is equal to 25 and eight-tenths per cent of the aggregate sum collected for tolls (\$1,613 330) on all the State canals in 1836.

The revenue on the trade with other States for the same year, by way of Buffalo and Oswego, was equal to 26 per cent of the tolls on the Erie and Oswego canal; whilst the tonnage to and from other States was only 11½ per cent of the whole tonnage of those two canals. The same trade by way of Whitehall yielded 25 per cent of the tolls of the Champlain canal. It is considered in these estimates that the tonnage on the trade with other States passes the whole length of those canals to and from tide water.

The report of 1837, before referred to, also shows the extent of the reductions made in the rates of toll from 1832 to 1836, and the effect of those reductions on the trade of the canals, viz:—

	Rates in 1832.	Rates in 1833.	Rates in 1834-5-6.
Toll on 1,000 lbs. of merchandise from Albany to Buffalo.....	\$5 08.20	\$4 35.60	\$3 26.70
Toll on 1,000 lbs. of flour from Buffalo Albany.....	2 54.10	1 81.05	1 63.35
Total.....	\$7 62.30	\$7 17.65	\$4 90.05

The total amount of toll paid on 30 tons of flour from Buffalo to Albany, with the toll on a return cargo of 30 tons of merchandise, would be—

By the rates of 1832.....	\$457 38
By the reduced rates of 1834 35-36.....	294 03

Gain to the transporter on 30 tons of merchandise through the canal each way.....\$163 35

The report of 1837, pages 24, 25, then says:— "Notwithstanding all these reductions in the rates of toll, which are equal to an average of 36 per cent on all the products transported on the canals, the aggregate amount of revenue from tolls has greatly increased. The following statement shows the amount collected for tolls on the Erie and Champlain canals for four years, at the old rates, and for four years since the reduction of the rates of toll commenced, viz:—

In the season of 1829, at the old rates.	\$795,056 52
" " 1830, " " "	1,032,599 13
" " 1831, " " "	1,194,610 49
" " 1832, " " "	1,195,804 23

Total sum received in 4 years....4,218,068 37

In 1833, (average reduction of toll about 20 per cent).....	\$1,422,696 22
In 1834, (further reduction of 15 per cent).....	1,294,956 86
In 1835, (reduction on lumber 37, and on shingles 50 per cent).....	1,491,952 36
In 1836.....	1,555,965 11

Total sum received in four years at reduced rates.....\$5,765,569 55

Increase in four years, at reduced rates, over the tolls of four previous years at the old rates \$1,547,501 18.

It was not until 1837, that the collectors of tolls were required to furnish statements of the amount of toll paid on each article transported on the canals. The results of those statements are given in the report of tolls and tonnage of 1838, pages 26-7.

Tolls at two cents per mile on freight boats.....	\$111,339
Tolls on steamboats and passengers.....	84,169
" on products of the forest.....	209,806
" on products of animals.....	33,763
" on vegetable food and other agricultural products.....	336,278
" on manufactures.....	75,507
" on merchandise.....	380,826
" on other articles.....	56,430

The products of the forest paid 16½ per cent of the whole tolls—the products of agriculture 28½—merchandise 29½—manufactures 5-9—boats and passengers 15—other articles 4.3 per cent.

It was shown in the report of 1838, page 33, Senate Doc. 35, that the rates of toll on the Pennsylvania canals exceeded those of New York as follows:

On the products of the forest, 54 per cent; agriculture, 39.3; manufactures, 78.7; merchandise, 30.7; other articles, 31.9 per cent.

The average amount of revenue from the canals and railroads of Pennsylvania for 1836 and 1837, was equal to \$715,144 for each year. That of New York, for the same time, averaged \$1,451,883 for each year, being \$21,000 more than double the sum received on the Pennsylvania works. In competing for the western trade, the canal commissioners of Pennsylvania, at the period referred to, did not follow the example of New York by reducing the rates of toll. On the contrary, the commissioners of that State, in their report of 1835, remark as follows:—"The board have no hesitation in saying, that but little if any reduction in the rates of toll ought to be made at present. Further time, and the completion of several works of internal improvements now in progress, which connect with our canal and railways, will secure an ample commerce without sacrificing the revenue to produce a precocious prosperity."

The policy of that State, on this point, has been somewhat changed since 1835, and besides reducing toll, a draw-back has been allowed on flour, and some other articles, when transported over a certain number of miles.

In 1841, the canal board reduced the toll on mineral coal coming to tide water from the west, or going west from Utica, and on anthracite coal going from tide water, to 2 mills per 1,000 pounds per mile; and also allowed a draw-back of 73 per cent on the amount paid on mineral coal from the west to tide water, and the same on anthracite coal from tide water to Utica, or at any point west thereof. The toll on bar and pig lead was also reduced to 2 mills per 1,000 pounds per mile.

These rates were reduced below the constitutional minimum, under the 15th section of chap. 288 of the laws of 1840, which declared that the canal board might fix such rates of toll upon those arti-

* In 1825, the toll on packet boats was fixed at 20 cents per mile. In 1830, the rate was reduced to 15 cents, and in 1831, to 11 cents; the toll west of Utica being 6 cents per mile—each passenger rated at 150 pounds. In 1830, each person over twelve years of age was charged at the rate of two mills per mile.

cles not specially enumerated in the report of the canal commissioners, referred to by the constitution.

In 1842 these rates were restored to the constitutional minimum for reasons set forth in the report on tolls and tonnage. Senate Doc. No. 100 of '43, pages 38 to 45.

The first day of July, 1845, was the period fixed for the payment of the last instalment of the original debt, contracted for the construction of the Erie and Champlain canals. In May, of the preceding year, notice was given to the holders of the outstanding stock that the State was prepared to pay the debt, and that on the first of July, 1845, funds would be placed in the Manhattan company for this purpose, and that after that date no interest would be paid on the debt. Between the 1st and 8th of July, \$530,000 of the debt was redeemed, leaving a balance of debt to come in of \$252,620 30. To meet this balance there was in the bank, as certified to to the canal board by the President and Cashier, the sum of \$481,335 41.

With these facts before them, the canal board, on the 11th of July, 1845, proceeded to make a general reduction in the rates of toll on the canals, regarding the debt as substantially paid. The reduction on agricultural products was half a mill per 1,000 pounds per mile; merchandise generally was reduced from 9 to 8 mills, and a discrimination was made on sugar, molasses, coffee, nails, spikes, spikes, iron and steel, reducing these articles from 9 to 5 mills per 1,000 pounds per mile.—Mineral coal, not entitled to a bounty, was reduced to one mill per 1,000 pounds per mile, for the purpose of bringing the bituminous coal of Ohio to tide water, which was effected to some extent.

In the annual report of the commissioners of the canal fund in 1846, it is stated:—"That the opening of the Wabash and Erie canal of the Miami extension, connecting Cincinnati by canal navigation with Lake Erie, and the Erie extension canal, affording a like connection between Pittsburgh and Lake Erie, rendered it expedient, if not necessary, that the tolls of our canals should be reviewed and adapted to the important changes which the opening of these various channels of trade might produce. It was with this view that essential reductions were made by the canal board in July last, and particularly those on merchandise, to take effect at the opening of navigation in 1846."

The report also shows the total charge on 1,000 pounds of flour from Buffalo to Albany, and 1,000 pounds of merchandise back, by the rates in 1832, 1834, and as fixed in 1846, as follows:—

	1832.	1836.	1846.
Tolls on 1,000 lbs. of flour and the same of merchandise.....	\$7 62.20	\$4 89.05	\$3 81.15

On a boat load of fifty tons of flour from Buffalo to Albany, and a return cargo of 30 tons of merchandise, the transporter would gain \$272 25, comparing the rates of 1832 with those of 1846.

In February, 1846, and before the reduced rates of toll went into operation, the commissioners of the canal fund were called upon by a resolution of the Senate, to report the amount of tolls received in 1845, on products of this State and other States, and how much less they would have been at the rates fixed by the canal board in 1846. The report showed that the reduction on the products of other States in 1845, would be equal to \$159,442; and on the products of this State \$196,445; total amount of reduction \$355,887.

The reports said:—"It should not, however, be inferred that this is to be the measure of the reduction of the receipt of tolls in 1846, or that there is to be any reduction in those receipts." And the belief was expressed that the effect "would be to increase rather than diminish the canal revenues."

And such was the effect, as shown by the report of 1848, Assembly Doc. No. 11, in which the tolls for two years previous to the reduction, and two years subsequent, were compared as follows:—

1844, at old rates, gross amount of tolls.....	\$2,446,374
1845.....	2,646,181
1846, rates reduced 15½ per cent.....	\$2,756,120
	\$5,092,555

1847..... 3,616,000

6,372,120

Increase of revenue at reduced rates. . \$1,279,565

In the winter of 1846, in anticipation of the foreign demand for vegetable food, and the probable opening of the British ports to our breadstuffs, representations were made to the canal board, by persons interested in the corn trade in the valley of the Wabash, showing, that if the tolls of the Erie canal on corn was reduced to 2 mills per 1,000 pounds per mile, great quantities of corn would be sent from that region as far down as Lafayette, through the Erie canal, from the desire to ship that article from New York, without exposing it to the warm climate of New Orleans. In February, 1846, a proposition was made in the canal board to reduce the toll on corn from 4 to 2 mills per 1,000 pounds per mile, on which the members of the board were equally divided. A reduction of one mill, however, was made by one majority. The unprecedented demand for vegetable food caused by the famine in Europe, and the high price growing out of this state of things, brought the immense quantities of corn to the ports of the Atlantic: but the reduction in the rate of toll, small as it was, had a material influence in securing a large portion of this trade to the New York canals.

The following statement shows the quantity of corn transported on all the New York canals, as well as the quantity coming to tide water, for four years preceding, and four years subsequent to this reduction of toll, and also the amount of revenue derived in each year on the article of corn:—

Years.	Cleared on all the canals.	Came to tide water.	Tolls paid.
1842.....bush.	369,933	366,111	\$29,751
1843.....	287,033	186,016	14,935
1844.....	173,300	17,861	4,741
1845.....	180,933	33,778	4,200
Total.....	1,011,199	603,766	54,627
1846, toll reduced 25 per cent.	1,819,285	1,610,149	84,903
1847.....	5,819,285	6,053,845	269,396
1848.....	3,350,000	2,933,962	162,392
1849.....	5,671,500	5,060,250	182,952
Total.....	16,676,676	15,658,207	699,643

This statement shows an increase in the quantity of corn coming to tide water in 4 years after the reduction in the rates of toll, compared with the four previous years, of more than fifteen million of bushels; and an increase of revenue during the same period from the toll on corn of \$616,016.

The toll on corn was reduced to two mills per 1000 pounds per mile, to take effect on the opening of navigation in 1849.

In December, 1849, a meeting of forwarders and shippers engaged in the commerce of the lakes and canals, was held at Buffalo, and a memorial was prepared for the canal board, asking a further reduction of toll. In this memorial it is stated that the reduction of 45 per cent on sugar, coffee, iron, &c., in 1846, had produced an increase in three years in those articles, from 103,870,304 to 166,472,536 pounds, equal to an increase of 60 per cent in three years. It appears by a statement published by J. L. Barton, in September last, that altho' an average reduction of about 20 per cent was made in these rates of toll in the spring of 1850, the tolls of this year would be equal to the preceding; and the result at the close of the navigation sustains his position.

As a system of revenue, the regulations for the collection of tolls on the New York canals, has been eminently successful. The collectors are required to deposit daily the sums received by them with some bank or agent designated by the canal board; and each one send to the canal department a weekly abstract, showing the sum received and deposited each day; and at the close of the month a statement is made to the same department by the bank or agent, giving the sum received each day, and furnishing a check on the reports of the collector. At the close of each month, also, the collectors return to the canal department, their monthly rolls, on which are entered the names of boats and the sums paid on account of tolls, an examination and comparison of which enables the de-

partment to detect erroneous statements in regard to the sums received for toll at any collectors' office, as returned on the weekly abstracts; each collector being charged by a neighboring office with all the tolls as received by him on each clearance, with the name of the boat on which the toll was paid, and all particulars necessary to a full explanation of the charge.

The whole expense of collecting the revenues on 700 miles of canals is about fifty thousand dollars, which includes the sums paid to collectors and their clerks, weigh masters, inspectors of boats, and all the expenses of their several offices. For the last ten years the expenses of collecting the revenue averaged only a fraction over two per cent of the gross sum received for tolls.

To be continued

Railway Economy--Improvement in Locomotive Engines.

We have, on more than one occasion, taken an opportunity of drawing attention to the improvements which have from time been made in various departments of the working of railways, and more especially to the advance which has within the last few years taken place in the practical saving effected in the wear and tear of road, as well as plant, and the general economy of our rolling stock. The improvements of Messrs. Barlow and other gentlemen on the structure of the permanent way, are daily leading to the most practical results, which must eventually tell upon the earnings of railway companies, whilst the true construction of locomotives has received valuable elucidation at the hands of Mr. Crampton.

The principle introduced by this gentleman, namely, of placing the weight on the extremities instead of in the centre of the engine is, we are happy to find, likely to be still more generally adopted; and we hear that during the last month orders for some twenty engines, built on this principle, have been received from some of our leading lines. We confess that at one time we entertained a very strong impression that the principle would be found to "carry out" better on large engines, and only on the outside cylinder system; but it has been practically demonstrated that it is as applicable to light tank engines of 10 tons, as to heavy engines of 36 tons, allowing a control to the engineer over the details of his engine, and the privilege of determining the due proportion of all the parts, as may seem best suited to the work to be done. Thus the principle of Crampton's engine is, in truth and in fact, as capable of adaptation to inside as to outside cylinder.

We learn further that Mr. Crampton has succeeded in bringing into operation a principle for suspending engines of all classes, by means of which the least possible amount of injury is done to the road, and in the same proportion to the engine itself.

We are aware that Mr. D. Gooch, of the Great Western, and Mr. Sturrock, of the Great Northern railway, have had their attention directed to the system of suspending their engines on their extremities; and they have succeeded in a great measure, with coupled engines of the ordinary construction, by applying compensating springs, which have the effect, to a certain extent, of placing the weight of the engine on the extreme ends. This is important, not only for preserving a uniform weight in the coupled wheels in order to produce steadiness, but it secures the least amount of wear and tear to the wheels and machinery. It is impossible to say which of the two systems of engines, whether in coupled-wheeled, for goods or single engines, it is of most importance that the principle should be adopted; but we venture to express our opinion, from personal observation, that all parties interested in railways in these days would do well to look into this question, the more particularly as we have reason to believe there is sufficient practical evidence to enable engineers to arrive at a correct conclusion. We are assured, that in the instances in which the system has been fully investigated, but one opinion prevails, viz., that the principle is correct. Mr. Crampton accomplishes his object by placing the driving wheel at the end of the engine instead of in the centre, and the wheels carrying about one-half of the whole weight of the engine on them, it is clear that one-

half will be on the driving wheels; and by assuming four small wheels at the other end to take the other half, the machine in fact, is suspended on the extremities; but in the ordinary machine, the driving wheels being in the centre, with half the weight on them, the other half is necessarily equally distributed on the fore and hind wheels, having the effect of a balance beam action—one of the greatest causes of oscillation, and consequent destruction, to the road and machine. The subject is one of great interest to the engineering world, and of not inferior importance to the earnings of railway companies, in the economy and safety of their engine stock.—*Railway Record.*

Report of A. L. Rownsfort, Superintendent Columbia and Philadelphia Railroad, on the experiments made with the Coal Burner, "Henry A. Muhlenberg."

SUPERINTENDENT'S OFFICE, Parkersburg, }
November 27, 1850. }

To the Honorable, the Board of Canal Commissioners, Harrisburg, Pa.:

GENTLEMEN:—The undersigned, superintendent of motive power on the Columbia and Philadelphia railroad, having been instructed by your board to test, practically, the patent movable fire box, for burning anthracite coal in locomotive engines, invented by John J. DeHaven, respectfully reports:

That on taking charge of the road, on the 1st of September last, he found the locomotive "Henry A. Muhlenberg," refitted for testing this experiment, which was done, as he was informed, by your order, under the superintendence of his predecessor, Colonel Wm. English. The improvement purported to consist: first, in the substitution of anthracite or bituminous coal, as a fuel, for wood, in generating steam; thereby saving from 30 to 50 per cent. in the cost for fuel to the State. And, secondly, in constructing a detached and movable fire box, entirely separate from the engine and boiler; and in such a manner, by the use of bolts, flanges and connecting pipes, as to attach it to a boiler, and detach it when necessary for repairs, in a space of time not exceeding twenty-four hours. This latter (which is the particular improvement covered by DeHaven's patents,) was designed to remove the great objection to the use of coal burners, in generating steam, both in locomotives and marine boilers, viz: the loss of time necessarily incurred in the frequent repairs of the fire box.

It has been satisfactorily ascertained, long since, that in this section of the country, where wood as a fuel is more costly than coal, and becoming more so annually, that the use of coal in the generation of steam, would be a large item of economy. And accordingly, within the last ten years, experiments made on our principal railroad and steam navigation lines, have proved to a demonstration, that coal can be used for the purpose of generating steam, in such a way as to be entirely satisfactory and with a saving of from 30 to 50 per cent., according to the relative value of wood and coal.

The obstacle, however, in the way of its general introduction, has been found to consist in the fact, that the heat produced by coal, being more intense in the fire box than that of wood, this intense heat, together with the chemical action of the coal upon the lining of the fire box, destroyed it, in a comparatively short period of time; and that although the great saving in the first cost of fuel made the actual cost of the repairs of the fire box no object; yet, the loss of time occasioned by those frequent repairs was, and still is, a serious evil. For instance, a coal burner in full active duty, may burn out her box in from 6 to 18 months, according to her capacity and service. It would cost from \$500 to \$1000 to repair her. This cost, however, is much more than made up by the difference of the cost of coal and wood; but the time consumed in making this repair, would involve a loss of from four to six weeks on a locomotive, when the engine required no other repairs.

DeHaven's movable box is so constructed, that each locomotive or marine boiler, may have duplicate fire boxes, so that when the one in use is burnt out, or becomes injured in any way, it can be removed, and the duplicate put in its place in a period of twenty-four hours.

In constructing a new locomotive, the cost would not be greater with this improvement than without

it. The expense of altering a locomotive, so as to adapt this movable fire box to it, would be from \$500 to \$1000, according to the capacity of the boiler, including the cost of the box itself.

To test the qualities of the coal burner "Henry A. Muhlenberg," she was put in service on the 17th of October last, and has continued to run without intermission up to the present time, during which period she made thirty four trips between the head of the Schuylkill inclined plane and Columbia, a distance of 76 miles. This locomotive, when in good repair, burning wood, could draw over the road 21 loaded cars, averaging from ten to twelve miles an hour. She has satisfactorily proved, during her recent trial, that she can run from ten to twelve miles per hour, and draw upwards of 21 loaded cars, burning anthracite coal.

To do this work, burning wood, requires at least two cords; burning coal, one ton and a half. During the whole experiment of thirty-four trips, the fire box, which is attached to the frame and boiler, has remained perfectly firm, and works as well as if it were stationary, and no inconvenience having arisen in these experiments on account of the box being movable, I can see no objection to its use.—From my observation and experience, I believe that this fire box, with an adequate force, might be removed, and a ready made duplicate substituted in twenty four hours, so as to detain the locomotive for this purpose no longer than that length of time.

The result of this test is, therefore, entirely satisfactory to me, and I recommend the whole matter to the future consideration of your board.

A. L. RUMFORD,

Sup't Columbia and Philadelphia R. R.

December 20th, 1850.—Approved by the board,

MORRIS LONGSTRETH, President.

—Journal of the Franklin Institute.

ANNUAL REPORT

Of the State Engineer and Surveyor, covering the returns of the Railroads of New York for 1850.

THE HON. SANFORD E. CHURCH,

President of the Senate.

I have the honor to submit herewith the reports received at this office, from the railroad corporations of this State, made in accordance with, or in consequence of, the 31st section of the general railroad law of 1850, chap. 140.

The following corporations have reported in full—The Albany and Schenectady, Auburn and Rochester, Hudson and Berkshire, Hudson River, Northern, Oswego and Syracuse, Rochester and Syracuse, Tonawanda, Utica and Schenectady, and New-York and New Haven.

The Albany and West Stockbridge and Chemung roads being leased to other corporations, the reports seem to cover all the data in their possession.

Partial reports only have been received from the following corporations:—The Attica and Buffalo, Buffalo and Niagara Falls, Cayuga and Susquehanna, New York and Harlem, Rensselaer and Saratoga, Saratoga and Schenectady, Schenectady and Troy, and the Syracuse and Utica.

The following corporations have made no returns whatever:—The Auburn and Syracuse, the Long Island, and the Saratoga and Washington.

Most of the information required to be given by the law, is such as, from the nature of the case, must be known and recorded by each company, if they keep any reliable accounts at all, and the cost and trouble of collating and arranging must be the only cause which any company can assign for not making the reports as the law requires. The fact that so many companies have reported as required, is sufficient evidence that the law can be complied with.

The law does not require, nor do I deem it necessary for me, in laying these reports before the Legislature, to enter upon any general discussion of the value of the information required, or of the interest which the people of the State and the owners of railroads have in knowing the exact results of railroad transport up to this time, or their capacity for further improvements in the rapidity and economy of movement. The subject is of the utmost importance, and sooner or later will attract its due share of public attention.

Yearly reports from all our railroad corporations will, it made in accordance with the requirements

of the law, afford most valuable information, in determining the cost of transport under a great variety of conditions, both as to the character of line, and nature and amount of traffic. It is to be regretted, however, that many of the reports are so meagre in detail as to be of little value. The Legislature may see fit to require the delinquent corporations to complete their reports for the past year, and if so, they should be returned by the 15th of February. The law of 1850 imposes a fine of \$250 on each corporation failing to comply with the requirements of the 31st section thereof. Eleven corporations have not met its requirements.

I would respectfully recommend that the penalty for a failure to report be modified. I cannot understand why it should not be the same as for any other violation of chartered rights or duties, but if a fine is to be imposed it should be a much larger amount than it is at present.

I desire to call especial attention to the nature and importance of the information to be gained from reports made as the law prescribes, and its directness to the point in determining the actual cost of transport.

The report of the Utica and Schenectady company, is complete in all the details required. The road of this company has a larger traffic, and income (per mile) than any other and its profits are abundant. For this reason, if for no other, we may confidently rely upon their statements, as embracing all the expenditures properly chargeable to the cost of transport. The only doubt which can be entertained as to the entire accuracy of their report is in the amounts of expenses, as allotted to passenger and freight transportation. It may be, for aught I know, that as this is the first time the company have been called upon to make for public inspection, such a division of expenses, that their accounts during the year, have not been kept with especial reference to a proper division, and that the superintendent has, since the close of the fiscal year, made up the account between freight and passengers according to his best judgment, upon a full examination of the different items of expenditure. If so, he has acted properly, and the expenses of freight and passenger transport, so made, can be relied on as very near the truth, though not as accurate as it may be when from month to month, accounts are made up with especial reference to making the proper distribution of cost of labor, and a record kept of fuel and other materials used in the two departments of transport. Among the complaints made against the provisions of the law, by some managers this requirement, to divide expenses between passenger and freight business has been the most prominent, and I have been gravely assured that it could not be done. Happily, some of our well informed managers have accomplished the task, and will, without doubt hereafter, with greater accuracy. None can make such a division of accounts except the managers of our roads, and they can do it with all necessary accuracy if they try.

The report of the Utica and Schenectady road shows that they have transported 370,988 passengers, and 98,695 tons of freight, and that passenger trains have run 229,940 miles, and freight trains 93,580 miles at an aggregate cost of \$308,173 86, or 95 cents per mile run for both classes of trains. So far and no farther could information as to the cost of transport be obtained from reports made under previous laws. The cost per mile of running trains is no indication of the cost of transport, for the cost depends upon the amount of movement, each mile run, both of passengers and freight, and consequently, movement of both and the cost of both, must be given in addition to the miles run by the engine and cars. Let the above statement be compared with like results given in the report of the Oswego and Syracuse company, which is also complete, but which road has much less traffic, and has moved 77,162 passengers, and 7,949 tons of freight; passenger trains have run 58,480 miles, and freight trains 16,000 miles, at an aggregate cost of \$38,942 92, or 52 cents per mile run. It is here shown that it costs the latter road 43 cents per mile less to run trains, than it has cost the Utica and Schenectady company. Both roads are no doubt managed with equal skill, and sufficient economy. At any rate the above results show nothing. The present reports, however, show us,

in addition to the above the amount of work done in passengers and tons, or the actual movement, each mile run, and the cost of passenger and freight transport separately. From these data we find that the average number of passengers each mile run has been, on the Utica and Schenectady road, 97½, at a cost per passenger of 78-100 of a cent, and on the Oswego and Syracuse, 33, at a cost of 1 ct. and 68-100 of a cent each mile, so that it has cost much less to transport passengers on the former than on the latter road. This result is owing mainly to the larger loads drawn on the Utica and Schenectady road.

An important fact is also established, which up to this time has been doubted by most men conversant with the cost of railroad transport, which is, that passengers can be transported at an expense of less than one cent per mile. This result is obtained as a rule when the average loads are 90 passengers each mile run. That this is the best result which can be obtained from railroads cannot be supposed; further experience and skill will be applied to the task of cheapening transport. The energy and directness of the efforts to be put forth will in a great measure depend upon the bringing up all of the results yearly before stockholders and the public, so as to enable just comparisons to be made, one road with another.

The public have a vast interest in the construction and management of railroads. The franchises of the corporations are granted and protected by them, and any one can be, and large numbers are actual owners of the roads; cheap transport is, however, of most importance to the public, and a full exhibition of all the work done, and items of cost will promote economical management, and tend to reduce the cost of as well as the charges for transport.

The amount of freight traffic is shown to be very large on some of the roads. The whole tonnage carried on the New York and Erie road is 131,311 tons. The company give no information by which the cost of either freight or passenger traffic can be determined. The Utica and Schenectady road has carried 98,695 tons, or 4,690,730 tons 1 mile at a cost of \$133,045 87, or 2,797 cts. per ton per mile; this includes canal tolls amounting to \$47,200 90, or one cent per ton per mile nearly. The actual cost thereof, is 19-10 cts. per ton per mile, the average load being 50 tons. This road carries but little freight except during the close of navigation, and the cost must be considerably increased over what it would be with a more regular business.

The Northern road has been in operation but a short time. The report from that road is made up with great care and accuracy, and their report for the current year will no doubt afford valuable information as to cost of freight traffic.

An examination of the tables will show the results of all the roads as reported made up with much care and labor.

H. C. SEYMOUR,

State Engineer & Surveyor.

New York and Erie Railroad.

To the Stockholders of the N. Y. and E. R. R. Co.:

The Board of Directors have the satisfaction of announcing to the Stockholders the result of their operations during the past year.

At the date of the last address the road was completed to Corning, 277 miles from Piermont, leaving 175 miles to be constructed to reach Lake Erie, upon the route then surveyed, or 169 miles by the route since adopted, reference to which will hereafter be made.

To provide the means for completing this remaining portion of the road, the directors issued \$3,500,000 income bonds, as proposed in their last address.

In addition to the line then completed, the section between Corning and Hornellsville, 41 miles, was opened in September last, and this week another link of 51 miles has been added, extending from Hornellsville to Cuba, making in all 369 miles, exclusive of the Newburgh branch, and leaving but 77 miles to finish, to reach Lake Erie. Upon 37 miles of this track is laid in detached parts, so that only 40 miles remain unfinished, the rails for which are mostly on the ground, ready to be laid on the opening of spring.

The completion of the New York and Erie railroad to Dunkirk, within the time prescribed by law is now no longer a problem. It will be opened probably on the 1st, certainly by the 14th May next.

This road, like other kindred works of the present day, has cost more than was originally estimated, but not more than others of less importance and value, as will fully appear by reference to their official reports.

The cost upon the western division has been augmented largely, if not mainly, by adopting a new line, other than that upon which the estimate of last year was made; by which a grade of 60 ft. to the mile continuously, for 14 miles, has been reduced to 40, and the distance shortened six miles. This has been done on the 50 miles nearest Dunkirk, and will save the company annually, in working the road, the interest upon four times its extra cost. Other important changes have been made in the line of the road, by which many miles of a continuous grade of 69 feet have been reduced to 50 feet per mile.

The right of way contingent upon a change of line, has been expensive, and the extra cost rendered necessary in hastening the work, in compliance with the requirement of the law of the State, to finish it within a prescribed time, together with the fact that the company have added about \$1,000,000 in value to the stock of their locomotives and cars, within the last year, will doubtless satisfactorily account for the cost of the work over the estimate.

For their convenience in operating the road, and for the greater safety of passengers, the directors have erected for the sole use of the company, a continuous telegraph line from this city to Hornellsville, and will extend it through to the lake, simultaneously with the opening of the road to that point.

The building of 169 miles of railroad so expensive and difficult in its character, within one year, is a great achievement even at the present day, and it is regarded with exultation and pride by the board. Although this is the crowning effort of their labors, it has been more speedily accomplished than any other portions less prominent.

As a whole the work has been formidable, and at times almost overwhelming, and while the board cannot overlook the obstacles which its enemies have thrown, and are still placing in the way of its success, they turn with satisfaction to the remembrance of its numerous friends who have given them aid and encouragement in times of great doubt and embarrassment.

In spite of difficulties, perhaps unequaled, the largest and most important private enterprise in America [if not in the world] is nearly completed, and within ninety days from this time, the board promise themselves the satisfaction of a trip of inspection over the New York and Erie railroad, from the Hudson river to Lake Erie.

The whole cost of the road, with ample depot grounds and buildings, and equipments for operating the road, together with the Newburgh branch, and valuable and extensive grounds and docks at Dunkirk, Newburgh, Piermont and New York, with extensive machine shops, barges, steamboats, etc., will be, at the time of reaching the lake, about \$20,500,000; or, after deducting the value of the equipments, \$2,500,000—\$38,706 per mile—a cost by no means large, when compared with other important railroads in the country.

The average cost of railroads in New England is about \$50,000 per mile.

The financial condition of the company is as follows, viz:

FUNDED DEBT.	
Mortgage bonds issued in lieu of State loan.....	\$3,000,000
Second do., redeemable in 1859.....	4,000,000
Certificates of old indebtedness.....	500,000
Income bonds.....	3,500,000
Total amount of funded debt.....	\$11,000,000
Add to this the present floating debt.....	2,988,045
And the probable cost of opening the road to Lake Erie, exclusive of materials now on the ground.....	300,000
And the entire debt of the company will be.....	\$14,288,045

To fund the floating debt of the company, to provide the necessary machinery and cars for working the road [the remaining unissued capital stock of the company, \$4,710,000, not being available for that purpose] the directors will issue bonds, transferable on the books of the company, for \$3,500,000, bearing interest at the rate of 7 per cent. per annum, payable semi-annually, with interest warrants attached; the principal redeemable 20 years after date, and convertible into the stock of the company at the option of the holder. Authority for which is given in the 10th division of the 28th section of "An act to authorize the formation of railroad companies, and to regulate the same," passed April 2d, 1850.

Confident of the perfect security of these bonds, [the property of the company being worth at least fifty per cent. more than the amount of the entire indebtedness, a statement of which is given below] the directors offer them to capitalists with the full assurance that they will command a ready sale.

The liabilities of the company will then be:
 Funded debt, as before given.....\$11,000,000
 Bonds redeemable in 1871, and convertible into the stock of the company, at the option of the holder [present issue] 3,500,000

Amount of capital stock issued.....	\$14,500,000
To which add for contingencies.....	5,790,000
Making.....	\$20,500,000

the amount expended and to be expended in opening the road to Lake Erie. At least \$2,500,000 of which is chargeable to equipment account.

The road, 446 miles, and the Newburgh branch, 19 miles, in all 465 miles in length, is constructed in the most substantial manner. The bridge abutments are of solid cement masonry, and the arched bridges, some of them gigantic in size, are models for strength and durability. Within the last year, parts of the road on the eastern division have been rebuilt, bridges supported on wood have been removed and replaced by others upon durable stone abutments. As a whole, the road is inferior to none in the permanency of its construction, in its capacity for doing business, and in susceptibility to economy in working.

It is a source of satisfaction to the directors that they have generally, in advance, accurately named the time of opening the road from point to point as each new link has been finished, and it is not the less satisfactory to them that their estimates of the earnings of the road have also been realised.

The estimates for the present and following years are made with the same confident expectation that they will be fully realised, and that the company, from its annual net earnings, hereafter will make semi-annual dividends to the stockholders, and have a surplus for other purposes.

The earnings of the year 1849 were.....	\$809,777
" " " 1850 were.....	1,600,300

A comparison of the earnings of the road for the last two years, per mile, for each mile in use, taken in connection with the prospective extension of the road to Lake Erie, and the consequent increase of business naturally to be expected from so important an opening, will be the basis of the present estimate.

During each of the years of 1849 and 1850, newly finished sections of the road were added to it, and the comparison is instituted from the average distance in use during each year.

In 1849, that portion between Binghamton and Owego, 22 miles, was added in the month of June, and that part between Owego and Elmira, 36 miles, late in October; also the Chemung branch, 17 miles, late in November. The average distance in use during the year was 219 miles. Total earnings for the year, \$809,777. Earnings per mile, \$3,697.

In January, 1850, that section between Elmira and Corning, a distance of 18 miles, was opened and added to the line, and also the Newburgh branch, leading from Chester to Newburgh, 19 miles in length; and in September, 41 miles more, extending from Corning to Hornellsville, were put in operation. The average length of road in use during 1850 was 320 miles. Earnings for the year \$1,600,300—\$5,000 per mile. Excess of earnings over 1849, \$1,303, or 35 per cent.

The road is now in operation to Cuba, 369 miles, which with the Newburgh branch and the Chemung branch make in all 465 miles of road now in use. Based upon the foregoing comparison of the earnings of 1849 and '50, without any increase upon last year, the earnings for the first four months of 1851 will be.....\$673,333

Deduct 10 per cent., the earnings for January and February being generally much below the average earnings for the other months of the year..... 67,333

606,000

For the remaining eight months, the road being open to the lake, and working 464 miles at last year's rates.....1,546,667

Add 35 per cent. upon last 8 months, as the increase contingent upon the lake connection..... 541,333

Add estimated contributions from Leggett's Gap railroad, Jefferson and Canandaigua railroad, Dunkirk and State Line railroad, and the North East railroad—the two last connecting Dunkirk with Erie, Pa., all of which are under contract, and probably will be finished in August next—say 10 per cent. upon the earnings for the last four months, the earnings in September, October, November and December being much larger than the average of other months of the year..... 77,333

Making the earnings of 1851.....\$2,771,333

Deduct running expenses, 50 per cent.... 1,385,667

\$1,385,667

From which deduct the interest chargeable in the year 1851:

*First mortgage bonds, Nov. int.....	105,000
Second " " " March do.....	140,000
" " " " Sept. do.....	140,000
Old certificates for year.....	35,000
Income bonds, Feb.....	122,500
" " " Aug.....	122,500
Convertible bonds, Aug.....	122,500
	787,500

\$598,167

Deduct, say, six per cent. interest for the whole year upon the amount of stock issued..... 347,400

Leaving a surplus of..... 250,767 to be applied to other purposes.

Agreeable to the foregoing estimate of the earnings for the last eight months of 1851, \$2,165,333, the earnings for the twelve months after the opening to Lake Erie will be.....\$3,248,999

Add 15 per cent as the natural increase of 1852 over 1851..... 487,199

And the earnings for 1852 will be..... 3,735,198

Deduct running expenses, 50 per cent..... 1,867,500

Interest upon indebtedness.. 1,015,000

2,882,500

Leaving a balance of..... 852,599

Equal to 14 1/2 per cent upon the capital stock of the company now issued.

ESTIMATE FOR 1853.	
Receipts.....	\$4,000,000
Running expenses.....	2,000,000
Interest on debt.....	1,015,000
	3,015,000

Surplus..... 985,000

Equal to 17 per cent upon capital issued.†

* Interest for May is deposited with the Comptroller in conformity to the law of the State, releasing the \$3,000,000 State lien, and will be paid by him.

† Exceeding by 8 per cent the estimated earnings as per last year's address.

‡ In forming estimates of the receipts of the road after its completion in May next, the directors can discover no method by which they will not be likely to exceed the foregoing figures.

In making the foregoing estimates, the cost of running the road is put down at 50 per cent on the receipts. The expenses of 1850 were, upon the road 48 per cent, and 53 per cent upon the road and ferry combined.

But it is confidently believed by the board, that the expenses of operating the road after the extension to Lake Erie may, and probably will be, reduced much below the percentage of last year.

The labors of the board in constructing the road will soon terminate, and their attention will then be more exclusively directed to its economical management. As a first step to which, and in compliance with the public convenience, both of which demanded a change in the former ferry arrangements, the directors have completed an agreement with the Union railroad company of Rockland county [a company organized under the general railroad law of this state], by which passengers are brought to the company's pier, at the foot of Duane street, in this city. This will make a large annual saving, and passengers will reach the city an hour and a half sooner than by the way of Piermont. A way passenger train will, however, be run to Piermont, and the milk and freight business will be continued there as formerly.

That these estimates may not appear extravagant, the directors call the attention of the stockholders to the following important tributaries to the road, their length and connection, some of which now are, and most of the others will be, in operation during this and the coming year.

1st. The Newburgh branch, 19 miles long, commencing at Chester, and terminating at Newburgh. A valuable outlet for many kinds of freight.— Nearly two millions of feet of lumber, brought over the road, have been deposited there during the past month. Newburgh will, at no distant day, become one of the most important, if not the largest mart for lumber in this State. This branch is the property of the company, and taken in connection with the Midland railroad to Boston, through Fishkill, Hartford and Providence, will be a most valuable part of the New York and Erie railroad.

2d. The Legget's Gap railroad, extending 48 miles from Great Bend, on the Susquehanna river, to the Lackawana coal fields, iron works, etc., at Scranton, and to be extended to Wilkesbarre and the Wyoming valley. The great value of this road to the Erie railroad, when it shall be completed in August next, will far exceed any present reasonable calculation.

3d. The Syracuse and Binghamton railroad, to connect those two important places, eighty miles distant from each other. This road is projected, and the surveys are being made.

4th. The Cayuga and Susquehanna railroad, 34 miles, connecting by steamboats from Ithaca upon Cayuga lake, the Central railroad with the New York and Erie railroad at Owego.

The receipts of the road for the past year, in operation to Corning were say	\$1,600,000
It is reasonable to suppose that an addition of 20 per cent may be calculated upon the second year	330,000
Take now the line from Corning to Dunkirk, 168 miles, intersected, as it will be, during the year, by the several new roads, and suppose the way business on the line to amount to	400,000
Add for that portion passing over the road from Corning to New York	400,000
	800,000
Now, with the through travel and freight to Lake Erie, with the advantages of steamboat connection at Dunkirk, and the railroad to Erie, we have only assumed that we shall carry a hundred through passengers per day each way, at \$9	540,000
Fifty emigrant passengers, \$5	150,000
	690,000
Fifty tons of freight each way per day, including express freight, at \$20	600,000
Total	\$3,990,000

5th. The Chemung railroad, running to Jefferson, 17 miles, and with steamboats on Seneca lake, connecting Geneva, Rochester and Buffalo, and the Central railroad, with the Erie railroad.

6th. The Jefferson and Canandaigua railroad, 45 miles long, passing through thriving villages to Canandaigua. It will be completed in July next. This will make a continuous line of 62 miles from the Erie road to Canandaigua.

7th. The Williamsport and Elmira railroad, 60 miles long. A part of this road is graded, and the whole is under contract. It runs from Elmira to Williamsport, Pa.

8th. The Corning and Blossburgh railroad, extends 40 miles to the Bituminous coal mines of Pennsylvania, and connects the towns from which it derives its name. Heavy T rails are soon to be substituted for the present flat rails.

9th. The Buffalo and Conhocton Valley railroad, from Corning, 133 miles to Buffalo—52 miles will be completed in November next. It will pass through Bath, Batavia, and other important towns, and by a branch to Niagara Falls, and thence by a railroad now being constructed through Canada west, connecting with the Michigan Central railroad at Detroit. The distance from Buffalo to New York by this route, over the Erie railroad, is 40 miles shorter than by way of Albany.

10th. The Hornellsville and Buffalo railroad, 90 miles long. This road passes through a rich section of country to Attica, and thence direct to Buffalo. It will be finished in May, 1852. The distance from Buffalo to New York by this road is about the same as by the one last above named.

11th. The Dunkirk and State Line railroad, running from Dunkirk to the Pennsylvania State line, 28 miles. It will be in operation in August next.

12th. The North East railroad, 18 miles long, will be opened by the 1st August next, and will, with the Dunkirk and State Line railroad, connect Dunkirk with Erie, Pa.

Railroads from Erie west are in the course of construction, and will within one year, extend to Cleveland, from whence a railroad is now in operation to Cincinnati: also to Toledo, Chicago and Galena, and at no very distant day to St. Louis—forming, over the New York and Erie railroad, an unbroken line of railroad communication between New York and the Mississippi river.

Arrangements have been made with some of the best steamboats on the lakes, to run from Dunkirk to Cleveland, in connection with the Cleveland and Cincinnati railroad, and to Sandusky, Toledo and Detroit, in connection with the Mad River, Michigan Southern and Michigan Central railroads, forming daily lines in each direction.

With a continuous and unbroken railroad connection with the interminable west, in almost every direction, and opening upon Lake Erie at Buffalo, Dunkirk and Erie, [navigation commencing earlier and continuing later in the season at the two last points, than at any one further east], and with the numerous tributaries before referred to, at intermediate points within our own State, which in the aggregate are more than equal to this road in length, gathering and concentrating upon it the business adjacent to them; with a connection with the numerous steamers and propellers upon the lakes, and exchanging with them both passengers and freight; with a terminus on the Hudson river at Newburgh and Piermont, and the City of New York; with an unbroken line of wide track, as it soon will be, of 543 miles, between Erie and New York, and with cars wider, and consequently more comfortable than are afforded on any other route. With all these, and less distance in its favor, what reasonable man, who is at all acquainted with the present and rapidly increasing business of the country with which it connects, can for a moment doubt the certain and triumphant success of the New York and Erie railroad.

And, in conclusion, your board beg leave to remark, that in this period of our country's history, when private enterprise is achieving such results, the man of sober calculation is in little danger of finding the figures of his prophecy arranged hereafter in judgment against him. And while the board of directors entertain strong hopes of more flattering results, they have, in their estimates, been extremely cautious against encouraging undue expectation. Trustees, as they feel themselves to be,

for the largest private company in America, and perhaps in the world, they appreciate the responsibility under which they act; and they would be reluctant publicly to sanction what their judgment did not fully approve. Their labors in behalf of the company have been long and arduous, and their endeavor now is, and has been, faithfully to guard the interests entrusted to them, and to be prepared to surrender them unimpaired, and especially unstained, by private gain or personal advantage.

By order of the board of directors.

NATHANIEL MARSH, Secretary.

Office New York and Erie R. R. Co., }

New York, February 15, 1851. }

RECEIPTS FOR 1849.

January	\$39,340 98
February	43,505 22
March	50,073 07
April	62,123 24
May	66,066 67
June	60,320 02
July	57,546 63
August	70,024 66
September	77,688 45
October	100,720 51
November	88,052 24
December	94,315 75

Total

RECEIPTS FOR 1850.

January	\$112,955 25
February	102,212 91
March	130,578 68
April	141,984 89
May	148,226 55
June	120,324 42
July	104,053 22
August	129,206 12
September	150,017 57
October	160,579 91
November	150,147 92
December	149,985 85

Total

RECEIPTS FOR 1851.

January

(From the London Railway Journal, for Nov. 1850)

REMARKS UPON THE COST OF REPAIRS OF LOCOMOTIVE ENGINES. (WRITTEN JAN. 1849.)

Made with a view of showing the financial advantage gained to a railway company, by keeping its whole stock of engines in a full state of efficiency in perpetuity, in preference to the system advocated by some parties of considering ten years, or a somewhat longer time, as the "life" of an engine, and that a greater or less number of new ones must of necessity be either made by the company, or purchased at different periods, to replace "worn out" ones.

The practicability of maintaining an engine at her full effective value, cannot be denied, and although experience might be supposed, by this time, to have made obvious the actual cost of so doing, yet the original old stocks of most of the railway companies, have been frequently, from time to time, relieved, or, in other words, indirectly repaired, by the introduction of new engines, built nominally for the traffic of branch and extension lines.

These engines, which have been, for the most part, of a very much larger and more expensive class than the traffic of branch lines has been in most instances proved to require, have been paid for out of capital, and having been appropriated to the purposes of all general traffic, their services in the first bloom of newness and efficiency, have of necessity gone to some extent (and in many cases greatly so) to relieve or diminish the current expenditure.

The time, however, must shortly arrive, when these additions to stock must cease, and the whole requisite stock be either maintained or replaced by new out of the current earnings of the companies, and the following calculations, made from experience in working engines, without the aid of occasional new stock, will tend to render more perspicuous what the actual cost of repairs must ultimately be.

mately be, and will show the pecuniary advantage of maintaining over renewing stock.

I would observe, that it is asserted by the executive of some of the leading railways, that their stocks are fully maintained, at their present rates of current expenditure, and that there is no necessity for appropriating any special fund in reserve for depreciating or renewing. I admit that depreciation need not exist, and I contend that it ought not, but, that it really does not, I deny, and I defy any railroad company to substantiate, by fact, the assertion that it does not. [That is, our author means if the stock be not fully kept up in timely repairs.—Ed. R. J.]

In considering the difference of cost between maintaining and replacing or renewing "plant," I propose to speak of engines individually, assuming a certain quantity of work to be performed. Of general depreciation it will be necessary to speak of the stock more collectively.

The accounts of the various railway companies, and occasional published remarks, have represented the current cost of repairs, per engine, at from 2d. to 3d. per mile run, and superintendents have vied with each other in the smallness of their amount of expenditure on this head. The one who worked at 2d. of course priding himself greatly on his superiority over his neighbor at 3d. Not being aware of their respective systems of calculating mileage, I am inclined to believe that the charge of 3d. is made on a much more honest amount of work done, and that such a charge would at any time show a stock more like what it ought to be than the other.

I consider the only fair and proper method of charging expenses to be on the number of miles in actual service drawing trains, whether of loaded or empty vehicles. Necessity will frequently require that engines be sent out on trips, or run "return trips" empty or without a load, but these distances have no right to be placed to their credit of mileage account in repairs. A good engine should never be within giving a few occasional miles empty.

I propose to show calculations made upon an extreme, and also upon a more moderate amount of work done. Premising, however, that they have been based upon the assumption that the different amounts be fairly and judiciously expended. Books will show an amount of expenditure of money, but the condition of the stock can alone show whether talent and prudence have been exercised in the appropriation of it, and on this account I submit, that it is the bounden duty of every board of directors, to have an annual valuation, if not of all their floating locomotive stock, at least of each engine specifically; and, furthermore, I contend that the character of locomotive superintendents generally, is somewhat compromised by their not insisting on such valuation being made.

Let us suppose, then, that an engine of the best manufacture, say £2500, was newly set to work on the first of January, 1849, and that either the same engine must stand ready for work newly repaired, and in no single respect inferior in effective value on the 1st of January, 1859; or that she be worked to an extremity during the coming ten years; sold at the end of that time for what she would fetch, and a new one precisely similar, ready to take her place. I will first comment upon the latter supposition, viz., that it be the intention of her owners to replace her with a new one in ten years, and consequently to get as much work out of her as possible during that period, at the lowest possible current cost.*

Assuming then, that by extraordinary good luck she runs 300,000 miles in ten years, as follows—140 miles per day, five days every week, or in round numbers 3000 per month, for the first twenty months up to the 31st of August, 1850. This would give a total of 60,000 miles every two years, allowing the last four months to refit her for commencing work again.† And in addition to this we have an

allowance of two days every fortnight for overhauling and casualties.‡

Upon the above distance, viz., 300,000 miles, let us suppose 2d. per mile appropriated to repairs. Now, in repairs there are two specific items of the most expensive nature, which cannot be set aside, viz. fire-boxes and tubes,* as upon the perfect state of these depends the entire well-doing of the engine, or nearly so. I will therefore, first make a specific charge for these.

To be continued.

Maine.

York and Cumberland Railroad.—This road was opened to Gorham yesterday, to convey stockholders to their meeting at Gorham. The cars, however, ran many times between this city and Gorham, without charge, and were crowded almost to suffocation by the press of a delighted public, and every thing passed off agreeably throughout the day.

The enterprising contractors, Messrs. J. G. Myers, & Co., provided an abundant and rich collation at the hotel of Mr. Anis, at Gorham, who exemplified tact, liberality and excellent taste in its fullness, excellency and good taste. Some four hundred persons partook of the repast.

A most interesting and satisfactory exhibit was made at the stockholders meeting, by the directors, through the president, Francis O. J. Smith, Esq., of the financial condition of the road, as this division of it will stand when fully completed and equipped, showing, we think, an unequalled success in its management by the directors, and a reliability of the corporation which few roads unfinished, in or out of New England, have ever attained.

The whole cost of the road, when completed, including depot and grounds in Portland, as well as stations, engine houses, and every denomination of property and equipment needed, will be on this first division, from Portland to Gorham, 10 miles and 8-10ths of a mile, \$360,000.

The company will have a funded debt, in its bonds on a term of years, of \$90,000—which is twenty-five per cent only, on this entire cost of the corporation's property.

Besides this funded debt, it has a floating debt of \$30,000. It has a further indebtedness to incur in furnishing the station houses, gravelling and finishing up the road and completing the equipment of \$33,541—the two sums making \$63,541.

To meet this floating debt and incomplete expenditures, the corporation have of subscriptions yet to be paid and unconditional, pertaining to this division of the road, \$68,269—being, if all should be paid in, an excess of \$4,728 of means to disencumber the corporation of all debts except its above named funded debt, of \$90,000.

The new subscriptions on the road will, it is believed, fully equal the deficiency in the collection of the \$68,269 of instalments not yet paid in; and if so, the corporation will be freed of all incumbrance substantially, beyond its funded debt.

But on the completion of the road through to Great Falls, the corporation is allowed by the construction contract, a diminution on the above cost of the division to Gorham, of \$2,000 per mile, equal to \$21,600—and thus reducing by offset the above funded debt to \$68,400—or to about 17 per cent only of encumbrance on the whole property of the corporation from Portland to Gorham.

The directors, determined to keep the progress

† She may either rest one day a week, two days together every fortnight, or four days a month, as convenient, but an average of one day a week will not be found too much in the aggregate.

‡ Having proposed to show calculations on an extreme, and also on a more moderate distance run, I have adopted 300,000 miles as an extreme. I don't believe any engine ever did run that distance in ten years. I don't deny the possibility of its being done, but it would require a special qualification, and would absorb more time and care than could be devoted practically to any one engine. I have assumed it in order to give every advantage to the low figure of 2d. per mile for repairs.

* Whatever other repairs may be neglected or delayed, these two must be kept up. The loss of power from a defective boiler is incalculable.

of the work within the "clear and unquestionable" means of the corporation, have limited by contract the right of the corporation to enlarge its funded debt beyond 33 per cent, of actual construction previously secured, for other divisions of the road beyond Gorham. The route consists of three such divisions—the first from Gorham to Saco river—the second from Saco river to Alfred—the third from Alfred to Great Falls, and they open accounts with each division, and the stock-subscriptions on each.

But as the funded debt enlarges to take in, within the limits stated, any of these divisions, the bonds that represent it attach to the whole corporate property of each division—thus avoiding all classification of bonds. For each bond so added to the funded debt three times the amount towards the completion of the work is secured as the basis for the redemption of the bond.

There seems to be no more admirable and safe system conceivable than the one thus creditably adopted by the directors of this road. And being adhered to, as it must be, unless every bond holder submits to a departure from it, the credit of the bonds of this road will be undoubted wherever the conditions of them shall be made known.

We rejoice to see the affairs of this enterprise so prosperously exhibited, and it is the best commentary that business men can require upon the ability and prudence with which the directors manage them. It is destined to become an important artery of business to Portland, and with a trifling effort among the citizens of the latter, we believe it can be opened to Saco river by the first of next August—the total cash subscriptions which the directors require is only \$75,000. A single day ought to be enough to raise that subscription among our merchants and traders. Shall it not be done?—*Portland Evening News of Feb. 6.*

Malleable Iron.—This branch of useful manufactures is probably prosecuted to a greater extent in this city than in any other part of the country; a recent authentic account stated that but two establishments of the kind existed in all New England, and those two in Massachusetts; and we have no information of their existing in any great numbers elsewhere. In a statement of a late number of a scientific work, it is said that the common grey Pig Iron may be used in its manufacture; but we are assured by persons well skilled and long used to making it, that it is not so, and that it requires pig iron of a peculiar quality containing certain elements not known to exist in more than three or four places where iron ore is found. The pig iron is submitted to a melting heat until it is in a state of fusion, when it is refined through the action of an air furnace, until all impurities are separated from it; it is then poured into moulds of the required shapes for the articles intended to be made.

After cleaning the castings of the sand which adheres to them, they are placed in the annealing furnace, packed in metallic oxide; and submitted to nearly a white heat for several successive days.

These are the prominent features of its manufacture. Some assert that the common grey pig originally contains no carbon, and that the carbon visible in the manufacture of it is given by the action of the air furnace, and afterwards divested of it by the annealing process. This we understand to be a mooted question, not only with scientific men, but with practical manufacturers. The subject is now under consideration by one or two gentlemen of this city, who are making an analysis of it, and will doubtless render a reliable opinion.

As to the use to which malleable iron is put, few can estimate their number and value—gas and hot air pipe fittings, scale work, stove trimmings, belt fixtures, entire shoe kits, ferules, hoes and rakes, entire harness trimmings, a great variety of trimming about carriages, tin workers' machines, coffee mill trimmings, and in fact almost every conceivable article made from iron. The members of a firm engaged in its manufacture in this city, were induced about a year ago, to enumerate those that came immediately under their observation, and they reached the almost incredible number of not less than 2000.—*Newark Advertiser.*

*2d. per mile in my prefatory remarks, is, I believe, the lowest quotation for repairs that has yet been exhibited.

† Taking into consideration the various sources of interruption which occur to retard thorough repairs, four months would be found not too much time to make her fit to resume her station.

Patent Machine Picket Fence

SIX DIFFERENT STYLES of this fence are now made by patent machinery; and is by far the most economical fence for Railroads, Farms, Yards, etc., ever yet offered to the public, costing only from 4 to 30 cents per foot, according to pattern; and is so put up as to be shipped at a trifling expense. Full particulars will be furnished, by addressing the subscriber, to whom all orders should be sent.

N. STRATTON, Troy, N.Y.

Patent Metallic Measuring Tapes.

A New Article, made from Vegetable and Mineral substances combined, entirely free from the objections made to all other tapes, arising from contraction and elongation in consequence of atmospheric changes. Fine wires, of a material not affected by dampness or dryness, are woven into the warp of the Patent Tape, rendering it not subject to variations in length, like all other tapes heretofore manufactured. Instead of being merely painted, it is immersed in a peculiar solution of gums, and the fibres being solidly compacted together, it acquires substance and strength presented by no other article. They are enclosed in patent cases, superior to all others in lightness, strength and durability.

Imported and for sale only—together with every description of Drawing and Profile Paper, Tracing Paper in rolls, Vellum or Tracing Cloth, Field Books, Mouth Glue, and a general assortment of Engineer's materials—by
WILLARD FELT.
Importer of Stationary, 191 Pearl st., N. Y.

Boston Locomotive Works,

—Late Hinkley & Drury—

No. 38 Harrison Avenue,
BOSTON.

Locomotive and Stationary Steam Engines; Boilers; Iron, Brass, Copper and Composition Castings; Coppersmith's Work.

VAN KURAN RAILROAD WHEELS:
Wheels and Axles fitted, and all kinds of Railroad Machinery furnished at short notice.

Gay, Edward F.,

Columbia and Philadelphia Railroad, Philadelphia Pa.

AMERICAN RAILROAD JOURNAL.

Saturday, February 22, 1851.

The Stock and Money Market.

There has been an improved feeling in the stock and money market since our last. The advance in prices indicate an abundance of money, and a confidence of its continuing so.

In addition to the ordinary operations in the "fancies," a very large amount of western bonds have been disposed of within the last fortnight. A greater amount are now before the market, or are soon to be offered for sale. The demand still continues good. Railroad bonds on long time, based upon ample security, are equal in safety to any securities that can be made, and as they are sold at rates that secure to the purchaser an interest of from 8 to 9 per cent, there can be no reason why these should not be eagerly sought for, so long as money continues abundant. As the money for them is wanted only on instalment, which frequently extends the payments through one or two years, the sales of large sums do not disturb the market as it would were they immediately closed up.

The past year has been very favorable to the progress of roads. The present promises to be equally so. The foreign and California news is favorable. The fall in cotton will hasten forward the crop, so that its effects will not be felt for the present. In the interior, a vast amount of agricultural produce will come forward as soon as the season opens, and will give an active business to railroads and canals. We may at least expect another very prosperous season before the ebb of the present flood commences.

The means for the completion of most of the great leading lines in various parts of the country are now secured. No reverse in the money market would check their progress. The demand of these lines have operated adversely to the interests of the minor ones, as the former offer a more attractive and popular security for the investment of capital; and as those connected with their management, may be said to have control of the money market. These men must supply their own wants first, and their demands often cause the securities of companies of less magnitude to be shoved aside.

The completion of the great lines before spoken of will not only relieve the market of the immense load now resting upon it, but will release from their present avocations, a great number of able men in railroad affairs, whose services will then become available in aid of weaker lines. The credit of the roads completed will in a greater or lesser degree be extended to tributary lines, so that capital already invested, will be used as the basis of further loans. The railways of the south and west can never again receive such a shock as prostrated them in 1837-8.

The bonds of what may be termed the first class "Provincial roads," are selling at from 85 to 90 net. Those of companies less strongly backed may sell a little less. The above bids fair to be the average rate for some time to come.

The rail market abroad continues to be depressed. The expectations of a speedy rise have not been confirmed. The anticipated increase of duty on imported iron, has flattened prices. We have no reason to expect any great change in the prices abroad, unless our duties are increased. The capacity to make in England and Wales is greater than the demand, and a large profit would stimulate the make far beyond the wants of roads. The foreigner, with his immense investments, will be content with a very slight profit for a long time to come.

SALES OF STOCK IN NEW YORK.

	February 21. Sales.	February 14. Sales.
U. S '67 Loan.....	115½	115½
Erie R.R.....	84½	81
Harlem R.R.....	68½	68
Stonington.....	41	43
L.I. R.R.....	24½	21
Norwich & Wor....	61	65
Albany & Sch'y R.R.	—	90
Del. & Hudson.....	134½	—
Rochester & Syracuse	—	112½
Reading.....	62½	63
Morris Canal.....	20½	21½
Erie income.....	94½	93½
Hudson River.....	—	81
" " Bonds.....	104½	102½
Utica and Sch'y R.R.	125	123
Canton.....	60	62
Farmers Loan.....	66	66

SALES OF STOCKS IN BOSTON.

	Feb. 20.	Feb. 13.
Old Colony Railroad.....	67	67
Boston and Maine R.R.....	106	106
Eastern Railroad.....	102½	102½
Fitchburg Railroad.....	111½	111½
Michigan Central Railroad.....	94½	95
Northern Railroad.....	72½	72
Vermont Central Railroad.....	25½	34½
Vermont and Mass. R.R.....	30½	29
Western Railroad.....	107	108
Ogdensburg Railroad.....	39½	37
Rutland Railroad.....	59	52½
Portland, Saco & Portsmouth R.R. —	99½	99½
Boston and Worcester Railroad.....	106	105½
Rutland Railroad Bonds.....	88	86
Vermont and Mass. R.R. Bonds.. —	88	88
Ogdensburg Railroad Bonds.....	99½	99
Vermont Central R.R. Bonds.....	92½	95

Norfolk County R.R. Bonds.....	74	72
Boston and Providence R.R.....	85	85
Philadelphia, Wilm'gton & Balt. 31	31½	31½
Concord R.R.....	55½	55½
Connecticut river R. R.....	75	76
Cheshire R.R.....	61	62
Boston and Lowell.....	—	115
Boston, Concord & Montreal....	43	43
Nashua & Lowell.....	109	108½
Fall River Railroad.....	—	92½
Sullivan Railroad.....	20	20
Manchester and Lawrence.....	90	90
Worcester and Nashua.....	51½	51

Metallic Measuring Tapes.

Engineers will do well to examine an advertisement of the above article in another column. The warp or woof of the tape is made of a composition pure, which is sufficiently flexible, and preserves its shape and dimensions under all conditions of weather. Its superiority for this reason will be readily understood by engineers. In other respects it is a much more perfect article than any in use. In its preparation, the tape is immersed in a liquid gum, which when cooled, gives it a polish and compact appearance, as if composed of similar materials.

Massachusetts.

Western Railroad.—Below we give an abstract of the report of the directors of this road for the past year:

RECEIPTS AND EXPENDITURES.

The income from various sources, during the year, has been:—	
From passengers.....	\$590,743 33
" freight.....	\$758,187 95
Deduct loss at Albany station.....	\$10,667 20
From other sources.....	747,250 62
	31,349 69
	\$1,369,513 88
Add interest accrued on sinking funds.....	48,057 57
	\$1,417,571 25

The expenses have been:—

For road repairs.....	\$121,655 83
" engine.....	47,123 59
" freight and passenger car repairs.....	67,527 67
" repairs of buildings.....	9,490 87
" transportation expenses.....	236,595 14
" general expenses....	25,156 26
	\$607,549 39
Loss on Pittsfield and North Adams road...	7,851 59
Paid two dividends of four per cent each...	412,000 00
Paid balance of interest.....	286,857 33
Paid into sinking funds.....	50,000 00
Amount added to the sinking fund by accumulation of interest on that fund in the hands of the commissioners.....	48,057 57—1,412,315 85
Payment into the contingent fund..	5,255 40
Contingent fund Nov. 30, 1849.....	195,022 05
	200,277 45
Deduct A. Ware's defalcation.....	51,524 04
Deduct balance of errors and omissions in settling A. Ware's book.....	26,723 72— 78,247 76
Total surplus of contingent fund, November 30, 1850.....	\$122,029 69

There has been charged for new work the sum of \$44,978 50. This is an addition to the ordinary repairs, by which the road bed and machinery have been maintained in excellent condition.

CONSTRUCTION.

The total means provided have been:

From 51,500 shares of the Capital Stock.....	\$5,150,00 00
From £899,900 sterling bonds, bearing interest at 5 per cent, at £1,80 the pound sterling.....	4,319,520 00
From Albany 6 per cent bonds.....	1,000,000 00

Total means.....	\$10,469,520 00
Am't paid Albany sinking fund.....	\$100,000 00
Am't paid Mass. sinking fund.....	146,447 52
Am't paid the sinking fund from proceeds of shares.....	213,111 10
	459,578 62

Net means provided.....	\$10,009,941 38
The total cost of road and equipment, as per table annexed.....	9,963,708 94

Leav'g a bal. of construction fund unexpended.....	\$46,232 44
--	-------------

The bridge over the Connecticut river must be rebuilt ere long for two tracks instead of one. A part of this expenditure will be chargeable to balance of construction fund.

No inconvenience is experienced for the want of the second track of nine miles between Worcester and Springfield, at present. The laying of the track may be postponed.

SINKING FUNDS.

The value of the Mass. sinking fund Nov. 30, 1850, is.....	\$614,090 48
Value of the Albany fund.....	291,070 12

Total value of both funds.....	\$905,169 60
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PITTSFIELD AND NORTH ADAMS RAILROAD.

The receipts of the road have been as follows:—

From passengers.....	\$16,643 07
" freight.....	15,871 50
" mails, rents.....	90 45
	32,605 02

The expenses have been:

For road repairs.....	\$3,924 96
" engine repairs.....	350 79
" car repairs.....	708 98
" transportation expenses.....	7,443 79
For general expenses.....	998 13
	13,156 61

Net earnings.....	\$19,148 41
Amount charged to Trustees of P. & N. A. R. R. guarantee fund account, for deficiency.....	7,851 59

\$27,000 00

Paid two dividends of 3 pr. cent each	27,000 00
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New York Railroads--Report of the State Engineer.

We give in our present number, the annual report of the State Engineer, accompanying the returns of the New York railroads. The tables accompanying the reports, and which present a complete abstract of the returns, we shall publish as fast as we can find room for them. As statistical documents they are very interesting and contain more valuable information in relation to the running of railroads than can be found in the returns of any other State.

Adding to the roads returned, those in operation, and we have an aggregate length of line of 1448 miles in this State. The present year will add very largely to this amount. Among the leading lines to be opened are the Erie, Hudson river, Harlem, and the Rome and Watertown. A number of other lines will be opened within the next twelve months.

Railroads in the West.

Lafayette and Indianapolis Railroad.

It is very difficult for a person whose attention is not particularly devoted to the subject, to form an adequate idea of the extent of the railroad enterprises in progress in the west. It is almost as equally impossible for us in the Eastern States to realize the importance of the leading lines in that section, both from their relation to the general commerce of the whole country, and their local business. In external appearance all parts of the great valley have sprung simultaneously into that maturity, which requires, and which can now supply to itself all those instruments necessary to the convenience of business, as well as the comfort and gratification of its inhabitants. Railroads there are felt to be important, just in proportion as its people are removed from a market, and the great business centres of the country; and as the extremely low cost of construction, places these works within the ability of the people of every fertile and tolerably well settled section, with such aid as may be obtained by a pledge of their own means, it is no exaggeration to say, that they are engrossing the attention of every town and county in that portion of the Union.

Most of the lines there projected have been selected in reference to the wants of the community at large, rather than the interest of particular localities, the uniform character of the country allowing the greatest freedom in the choice of routes. In the location of routes, the connection of the leading avenues of travel, and the great depots of business, far outweigh all considerations of minor importance. The route of commerce from the Atlantic States to the west, must be by the great lakes. These, by the Erie canal, have their outlet at New York, from which they penetrate at least fifteen hundred miles into the interior. The Mississippi and its branches are the great channels of communication with the Gulf of Mexico. Through the former channels are received the manufactures of the Eastern States and foreign importations. Through the latter, the tropical productions of the gulf, such as sugar, molasses, coffee, etc., together with some other heavy articles of merchandise. For nearly one thousand miles, the great lakes on the one hand, and the Ohio river on the other, run nearly parallel, though in an opposite direction. The natural lines of railroad therefore in the west, and such as are coincident with the lines of business, are those which connect these two great water courses. These not only open outlets for the products of the intermediate country, but are the channels through which the merchandise received through the great avenues referred to, pass from one to the other, to be distributed over the country. The natural lines of trade are always at right angles with parallels of latitude, though they may also exist in other directions, from difference in soil or the pursuits of its inhabitants.

In this view, one of the most important points in the United States is the south shore of Lake Michigan. This, to a certain extent, is the key of the railroad system of a very important portion of the country. This lake, in connection with Lake Superior, presents an impassable barrier for five or six hundred miles in a northern and southern direction, to the continuation of railroad lines running east and west. All these must sweep around its southern boundary. The recent contests between the two Michigan railroads for the exclusive right

of way through the northern part of Indiana proves the value of this monopoly.

The same point, too, must be the terminus of a number of very important lines. One of these will run to the Mississippi at its junction with the Ohio—and another will be extended to Indianapolis, and thence to Louisville and Cincinnati. These are the great points of trade on the Ohio, and must always have a very intimate business connection with Lake Michigan. They will be connected with the extreme south, not only by the Ohio, but by lines of railroad rapidly approaching their completion. From these cities, roads are also in progress to Indianapolis, which will be completed in about a year. From Indianapolis, these lines will be carried to Lafayette by the *Lafayette and Indianapolis railroad*. The grading of this road is entirely under contract. The necessary amount of iron has been purchased, to be delivered early in the spring, and the whole line will probably be put in running order in about a year from the present time. The distance from Lafayette is the only portion of this great through line that yet remains untouched. Operations here must soon be commenced.

In looking at a map of the country, we are more struck with the importance of the Lafayette road from its relation to other railroads, and as a portion of a great through line, than as a local work. But in this respect it occupies the exact route for a large local traffic, in running at right angles to the lake, and to the Erie and Wabash canal, the outlet for the produce of northern and central Indiana.—It traverses one of the finest portions of that State, or of the west, the produce of which must pass over this, either in a northerly or southerly direction. As far as fertility of soil, capacity for production, or extent of territory dependent upon it are concerned, its advantages are equal to almost any line in the west.

The resources of the company at present are \$225,000 stock subscription, and the proceeds of \$350,000 of bonds, issued for the purchase of iron. Of the stock subscription \$75,000 have been expended on the road, leaving \$150,000 yet available for grading, etc. The additional sum of \$150,000 is also expected from the corporate subscription of the city of Lafayette, which, with the foregoing, will furnish ample means for the construction and equipment of the road.

The following, copied from the engineer's statement, shows the general character of the route:—

"The entire length of road from the depot at canal in Lafayette to the depot in Indianapolis is 62.36 miles. Of this, 54.43 miles are tangent lines, and 7.79 miles curved. The minimum radius of curvature is 1910 feet, and is employed but for a short distance, and in but one instance; the radius for 7 miles of the curved portion of this road is 5,730 feet. Total amount of curvature 441°. The maximum gradient is 42 feet per mile, and is employed only in ascending out of the valley of the Wabash. The ruling gradient in the direction of the heavier transit is 35 feet per mile. The ground over which the road passes, except at the crossings of four valleys, is remarkably smooth and unbroken, and a general view of the profile of the road exhibits a succession of light and gentle inclinations, barely sufficient for the thorough drainage of the road bed. No mechanical or engineering difficulties occur along the whole line; but the work is of remarkably light and easy character.—But four considerable streams are crossed—the aggregate spans of which are 700 feet. A full supply of gravel for ballasting of the road can be obtained from the cuts. There is an inexhaustible supply of timber along nearly the whole route, and excellent stone at either end of the road.

Below I furnish an estimate of the cost of completing the road ready for the iron.
To finish the entire grubbing and grading.....\$67,872 00
To finish the entire grubbing and bridging..... 16,642 00
Timber for superstructure, 62-36 miles, a \$641 25..... 39,988 35
Timber for superstructure, for 1½ miles turn outs..... 961 87
Laying track, a \$350..... 21,826 00

\$147,280 22"

DIRECTORS.

Cyrus Ball, Lafayette.
Thomas T. Benbridge, do.
Joseph S. Hanna, do.
John Purdue, do.
William F. Reynolds, do.
Albert S. White, do.
Samuel Cason, Boone County.
H. G. Hazlerigg, do.
Samuel S. Strong, do.
William Zion, do.
Harvey Bates, Indianapolis.
James Blake, do.
Nathan M. Stockwell, New York.
A. S. WHITE, President and Secretary.
CYRUS BALL, Treasurer.
BACKUS FORD, Engineer.

Tennessee.

Memphis and Charleston Railroad.—The vote was taken in Marshall county, Miss., on the 7th ult., on the proposition to authorize the board of police to subscribe for \$100,000 worth of stock in the Memphis and Charleston railroad. As far as heard from, the vote stands 859 for it, to 149 against it. This stock is to be taken on condition that the road is run through Holly Springs.

Maryland.

Business of the Baltimore and Ohio Railroad.—The following are memoranda of the business upon the Baltimore and Ohio railroad, for the month of January, 1861:

	For passengers	For freight.
Main Stem.....	\$25,298 63	\$90,450 10
Washington Branch....	20,140 18	4,607 14
	\$45,438 81	\$95,057 24

Making an aggregate of \$115,748 70 on the Main Stem, and \$24,747 32 on the Washington Branch—the total being \$140,496 02.

The above compared with the corresponding month of last year, shows an increase of \$27,251-17, being \$24,501 99 on the Main Stem, and \$2,459 18 on the Washington Branch.

New York.

Hudson River Railroad.—It is stated that the Hudson river railroad company has taken a lease of the Troy and Greenbush railroad, for the remaining term of its charter, for \$19,250, being seven per cent on \$275,000—the capital of the said road. This movement has been made, probably, with the view of preventing the northern trade from going to the eastward. The Troy and Greenbush railroad is about six miles in length.

Pennsylvania.

York and Cumberland Railroad.—This new avenue of intercommunication, by which the city of Baltimore is brought into new and closer relations of reciprocal trade with the Cumberland and Juniata Valleys, and other adjacent sections of Pennsylvania, is now in regular and successful operation. The passenger trains between Baltimore and Harrisburgh run through in less than four and a half hours, at the cheap rate of two dollars and twenty-five cents for each passenger. The freight trains are also in regular daily operation, bringing to this market the products of the agri-

cultural industry of the region referred to. On Wednesday of the present week there was an arrival of a train of 70 full laden cars, some of which brought produce from the upper Juniata Valley, within ten miles of Hollidaysburg. The trade opens with every promise that it will be one of steadily growing value, importance and reciprocal benefit, both to Pennsylvania and Baltimore. —*Baltimore American.*

Hempfield Railroad.—We understand that this company have obtained the right of way through Virginia, so that no legal obstacle exists to the construction of the road. The Pittsburgh people are confident that it will not be built. They say that the line is an enormously expensive one, and that it cannot be carried out without the aid of Philadelphia. It is alleged that it would be bad faith in that city to aid a work which might injure Pittsburgh, considering what the latter has done for the advantage of the former, in the aid she has given to the Ohio and Pennsylvania, and Pennsylvania Central railroads. On paper the Hempfield line appears to be a good one. Whether it will be built is still a matter of doubt.

Ohio.

The first train of cars passed on the Cleveland and Columbus railroad on the 18th instant. We learn that a portion of the Cleveland and Pittsburgh railroad is to be opened to-day.

Railroad from the Cleveland and Pittsburgh Railroad to Akron.—The people of Akron and of that vicinity are actively engaged upon a project for a railroad from Hudson in the Cleveland and Pittsburgh, to the former place. About \$85,000 have been subscribed for this purpose. There appears to be a good prospect that the road will be built; and if so, it will very probably be extended so as to connect with the Ohio and Pennsylvania railroad, and perhaps still further southward.

Greenville and Miami Railroad.—The directors of this road for the present year, are:—E. B. Taylor, Isaac N. Gard, John Wharry, J. D. Farrar, Adam Koogler, Chris. Folkerth, D. R. Davis, Lemuel Rush, John Deardoff, E. Deming, John Spray, Henry Arnold, Herman Gebhart, (Dayton). President.—E. B. Taylor. Engineer.—Phineas Pomeroy.

Steubenville and Indiana Railroad Company.—The following are the directors for the ensuing year:

Daniel Kilgore, Steubenville, Ohio; John Andrews, do. do; James Means, do. do; Wm. McDonald, do. do; James Parks, do. do; Thompson Hanna, do. do; Wm. K. Johnson, Coshocton, do. President.—Daniel Kilgore. Chief Engineer.—J. Blickensderfer, Jr. Assistant Engineers.—Abner L. Frazer, John Woodlee.

Missouri.

The bill for a state subscription of \$3,000,000 to the Pacific, and the Hannibal and St. Josephs railroad, has become a law of this State. The preliminary survey of the route of the Pacific railroad have been completed, and the final location of the road will be immediately determined upon.

Alabama.

Mobile and Ohio Railroad.—This company have recently held their third annual meeting, at which the old Board was re-elected namely:

B. E. Gray, Kentucky,	D. Stodder, Mobile.
J. W. Campbell, Tenn.	M. Waring, do.
J. M. Cunningham, Miss.	J. C. Hodges, do.
Sidney Smith, Mobile.	C. Gascoigne, do.
J. Emanuel do.	J. A. Campbell do.
F. B. Clark, do.	G. N. Stewart do.

John Bloodgood, Mobile.

We have not yet read the report of the company, but we understand that the graduation upon the first thirty-three miles is now nearly completed.

This portion will be ironed and in operation, it is believed, at any early day the coming summer.

It is estimated that the amount of land granted to this company by the general government will equal 1,000,000 acres, from which will be probably realized \$2,000,000.

The counties on the line of the Mississippi are preparing to vote subscriptions to the stock. From these sources about \$1,000,000 is expected to be obtained.

The company is represented to be in a very flourishing condition. Upon the receipt of its report we shall give a more detailed account of its operations.

New Hampshire.

Cheshire Railroad.—From the report of the directors of the Cheshire railroad, which has just been published, it appears that the entire cost of the road and its equipment to January 1st, 1851, including interest paid to stockholders prior to May 1st, 1849, and discount made on bonds and stock up to the present time, is \$2,739,318 10. By deducting such interest and discount, the real cost appears to be about \$2,300,000. The gross receipts of the road for the year ending with 1850, have been \$208,414 38—increase over the year preceding \$43,450-84,—being something more than 25 per cent. The expenses of operating the road the past year, including the sum of \$12,710 42 for State taxes, and for repairing the damage done in Walpole by the July flood, have been \$92,587 42. Balance of earnings over expenses, \$115,826 96. Of this sum \$84,654 63 have been paid for the interest on bonds and debts of the company to January 1st, 1851, which includes \$16,666 95 paid as extra interest. This leaves in the hands of the company of the earnings of the road the past year, \$31,172 33. Two of the largest class locomotives have been purchased this year, making the whole number eleven. The floating debt is \$134,143 36.

Manchester and Lawrence Railroad.—At the annual meeting of the stockholders of the above named road, holden at Manchester yesterday, Edward Crane, Benjamin E. Bates and Thomas W. Pierce, of Boston, John Tenney of Methuen, Geo. H. Dodge of Hampton Falls, John N. Anderson of Londonderry, and Wm. G. Means of Manchester, were chosen directors of the road for the ensuing year, by a very large majority.

Indiana.

Northern Indiana Railroad.—The Chicago Tribune states that the Northern Indiana railroad bill passed both houses of the Indiana legislature, on the 3d inst. It authorizes a road from Michigan city east—gives no monopoly, no right to connect with other roads. It gives the right to borrow money at 8 per cent, and to sell bonds at 90. Provides that the road shall be built to Toledo in six years, and that it may pass by the way of La Porte, South Bend, Elkhart, and Bristol, to Michigan State line.

The line between Chicago and Michigan City is not touched by the Indiana legislature.

Massachusetts.

Troy and Greenfield Railroad Company.—The annual meeting of this company was held at Charlemon, on Wednesday, the 4th inst. The meeting was very large, and a becoming energy and spirit was manifested. The reports of the directors and treasurer were presented.

The following gentlemen were chosen as directors for the ensuing year:—

Columbus Tyler, of Boston; John L. Tucker, of Boston; Henry Chapman, of Greenfield; Cephas Root, of Greenfield; E. G. Lamson, Shelburne Falls; R. H. Levitt, of Charlemon; John Porter, of Buckland; E. Rice, of Florida; James E. Marshall, of Adams; E. S. Hawks, of Adams; L. C. Thayer, of Adams; S. V. R. Hoxie, Williams-town; Daniel Wells, of Cambridge.

The Hudson River Railroad.

The Troy Post gives the annexed statement of the arrangements between the Hudson River and the Troy and Greenbush roads:—

"The Hudson River company have obtained a lease of the Troy and Greenbush railroad, with all its implements and fixtures, for the term of its charter—30 years—and for all future renewals, paying for the same 7 per cent annually on \$275,000—payments to be made semi-annually. The lease requires of the Hudson river company that they shall run all their through trains directly to and from Troy, thus making this the northern terminus of their road. They are also required to keep up the local business of the Troy and Greenbush railroad, running the cars as now for local accommodation and transportation.

"We are informed that the Hudson river company will, immediately after coming into possession of the Troy and Greenbush railroad, construct a double track, straightening the same so as to lessen the distance, and putting down a new and heavier rail than is now used. Some \$150,000 will be expended for this object the ensuing summer, and it is expected that the work will be completed, a new track or tracks constructed through the city—everything in order—sometime during the ensuing fall.

"The Hudson river railroad will be completed between Hudson and Greenbush in May next, when trains will be run direct from Troy to Hudson, and in September the whole line will be finished and the cars running from Troy to New York."

North Carolina.**Wilmington and Raleigh Railroad.**

We have received the 15th annual report of this company, submitted at a meeting of its stockholders held at Wilmington on the 14th of November last. The receipts for the year ending September 30th have been as follows:—

From through passengers.....	\$193,706 67
Way passengers.....	62,382 62
Steam boat freights, meals, &c.....	14,229 76
Railroad freights.....	71,051 26
Transportation of mail, rents, &c.....	80,954 81
	\$422,325 12

Expenditures.

Steamboats.....	12,838 96
Fuel.....	27,586 82
Subsistence and pay of officers and crews....	63,106 38
	\$103,532 16

Transportation.

Repairs of locomotives, including one built in shop.....	15,671 45
Cost of 2 new locomotives.....	15,069 26
Coaches and cars including cost of 4 new passenger and 10 new freight cars.....	19,587 81
Pay of locomotive runners Cond'rs., hands and station expenses.	48,688 51
	\$99,017 03

Road Repairs.

Pay of overseers and hands.....	25,112 24
Subsistence and clothing.....	10,124 99
Cost of materials.....	36,736 69
	\$71,973 92
Office expenses for stationary, &c.....	241 42
	274,764 53

Leaving a balance in favor of receipts over expenditures for ordinary purposes of.... **\$147,560 50**

The cost of reconstruction has been as follows, viz:—

Iron.....	\$451,926 56
Sills or cross ties.....	20,842 58
Spikes.....	24,508 06
Labor of relaying.....	6,896 29
	\$504,973 49

This amount has been paid for as follows:—

Company's mortgage bonds, payable in London in 1867.....	\$355,555 56
Bonds to the United States for duties, in 1, 2, 3, and 4 years.....	39,424 13
Bonds payable at bank.....	32,600 00
From the current receipts of the year	77,393 80
	\$504,973 49

The net amount of profits for the past year, including cash on hand at its commencement, was..... **161,845 69**

This sum has been appropriated as follows:—

To payment of debt.....	68,945 35
" " interest.....	62,341 89
Miscellaneous.....	3,942 60
Cash on hand.....	27,065 85
	\$161,845 69

The debt of the company amounts to \$1,073,322 69, showing an increase of \$436,028 14 over the debt at the close of the past year. The company propose, if the authority can be obtained for that purpose, to increase its capital stock to \$2,500,000, which would about represent the cost of the road. The amount of stock disposed of is \$1,333,300. The amount of debt is \$1,073,322 69, and if the additional stock should sell at par, the stock to be issued to make up the proposed amount would yield \$88,377 31 above the liabilities of the company.

The net receipts for the past year were equal to about 6 per cent on \$2,500,000.

Since the last report, 8,733 tons of heavy rail have been received, and about 86 miles have been laid with this, and 27 miles with a flange rail, making the whole relaid 113 miles. It is expected that the relaying of the whole line will be completed early the present year. In speaking of the future prospects of the road the report says:

"Within a few months, you will own a road inferior to but few in our country in its substantial and permanent construction, and superior to all others in its freedom from curves, its easy grades and consequently to the speed, security and certainty with which the traveller may be transported over it. With our expenditures for repairs of road, repairs of locomotives, coaches and cars, greatly diminished, our receipts from all sources largely increased by reason of the improved condition of our road; with the Seaboard and Roanoke road on the north, the Wilmington and Manchester on the south, and the North Carolina road on the west, added as new tributaries to our line, have we not an assurance that that our hopes so long deferred will yet most certainly be realized, and that the amount of dividends to ourselves, rather than the amount of our debts to others may ere long be the leading subject of our deliberations."

The present prospects of the company are much more encouraging than at any former time. The work of reconstruction now going on, will constitute this a first class road, and greatly increase its capacity for business and reduce the cost of maintenance. During the past year, under all the inconveniences of the old and dilapidated track, the road has earned a dividend of about 6 per cent upon the cost of reconstruction. With its increased efficiency, its earnings must be largely augmented. The opening of the Wilmington and Manchester railroad, connecting the railroads of South

Carolina, Georgia and Alabama, and those of the north will be a great event for the Wilmington and Raleigh road, and must very largely add to its business. It will then become the favorite route for the through travel for a large portion of the south, much of which takes the steamers running from the northern ports to Savannah and Charleston.—

After years of struggling, in consequence of a faulty construction in the outset, and from the want of suitable connection with other lines of railroad, this seems to be now in a fair way of taking its place among our profitable lines of railroad. For this success it is indebted in no small degree to its present management.

The directors on the part of the stockholders for the present year are Alex. McRae, President; P. K. Dickinson, E. B. Dudley, Gilbert Potter, O. G. Parsley, W. A. Wright, and John D. Bellamy.

Ohio and Pennsylvania Railroad.

In our paper of the 25th ult., we published an abstract of the third annual report of this company. We now give the estimated cost of this work, as made by the chief engineer, S. W. Roberts, Esq., January 1, 1851.

Grading and bridging, 107 miles, 77 miles single track, and 30 miles double track, average cost \$6,682 per mile..... **\$715,000**

Superstructure, with heavy iron rails, of 60 lbs. per yard, 107 miles of single track, and 7 miles of sidings, making 114 miles of single track, at \$8,000 per mile..... **912,000**

Turnouts, water stations, depot buildings and workshops..... **100,000**

Estimated cost of construction..... **1,727,000**

Contingencies and engineering..... **43,000**

Add for land damages, purchases of land, right of way and fencing..... **135,000**

Estimated cost of railroad from Pittsburgh to Massillon..... **\$1,905,000**

Equipment of locomotives and cars, for working the road the first year..... **180,000**

\$2,085,000

Grading and bridging 185 miles, 150 miles single track, and 35 miles double track. Average cost \$5,973 per mile..... **\$1,105,000**

Superstructure, with heavy iron rails of 60 lbs. per yard, 185 miles of single track, and 10 miles of sidings, making 195 miles of single track, at \$8,000 per mile..... **1,560,000**

Turnouts, water stations, depot buildings and work shops..... **150,000**

Estimated cost of construction..... **2,815,000**

Contingencies and engineering..... **75,000**

Add for land damages, purchases of land, right of way and fencing..... **180,000**

Estimated cost of railroad..... **3,070,000**

Equipment for locomotives and cars for working the road the first year..... **300,000**

\$3,370,000

TREASURER'S REPORT.

Amount received from stockholders in payment of instalments..... **\$796,295**

Amount expended for construction, grading and masonry..... **\$426,083 77**

Land damages..... **49,072 75**

Expenses..... **8,675 52**

Engineering..... **38,932 61**

Agents in New York..... **217,800 00**

Treasurer and assistants..... **55,730 35**

\$796,295

USURY LAWS OF NEW YORK.

An Act to amend title three, of chapter fourth, of part second of the revised statute, entitled "Of the interest of money."

The people of the State of New York, represented in Senate and Assembly, do enact as follows:—

Sec. 1. No contract or agreement for the payment of money with interest, or upon which interest has been received, contracted for, taken or reserved after a greater rate than is allowed by law, shall be thereby rendered void. In any action brought on such contract or agreement, whenever the defense of usury shall be interposed, and a trial thereon shall be had, and it shall appear on said trial that a greater rate of interest has been received, contracted for, taken or received, than is allowed by law, the plaintiff shall recover judgment of the amount due of principal and legal interest only, beside costs; but if on such trial it shall further duly appear that the defendant tendered to the plaintiff such amount before the commencement of such action, the defendant shall recover his full costs of suit, and costs shall not be allowed the plaintiff.

Sec. 2. All acts, penalties and forfeitures in reference to the interest of money, inconsistent with the provisions of this act, are hereby repealed.

Maine.

Atlantic and St. Lawrence Railroad.—The receipts of this road for the six months commencing July 1, 1850, and ending December 31, show a very favorable result, and are as follows:—

From passengers.....	\$46,656 49
From freight.....	39,938 01
For mail service.....	1,628 50
For rents.....	3,765 12

\$91,988 12

The disbursements for operating the road for the above six months.....	30,298 21
--	-----------

Net earnings for the six months ending Dec. 31, 1850..... \$61,689 91

It will be recollected that the above receipts are from operating the road from Portland to South Paris, a distance of 47½ miles, which is as far as the road has been opened. The road will be opened in a few days from South Paris to Bethel a further distance of 22½ miles.

The whole cost of the road from Portland to South Paris including equipment and cost of its extensive depot grounds, wharves and stores, &c., in Portland, is \$1,521,646 96 which it will be seen gives to the stockholders on the investment for the last 6 months net earnings of the road, within a fraction of four per cent, or at the rate of eight per cent annually. This result has greatly exceeded the expectations of the most sanguine friends of road. There has been a gradual increase of the business of the road since it was opened, and there is no reason to doubt a continued and large increase of its business and receipts.

Pennsylvania.

A project is on foot to build a railroad from Pittsburgh to Olean, on the Erie railroad, and a convention is called for the 22d inst., to consider the plan. The Pittsburgh Gazette says:

We believe the plan which would now gain the largest number of suffrages is, a railroad to the mouth of Clarion, thence up that stream to its source, thence across the table land or summit between the sources of the Clarion, and those of the Allegheny itself—which, singularly enough, here flow in opposite directions—thence down the latter to Olean, or near it, where it would unite with the great road to New York. This would open a communication between western Pennsylvania and western New York, a most desirable consummation. Some are in favor of adopting the old Sunbury and Erie survey, at the point where it reaches the Clarion, and following it eastward to the Williamsport and Elmira railroad, reaching the New York and Erie railroad at the latter place. These questions of routes will be settled hereafter, and we think it would be premature to discuss them now. We will say one thing, however, if we de-

sire the aid of the friends of the New York and Erie road, we must aim for Olean; but if the people along the other route can dispense with that aid, then it will be only a question of distance, grade, etc.

Finances of Pennsylvania.

The finances of this State are set forth in the Governor's Message as follows:

Amount of debt due on the 30th November last, \$40,775,485; stock and cash in hands of commissioners of sinking fund, \$465,090; interest saved of special loan in the discontinuance of plane, \$400,000 which deducted leaves \$39,910,394, a decrease of public debt since 1848 of \$538,203.—About \$457,946 were extraordinary expenses, to avoid the inclined plane, and to complete the North Branch canal. These completed, nearly one million of dollars may be appropriated annually to the reduction of the public debt. The receipts of the treasury last year were \$5,438,131, being less than the estimates \$128,167. The estimated expenditures were \$4,034,000; actual payments, \$4,553,193. The estimates for 1851 are—receipts, \$4,296,000; payments, \$4,101,300.

New Jersey.

The annual report of the State directors of the joint companies (Delaware and Raritan canal and Camden and Amboy railroad company) was presented to the New Jersey Legislature on Wednesday, detailing the operations of the companies during the past year. The following table will show the number of, and receipts from passengers arrived over the road:—

	No.	Receipts for passage.	Transit duties to State.
From Philadelphia to New York (1st class).....	24,060	\$62,175 00	\$2,406 00
Phila. to N. York (2d and 3d class).....	19,114	34,840 34	1,911 40
N. Y. to Phil. (1st class).....	24,467	73,401 50	2,466 70
N. Y. to Phil. (2d and 3d class).....	36,815½	56,638 29	3,681 07
Excursion passage from Philadel. to New York.....	595½	2,362 60	119 10
Excursion passage from New York to Philadelphia..	122½	1,422 36	24 50
Way pass. from New York to Philadelphia....	787½	3,895 36	73 75
Way pass. from Philadelphia to Amboy.....	219½	548 75	21 95
Way pass. from New York to Bordentown.....	1,270	2,821 21	121 70
Way pass. from New York and Burlington.....	2,774½	6,935 18	277 49
Way pass. from New York and Rancocas.....	465	1,047 34	46 50
Way passengers who pay no transit:—			
Between Spotswood, New York and Philadelphia....		1,464 34	
Between Hightstown, New York and Philadelphia.		3,140 33	
Between Sandhill, New York and Philadelphia....		1,230 99	
Passage money fm. steamboat and railroad passengers bet'en Trenton, Bordentown, Burlington, Bristol and intervening places and Philadelphia....		7,070 36	

ENGINEERS.

Atkinson, T. C.,

Alexandria and Orange Railroad, Alexandria, Va.

Clement, Wm. H.,

Little Miami Railroad, Cincinnati, Ohio.

Cozzens, W. H.,

Engineer and Surveyor, St. Louis, Mo.

Alfred W. Craven,

Chief Engineer Croton Aqueduct, New York.

Floyd-Jones, Charles,

Alton and Sangamon Railroad, Alton, Illinois.

Gzowski, Mr.,

St. Lawrence & Atlantic Railroad, Montreal, Canada.

Grant, James H.,

Nashville and Chattanooga R. R., Nashville, Tenn.

S. W. Hill,

Mining Engineer and Surveyor, Eagle River, Lake Superior.

Holcomb, F. P.

Southwestern Railroad, Macon, Ga.

Latrobe, B. H.,

Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,

Buffalo and Conhocton Valley Railroad, Bath, N. Y.

Morris, Elwood,

Schuylkill Navigation, Schuylkill Haven, Pa.

Nott, Samuel,

Lawrence and Manchester Railroad, Boston,

Prichard, M. B.,

East Tennessee and Georgia R. R., Cleveland, Tenn.

W. Milnor Roberts,

Bellefontaine and Indiana Railroad, Marion, Ohio.

Roberts, Solomon W.,

Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Sanford, C. O.,

South Side Railroad, Virginia.

Steele, J. Dutton,

Pottstown, Pa.

Trautwine, John C.,

Civil Engineer and Architect, Philadelphia.

Tinkham, A. W.,

United States Fort, Bucksport, Me.

Troost, Lewis,

Alabama and Tennessee Railroad, Selma, Ala.

Whipple, S.,

Civil Engineer and Bridge Builder, Utica, N. Y.

HOTELS.

Exchange Hotel,

Adjoining Eastern Railroad Depot, BUFFALO, N. Y.

BY..... FISK & SPERRY, Late of Delevan House, Albany.

MANSION,

Corner of Maine and Exchange Streets, P. DORSHIMER. BUFFALO.

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MONUMENT SQUARE, BALTIMORE.

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Agent of Frostburg Coal Co.
No. 50 Wall Street, New York.**Henry I. Ibbotson,**IMPORTER of Sheffield and Birmingham Goods.
Also, Agent for the Manufacture of Telegraph Wire.
218 PEARL ST., NEW YORK.**Charles T. Jackson, M. D.,**

STATE ASSAYER, late Geologist to Maine, Rhode Island, New Hampshire, and the United States, offers his services to his friends and the public in making any Chemical, Mineralogical or Geological researches that may be required for the improvement of Agriculture and the Manufacturing Arts. Particular attention will be paid to the exploration of mines and to assaying of ores of the metals.

State Assayer's office, 31 Somerset st.
Boston Sept. 3, 1850.**STEEL AND FILES.**

R. S. Stenton,

20 CLIFF STREET, NEW YORK,

AGENT FOR

J. & RILEY CARR,BAILEY-LANE WORKS, SHEFFIELD,
Manufacturers of Cast, Shear, German, Blister, and**Spring Steel,**

Of all descriptions, Warranted Good.

FILES.

Manufacturers of Machinists' Warranted Best Cast Steel Files, expressly for working upon Iron and Steel, made very heavy for recutting.

A full Stock of Steel and Files at all times on hand. 6m4

Walter R. Johnson,

CIVIL AND MINING ENGINEER AND ATTORNEY for Patents. Office and Laboratory, F St., opposite the Patent office, Washington, D. C.

Dudley B. Fuller & Co.,IRON COMMISSION MERCHANTS,
No. 139 GREENWICH STREET,
NEW YORK.**Manning & Lee,**GENERAL COMMISSION MERCHANTS,
NO. 51 EXCHANGE PLACE,
BALTIMORE.

Agents for Avalon Railroad Iron and Nail Works. Maryland Mining Company's Cumberland Coal 'CED'—'Potomac' and other good brands of Pig Iron.

Samuel Kimber & Co.,
COMMISSION MERCHANTS

WILLOW ST. WHARVES, PHILADELPHIA.

AGENTS for the sale of Charcoal and Anthracite Pig Iron, Hammered Railroad Car and Locomotive Axles, Force Pumps of the most approved construction for Railroad Water Stations and Hydraulic Rams, etc., etc.
July, 27, 1849.

James Herron, Civil Engineer,OF THE UNITED STATES NAVY YARD,
PENSACOLA, FLORIDA,

PATENTEE OF THE

HERRON RAILWAY TRACK.

Models of this Track, on the most improved plan, may be seen at the Engineer's office of the New York and Erie Railroad.

PLUSHES

FOR

Railway Cars & Omnibuses.**F. S. & S. A. MARTINE,**

112 WILLIAM ST., NEAR JOHN.

ARE now receiving a large and complete assortment of Plain and Figured PLUSHES, of their own importation, which will be sold at the lowest market price, viz: Crimson, Maroon, Scarlet, Green, Blue, Purple, etc.

ALSO—CURLED HAIR, the best manufactured in market.

To Railroad Companies, Machinists, Car Manufacturers, etc., etc.**CHARLES T. GILBERT,**

NO. 80 BROAD ST., NEW YORK,

IS prepared to contract for furnishing at manufacturer's prices—
Railroad Iron,
Locomotive Engines,
Passenger and Freight Cars,
Car Wheels and Axles,
Chairs and Spikes.

Orders are invited; and all inquiries in relation to any of the above articles will receive immediate attention.

Manufacture of Patent Wire ROPE AND CABLES,

For Inclined Planes, Suspension Bridges, Standing Rigging, Mines, Cranes, Derrick, Tilters, &c., by
JOHN A. ROEBLING, Civil Engineer,
TRENTON, N. J.

FORGING.**Ranstead, Dearborn & Co.,**

MANUFACTURERS OF

LOCOMOTIVE CRANKS AND CAR AXLES,

ALSO

WROUGHT IRON SHAFTING,

And All Kinds of Hammered Shapes.

Office 25 Foster's Wharf, Boston.

Samuel D. Willmott,MERCHANT, AND MANUFACTURER OF
CAST STEEL WARRANTED SAWS,
—AND FILES—

IMPORTER OF THE

GENUINE WICKESLY GRINDSTONES
NO. 8 LIBERTY STREET,
NEW YORK.**Railroad Instruments.**

THEODOLITES, TRANSIT COMPASSES, and Levels, with Fraunhoffer's Munich Glasses, Surveyor's Compasses, Chains, Drawing Instruments, Barometers, etc., all of the best quality and workmanship, for sale at unusually low prices, by
E. & G. W. BLUNT,

No. 179 Water St., cor. Burling Slip.
New York, May 19, 1849.**IRON.****Iron.**

Pig Iron, Anthracite and Charcoal; Boiler and Flue Iron, Spring and Blistered Steel, Nail Rods, Best Refined Bar Iron, Railroad Iron, Car Axles, Nails, Stove Castings, Cast Iron Pipes of all sizes, Railway Chairs of approved patterns for sale by
COLEMAN, KELTON & CAMPBELL,

109 N. Water St., Philadelphia.

Stickney & Beatty,

DEALERS IN IRON AND IRON MANUFACTURERS.

AGENTS for the Balt. City Rolling Mill, from which establishment they are prepared to furnish Ellicott's round, square, and flat bar iron, puddled and charcoal boiler plates and billet iron—also agents for the sale of the Laurel, Gunpowder and Locust Grove (Balt.) large pig irons, Locust Grove and Laurel Irons for car wheels, Caledonian boiler blooms made from cold blast iron, Old Colony and anti-Eatam nails, Wm. Jessop & Son's steel, Coleman's blister steel and nail rods, sheet, hoop, band, oval and common English iron.

Nos. 18 and 20 South Charles st., Baltimore.

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. J. F. WINSLOW, President

Troy, N. Y.

ERASTUS CORNING, Albany

WARREN DELANO, Jr., N. Y.

JOHN M. FORBES, Boston.

ENOCH PRATT, Baltimore, Md

November 6, 1848.

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phoenix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehanna river; which two establishments are now turning out upwards of 1800 tons of finished rails per month.

Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.

REEVES, BUCK & CO.

45 North Water St. Philadelphia.

March 15, 1849

LAP—WELDED WROUGHT IRON TUBES

FOR

TUBULAR BOILERS,

FROM ONE AND A QUARTER TO SEVEN INCHES IN DIAMETER.

THE ONLY Tubes of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER & SON, Patentees,
28 Platt street, New York.**Railroad Iron.**

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron.

THOMAS B. SANDS & CO.,

73 New street,

February 3, 1849.

New York.

Iron Store.

THE Subscribers, having the selling agency of the following named Rolling Mills, viz: Norristown, Rough and Ready, Kensington, Triadelphia, Pottsgrove and Thorndale, can supply Railroad Companies, Merchants and others, at the wholesale mill prices for bars of all sizes, sheets cut to order as large as 58 in. diameter; Railroad Iron, domestic and foreign; Locomotive tire welded to given size; Chairs and Spikes; Iron for shafting, locomotive and general machinery purposes; Cast, Shear, Blister and Spring Steel; Boiler rivets; Copper; Pig iron, etc., etc.

MORRIS, JONES & CO.,

Iron Merchants,

Schuylkill 7th and Market Sts., Philadelphia.
August 16, 1849. 1y33**Glendon Refined Iron.**

Round Iron,	Band Iron,	Hoop Iron,
Square " "	Flat " "	Scroll " "

Axles, Locomotive Tyres,

Manufactured at the Glendon Mills, East Boston, for sale by

GEORGE GARDNER & CO.,

5 Liberty Square, Boston, Mass.

Sept. 15, 1849.

3m37

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for railroad and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.

JOHN F. WINSLOW, Agent.

Albany Iron and Nail Works, Troy, N. Y.

The above Spikes may be had at factory prices. • Erastus Corning & Co Albany; Merritt & Co., New York; E. Pratt & Brother, Baltimore, Md.

RAYMOND & FULLERTON, 45 Cliff st.

Bowling Iron. Stamped B.O.
Railway Tire Bars
Locomotive and other Axles
Boiler Plates
and every other description of this superior Iron.

The subscribers, agents for the sale of Bowling Iron, are prepared to execute orders for importation, especially for railway and machinery uses, with despatch from the manufacturers.

RAYMOND & FULLERTON, 45 Cliff st.

Ibbotson, Brothers & Co's CELEBRATED CAST STEEL

Best Cast Steel Royal Improved Files, well known as better adapted for Engineers' and Machinists' purposes than any now in use in the United States.

Every description of Square, Octagon, Flat and Round Cast Steel, Sheet, Shovel and Railway Spring Steel, etc., and Steel to order for any purposes—manufactured at their works in Sheffield—and universally known by the old stamp "Globe."

HENRY I. IBBOTSON, Agent,
218 Pearl st., New York.

Railroad Iron. SPIKES.

Wrought Iron CHAIRS, New Pattern.

THE Undersigned continues to contract, as usual, for the above articles. The reputation already acquired for their excellent quality is a guarantee that strict attention shall continue to be paid to the wants and interests of purchasers.

CHARLES ILLIUS,
20 Beaver St., New York

WILLIAM JESSOP & SONS' CELEBRATED CAST-STEEL.

The subscribers have on hand, and are constantly receiving from their manufactory,

PARK WORKS, SHEFFIELD,
Double Refined Cast Steel—square, flat and octagon. Best warranted Cast Steel—square, flat and octagon. Best double and single Shear Steel—warranted. Machinery Steel—round.

Best and 2d gy. Sheet Steel—for saws and other purposes.

German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.

Genuine "Sykes," L. Blister Steel.

Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by

WM. JESSOP & SONS,
91 John street, New York.

Also by their Agents—

Curtis & Hand, 47 Commerce street, Philadelphia.
Alex'r Fullerton & Co., 119 Milk street, Boston.
Stickney & Beatty, South Charles street, Baltimore.
May 6, 1848.

Railroad Iron.

B. O. Railway Tires, Railway Wheels,
Scotch Pig Iron, Tin Plates and Banca Tin,
Muntz Patent Metal Sheathing,
Baltimore Copper.

Contracts for Rails made on behalf of the manufacturers, for delivery at any ports in the United States, at fixed prices.

Bowling Tires and Tire Bars and Scotch Pigs imported to order.

Muntz's Ship-sheathing, and a general stock of Tin Plates and Banca Tin in store, and for sale by

IRONDALE PIG METAL, MANUFACTURED
and for sale by the Bloomsburg Railroad Iron Co.
LINDLEY FISHER, Treasurer.
75 N. Water St., Philadelphia.

Faggotted Car and Engine Axles

FORGED by RANSTEAD, DEARBORN & Co.,
Boston, Mass.
These Axles enjoy the highest reputation for excellence, and are all warranted.

Railroad Iron.

3,000 TONS C. L. MAKE 63½ lbs. per yard,
now landing and to arrive.

Also contracts made for future delivery of above superior make English Iron.

300 Tons Banks Best Iron, Round, Square and Flat.

200 " English Bar " " " "

10 " 9-16 Square Iron for Railroad Spikes.
For sale in lots to suit purchasers by

DAVID W. WETMORE.
New York, March 26, 1850. 3m

Railroad Iron.

CONTRACTS made by the subscribers, Agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

JOHNSON, CAMMELL & Co's Celebrated Cast Steel,

AND
ENGINEERING AND MACHINE FILES,
which for quality and adaptation to mechanical uses, have been proved superior to any in the United States. Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cyclops Steel Works Sheffield.

JOHNSON, CAMMELL & CO.,
100 William St., New York.

November 23 1849.

Bowling Tire Bars.

40 Best Flange Bars 5½x2 inches, 11 feet long.
40 " " 5½x2 " 7 feet 8 in. long.
40 " Flat " 6x2 " 11 feet long.
40 " " 6x2 " 7 feet 8 in. long.

Now in store and for sale by
RAYMOND & FULLERTON,
45 Cliff street.

Wheel, Forge and Foundry Iron.

LOCUST GROVE Wheel Iron of great strength and superior chilling property.

Balt. Charcoal Forge Iron, from Patuxent, Curtis Creek and Gunpowder furnaces.

Elkridge Foundry Iron, of superior strength and softness. Anthracite and Charcoal Iron from Pennsylvania and Virginia. Gas and Water Pipes, Lamp Posts from Elkridge furnace.

LEMMON & GLENN,
Sm9 62 Buchanan's Wharf, Baltimore.

S. S. Keyser & Co., IRON WAREHOUSE,

Corner of South and Pratt Streets,
BALTIMORE, MD.

Selling Agents for the Rough and Ready Bar Iron and Elk Boiler and Flue Iron Rolling Mills, Sarah and Taylor Furnaces, and Wrightsville Hollow Ware Foundry, and Dealers in Bar and Sheet Iron, and Cast, Sheer, German, Blister, Spring and Electro-ripped Steel, etc., etc.

Smith & Tyson,

GENERAL COMMISSION MERCHANTS,
No. 25 South Charles St., Baltimore, Md.

AGENTS for the Celebrated Columbia Pig Iron, suitable for Car Wheels and Chilled Rolls.

Columbia refined Charcoal Blooms; Refined Charcoal Juniata Billet Iron for Wire; Refined Iron for Bridging, of great strength; Cut Nails, Spikes, and Brads; Railroad Spikes and Wrought Chairs. 22tf

Tredegar Iron Works.

ROLLING MILL FOUNDRY AND MACHINE SHOPS.

The undersigned continues to manufacture at his Works in this city (from best charcoal metal) Bar Iron of every description, embracing—Rounds and Squares, from ½ to 5 inches diameter. Flats, from ½ to 7 inches, all thicknesses.

Bands and Scrolls, all sizes. Boiler plate and Plough Iron. Railroad and Locomotive Axles and Tires. Locomotive Frames, Spikes and Plates. Hoops, Ovals, Half Ovals, Half Rounds, Angle, T, L, and indeed every description of Iron usually manufactured, all of which he warrants to be equal to any made in this country.

He also manufactures at his Foundry and Machine Shops all descriptions of Railroad Work, say, Locomotives, Railroad Wheels and Axles complete and ready for the road, Railroad Chairs, etc. Also, Marine and Stationary Engines all sizes, Sugar mills and Engines, Horse mills, and every kind of Machinery usually required for the operations of the country.

He has paid particular attention to getting up machinery, etc., for Gold Mine operations, and those in want of such work might find it to their advantage to give him a call.

J. R. ANDERSON.
Richmond, Va., Sept. 10, 1850.

CUT NAILS OF BEST QUALITY, BAR IRON

(including Flat Rails) manufactured and for sale by

FISHER, MORGAN & CO.,
75 N. Water St., Philadelphia.

Car Wheel Iron.

100 Tons "Columbia" No. 2 Cold Blast Charcoal Iron.

300 Tons "Salisbury" No. 1, do. do.
For sale by CHARLES T. GILBERT,
No. 80 Broad st.

New York, Sept. 21, 1850.

Railroad Spikes.

THE subscribers are prepared to make and execute contracts for Railroad Spikes of a superior quality, manufactured by the New Jersey Iron Company, at Boonton.

DUDLEY B. FULLER & CO.,
139 Greenwich st. corner of Cedar.

Railroad Iron.

1650 Tons, weighing about 61 lbs. per yard, 40 tons, weighing about 52 lbs. per yard, and 825 tons, weighing about 53½ lbs. per yard, of the latest and most approved patterns of T rail, for sale by

BOORMAN, JOHNSTON & CO.,
119 Greenwich street.

New York, Aug. 26, 1850.

N.B.—B. J. & Co are also prepared to take contracts for English rails, delivered in any of the Atlantic ports of the United States.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract to deliver Rails of superior quality, and of any size or pattern, to any ports of discharge in the United States.

COLLINS, VOSE & CO.,
74 South St.

New York, June 1, 1850.

Spikes, Spikes, Spikes.

ANY person wishing a simple and effective Spikes Machine, or a number of them, may be supplied by addressing

J. W. FLACK,
March 6, 1850. Triv. N. Y.

Railroad Iron.

2000 Tons, weighing 58 pounds per lineal yard, of the most approved pattern of T rails, in store and to arrive, for sale by

COLLINS, VOSE & CO.,
74 South St.

New York, June 1, 1850.

Railroad Spikes, Boiler Rivets, etc.

THE Subscribers, Agents for the sale of James S. Spencer's, Jr., Railroad and Boat Spikes, Boiler Rivets, and Wrought Iron Chairs for Railroads, made at his Works near this city, will execute all orders with promptness, despatch, and of the best quality.

ALSO IMPORTERS of English refined and Merchant bar Iron; Extra refined Car and Locomotive Axles (from 3½ to 6½ inches in diameter); B. O. Locomotive Tire (welded by Baldwin). Also, supply Boiler and Flue Iron cut to pattern or otherwise—Spring, Shear, and Cast Steel, etc., etc., etc.

T. & E. GEORGE.
Philadelphia, November 14, 1850.

Railroad Iron.

THE UNDERSIGNED, HAVING made arrangements abroad, are prepared to contract for the delivery of Foreign rails, of approved brands upon the most favorable terms.

They will also make contracts for American rails, made at their Trenton works, from Andover Iron, in whole or in part, as may be agreed upon.

They are prepared to furnish Telegraph, Spring and Market Wire; Braziers and Wire Rods; Rivets and Merchant Bars to order, all made exclusively from Andover Iron. The attention of parties who require iron of the very best quality for special purposes, is respectfully invited.

COOPER & HEWITT,
17 Burling Slip, New York.

February 15, 1850.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract for the delivery of English, Welsh and Scotch Rails, of any pattern and weight, also for every description of English, Welsh, Scotch, and Swedish Iron, Railway Chairs and Spikes, Rivets, Bolts, Nuts, Washers, Chain Cables, Anchors, Tin Plates, German Spelter, Iron Castings, and every description of Machinery.

WILLIAM BIRD & CO.,
Iron and Tin Plate Merchants,
44 Wall st., New York.

And at 5 Martin's Lane, City, London,
and 140 Buchanan st. Glasgow.

July 27th, 1850.

Railway Iron.

THE Subscribers will contract to deliver, in the course of the ensuing Spring and Summer, the best English Rails, made by a particular specification, and of any pattern required.

DAVIS, BROOKS & CO.,
68 Broad st.

On hand for sale, English rails of 58 lbs. to the yard, made by particular specifications.
January 10, 1851. 2m

To Iron Masters.

WANTED—A Person to take charge of a Blast Furnace for Smelting Iron, for further information apply to
COLLINS, VOSE & CO.,
74 South street.

Railroad Iron for Sale.

THE Mansfield and Sandusky City Railroad Co. have on hand from twelve to fifteen hundred tons of American Flat Bar Railroad Iron, weighing 38 lbs. to the lineal yard, which they offer for sale at reasonable rates.

The iron has been in use about four years, and is sound and in good condition. It is 24 by 1.

It will be ready for delivery at short intervals between the opening of navigation in the spring and the 1st September next.

For further particulars inquire at the office of the company at Sandusky City, Ohio.

C. G. FORBES, President.

December 24, 1850.

Railroad Iron.

THE "Montour Iron Company" is prepared to execute orders for Rails of the usual patterns and weights, and of any required length not exceeding 30 feet per rail. Apply at the office of the Company,
No. 73 South 4th st., Philadelphia.

Or to the Agents,

CHOUTEAU, MERLE & SANFORD,
No. 51 New st., New York.

September, 1850.

American Railroad Iron.

1000 Tons, weighing 50 lbs. per yard, manufactured by Reeves, Abbott & Co., at the Safe Harbor Iron Works, and now lying in yard at Brooklyn, for sale by

CHOUTEAU, MERLE & SANFORD,
No. 51 New street.

Tubes, Tubes, Tubes.

THE undersigned have received special permission from, and are in direct communication with, the Birmingham Patent Lap Welded Iron Tube Company, for the sale of their very excellent and superior Boiler and Gas Tubes in large or small quantities. These Tubes are sold very extensively in England and on the continent of Europe are sold exclusively by

WM. BIRD & CO.,
Iron and Tinplate Merchants,
44 Wall st., New York
5 Martin's Lane, City, London,
and 140 Buchanan st., Glasgow.

Wanted.

WANTED—A Situation in a Civil Engineer's office, by a Young Gentleman from Scotland—has had six years' experience as a practical Draughtsman, Architect, Surveyor, and Leveller in one of the principal civil engineering establishments in Scotland. First rate reference given. Apply to Messrs. Cooper & Hewitt, 17 Burling Slip, or to

JAS. SNEDDON,
23 Harrison st.

Wanted.

A Second-hand Locomotive of 10 to 15 tons weight. A note, giving lowest terms, addressed to A. B., Railroad Journal Office, will receive attention.
January 9, 1850.

Wanted.

A Second-hand Locomotive, weighing from 10 to 15 tons. A note, addressed A. B., at "Railroad Journal" office, will receive attention, if sent soon.
January 21, 1851.

For Sale.

TWO Locomotive Engines—1½ tons weight, built by Baldwin. Also Four Eight-wheeled Passenger Cars, with side seats, all in good running order. Apply to
WM. E. MORRIS,
Office of Philad., Germantown & Norristown Railroad Co., 9th and Green sts., Philadelphia. 3m5

Great Work on Bridge Building, etc., etc.

JUST published in medium folio, One Dollar, 75 cts. to subscribers.

Part IV of a "THEORETICAL AND PRACTICAL TREATISE ON THE CONSTRUCTION OF BRIDGES IN STONE, IRON AND WOOD," including the Equilibrium of Arches, the mathematical principles of the Oblique Arch, Suspension Arch, etc., Construction of Foundations in Water, Centering, Oblique Arches, etc., the application of Iron to Railroad Structures, Practical Tunnelling, Suspension Bridges, etc.; illustrated by numerous accurately executed Plans, Elevations, Sections and Details of Stone, Iron and Wood Bridges, Viaducts, Tunnels, Culverts, Machines, etc., constructed by the most eminent Architects and Engineers in Europe and the United States, and numerous Original Designs for Bridges, Viaducts, Culverts, etc. The whole calculated to meet the exigencies of Engineers, and assist Draughtsmen, Bridge Builders, Mechanics and Students. By George Duggan, Architect and Civil Engineer.

The present part contains beautifully executed plans, elevations, sections, and details of the Iron Lattice Bridge 140 feet span over the canal in the suburbs of Dublin on the line of the Dublin and Drogheda R.R., Plans, elevations and sections of the Timber Bridge over the Schuylkill, at Market st., Philadelphia, with Arches 160 and 190 feet span. Plans, elevations and sections of a Timber Bridge with Arches 155 and 200 feet span over the Delaware. Also, plans, elevations, sections and details of Lattice and Frame Wood Bridges, explanatory of Nathaniel Towns and Colonel S. H. Long's methods of constructing Bridges of Wood, with the continuation of the Articles on Coffer dams, Concrete, Limes, Mortars, Cements, etc.

Published by George Duggan, 300 Broadway, New York, to whom all communications should be addressed and subscriptions forwarded.

Parties remitting Mr. Duggan \$5. and the remainder \$4 when they have been supplied with the first six parts of the "Theoretical and Practical Treatise on Bridge Building, etc." shall receive it monthly as published. To those making Mr. Duggan a present remittance of \$9, the work will be forwarded post free to any part of the United States.

Great American Engineering

AND MECHANICAL WORK, just published in a medium folio One Dollar, 75 cts. to Subscribers. Part X. of "Specimens of the Stone, Iron & Wood Bridges Viaducts, Tunnels, Culverts, &c., &c., of the United States Railroads." By George Duggan, Architect and Civil Engineer.

The present part contains beautifully executed plans, elevations, and sections of the Timber Bridge with Arches 136 feet span, over the Mohawk river, on the line of the Utica and Schenectady R.R. Plans elevations, sections and isometrical views of Timber Piers 100 feet high, a Timber Bridge of 55 feet span, and Ice Breakers, on the line of the Little Schuylkill and Susquehanna R.R.

Also plans, elevations, sections, isometrical views and details of an Iron Bridge 356 feet long, with Arches 81 feet span, erected by the N. York Iron Bridge Co. over Moores Creek, on the line of the Virginia Central R.R., and plans, elevations and sections of an Iron Plank Road Bridge 160 feet span, erected over Buffalo creek by the same company, with a description of Col. Long's method of constructing Bridges in Iron, and an explanation of the causes that led to the failure of the Iron Bridge 60 feet span, near Lackawaxen, on the line of the New York and Erie R. R., at midday, on the 31st July last, by which several lives were lost, and a great amount of property destroyed.

Published by
GEORGE DUGGAN,
300 Broadway, New York.
To whom all communications should be addressed and subscriptions forwarded.

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.
August, 16, 1849. 6m33

Gas Fixtures.

FIXTURES for Burning Gas for Lighting Public Buildings, Private Dwellings, Stores and Factories, manufactured by the subscriber in great variety. Orders by Mail, or left at the Factory on Causeway street, will be promptly attended to.

HENRY N. HOOPER & CO.
Boston, March 23, 1850. 6m13

TO RAILROAD COMPANIES, CAR MANUFACTURERS, etc.

THE Undersigned hereby gives public notice, that the Commissioner of Patents, pursuant to his decision in relation thereto, on the 8th day of October, 1850, issued to him a Patent for the sole right to manufacture, and exclusive use of the INDIA RUBBER CAR SPRING, on account of priority of invention of said Spring.

F. M. RAY
New York, Oct. 23, 1850.

Iron Trade of Pennsylvania.

DOCUMENTS and Statistics relating to the Manufacture of Iron in the State of Pennsylvania—giving a history of the manufacture from its commencement to this date, illustrated by diagrams. Also tables giving the address and capacity of every establishment in the State. Prepared by direction of the late convention of the trade held in Philadelphia. For sale by

LINDSAY & BLACKISTON, Philadelphia.
FIELDING LUCUS, Jr., Baltimore.
HENRY G. NICHOLS, 79 Water st., N. Y.
or at this office—price \$1 00.

It will be sent by mail to any order enclosing the money, and post paid.

Emerson's Patent Ventilator.

ADAPTED TO Cars, Engine houses, Public Halls, Factories, Churches, School Houses, Dwellings, Chimney Flues, etc.



This Ventilator is stationary, and cannot get out of order. It is constructed in such conformity to certain ascertained laws of pneumatics, as to insure a constant draft outward, whatever may be the changing direction of the wind. The Massachusetts Mechanic Association have awarded a gold medal to the Inventor, and the Manufacturers have already disposed of over 3,000 of the article. Manufactured and sold by
CHILSON, ALLEN, WALKER & Co.,
351 Broadway, New York.

Providence Tool Co.,

MANUFACTURERS OF

Plane Irons, Tooth Irons, Soft Moulding and Rabbet Irons, Cornice Irons, Plow Bits, and Planing Machine Knives:

NUTS, WASHERS AND BOLTS.

—ALSO—

PLATE HINGES AND PICK AXES.

They are prepared to execute orders for all descriptions of Cold Punching and Job Work.

WM. FIELD, Agent. RUFUS WATERMAN, Treas.
PROVIDENCE, R. I.

Lovegrove's Patent Cast Iron Water and Gas Pipes.

THE Subscriber, the Inventor and Patentee of the Centrifugal mode of giving form to metallic substances while in a molten state, is preparing to make Cast Iron Water and Gas Pipes, of any dimensions, at prices much lower than they can be made in the old manner, and the pipes warranted to stand a pressure of three hundred pounds to the square inch, and to be soft enough to drill. Steam Engines and all kinds of machinery. Cast Iron Doors and Frames, and Mouldings of every description, made to order.

THOMAS J. LOVEGROVE,
Machinist and Founder,
West Falls Avenue, below Pratt st., Baltimore.

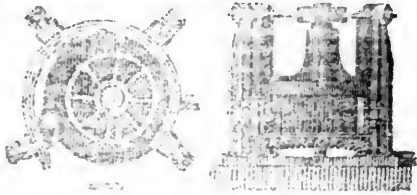
Railroad Letting, in Virginia.

PROPOSALS will be received at the office of the chief engineer of the Richmond and Danville railroad, until 9 o'clock A. M., Monday, the 10th of March, to be decided the 13th of the same month, for doing all the grubbing, clearing, grading, ditching and masonry, on the Richmond and Danville railroad, in the counties of Amelia, Nottingham, Prince Edward, Lunenburg and Charlotte, comprehending about 45 miles of road.

Profiles and specifications can now be seen at the office of the company in Richmond; and after the 10th of February, at the offices of the resident engineers, on the line, at Burkeville and Keysville.

By order of the board of directors,

ANDREW TALCOTT,
Chief Engineer R. & D. railroad.
Engineering department R. & D.
R. R. Co., Richmond, Jan. 22, 1851. }

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This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phoenixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll sounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y. **P. A. BURDEN.**

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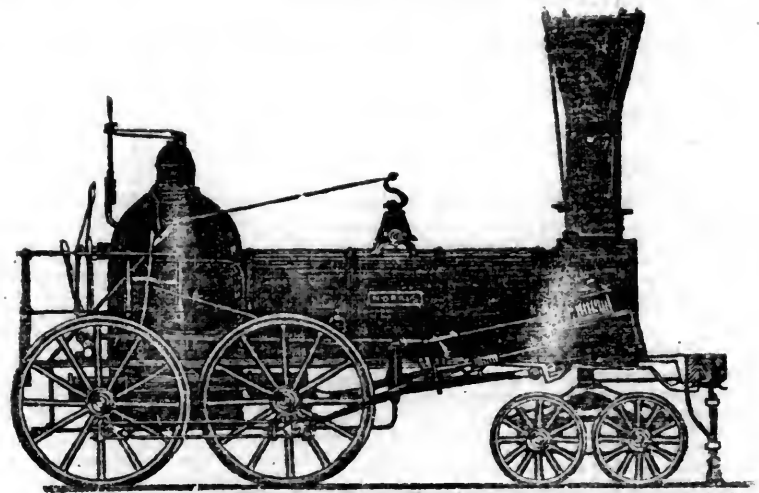
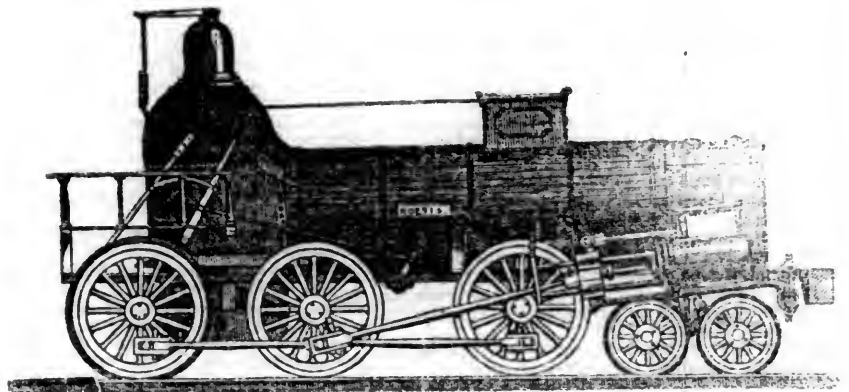
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November 3, 1849.

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AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

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ASSISTANT EDITORS,

J. T. HODGE, *For Mining and Metallurgy*
GEN. CHAS. T. JAMES, *For Manufactures and the
Mechanic Arts.*

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American Railroad Journal.

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Saturday, March 1, 1851.

Remarks upon the Defects of Railway Tracks and their Remedy.

BY BENJ. H. LATROBE, CHIEF ENGINEER OF THE
BALTIMORE AND OHIO RAILROAD.

Although the railway structure, in its simple elements, is not an invention of modern times, (the Egyptians are supposed to have used it,) and although in its more matured form, it is now upwards of twenty years old, yet it is still in a progressive state, and is admitted on all hands not to have attained perfection, but to be marked by some serious defects. The best evidence of this, is the great variety of opinions which still prevail in regard to the details of its form and combinations.—There is but little agreement among professional men, even in the leading principles of the structure—that is, in regard to the section of the rail, the mode of supporting it, the manner of connecting it at the joints, &c. The undersigned has been an attentive observer of the constant agitation to which these questions have been subjected, and has, as he believes, carefully and impartially

weighed the arguments for and against the various ways proposed for the accomplishment of the object which all have had in view, viz., a firm yet elastic structure—well connected at the joints of the bars and other points of contact of the different pieces composing the track, and yet readily taken apart in the process of repair. His conclusion has been, that there were radical defects in all the existing systems of form and combination of parts, defects to be remedied only by a fundamental change in some of the principles of the structure, and, in his view, the cure is as clear as the cause of these imperfections.

A railway track has always heretofore consisted of a series of iron bars, of greater or less length, and of various sectional forms, laid together at the ends, and supported throughout their lengths in various ways. Care has usually been taken to give these bars a sufficiency of strength in themselves, and their supports, to make them form a solid and smooth surface for the rolling of the wheels upon them throughout their length—and if the bars could be incorporated together by welding at their ends, or in other words, if there were no joints in the track, there would be little to desire in any of the well built railways of the present day; for, although the resistance of the soil on which the track rests not being uniform, undulations will occur in the surface of the rails—yet there would be no abrupt depressions or elevations—and the carriages would oscillate with an easy swinging movement, attended by no concussion. The rails, however, not being continuous, but terminating at every distance of 15 or 20 feet, the wheel has to pass from one to the other, over a very narrow gap it is true, but one quite wide enough almost to annihilate the resistance of the bar at that point as a beam, and to make it depend for its power to hold up the wheel, principally upon the resistance of the substance supporting it at that spot, whether that substance be a longitudinal bearer or cross sleeper of timber, or a stone block—according as one or other of these three systems of support are used. Now to give the bearer, or sleeper, or block, the resistance necessary to compensate fully the loss of strength as a beam, which the bars sustain at their ends, has been in practice found impracticable—although an approximation thereto may be had by increasing the compactness of the road bed and the extent of surface bearing thereon at the joints.—The approximation, however, is always an uncertain, and, at best, an imperfect one, and even in the case of the continuous timber bearer under the rail, which would appear to give the best support to the joints of the bars, the result is unsatisfactory; the compressible character of the wood always permitting the rails to sink into it more or less at their ends. The proved impossibility of effectually sustaining the joints by increased compactness of road bed and provision of additional bearing surface, has induced attempts to connect the iron bars at their points of contact so as to

form a splice, for the restoration of the strength lost at this point. But all such efforts have proved abortive, the effect of the quick passage of heavy trains being to shake and wear loose all the fastenings constituting the splice, and it is now quite apparent that little more can be effected at the joints than to keep the rails, vertically and laterally, sufficiently in place to permit the wheel to pass safely from one bar to another—and not always safely indeed, for there are not wanting instances wherein disastrous accidents have been occasioned by the escape of the rail from what confined it at this point. The only real splice that has been thus far applied to the joints of a line of rails, is the continuous bearing timber; but this, in consequence of the yielding of the wood, is much impaired in its effect, as already observed. I make the preceding statements as well known facts, not denied by any one at all experienced in the construction and maintenance of railways, or an observant traveller upon them. I could give, were it necessary, a mass of detail upon the subject, collected in my own visits to various lines of railway, and in my correspondence with my professional brethren all over the United States. Suffice it to say, that the existence of the evil of bad joints, and the difficulty of dealing with it, is amply demonstrated by the variety of expedients to palliate what is conceded to be incurable. Upon one line, for example, are to be found two cast iron chairs weighing together 45 lbs., applied to each bar—and upon another line, no chairs at all, but the rails simply let into the sleepers at the ends and spiked down. Upon other roads a chair weighing from 15 to 25 lbs., with a wooden key to hold fast the rail in it. Upon others again, chairs weighing from 12 to 20 lbs. with a lip on each side to lap tightly over the bottom flanges of the rail. On others, a simple plate to support the ends of the bars and keep them side-wise in place, depending upon spikes to hold them down. On others the same plate with screw bolts in place of spikes, and lastly, upon one or two roads, two splice plates fitting on each side into the hollows of the rail and drawn tight by screw or cotter bolts in a horizontal position. None of these modes of making the joints secure, operate as a splice, in effect, or but partially, at the first; for the violent blow given to the end of the bar by every passing wheel, soon jars loose the firmest grip that these fastenings can take. The wooden keys, besides their swelling and shrinking as the atmosphere changes, soon loosen, and the continual driving of them up rapidly wears them out. The spikes break, the screw bolts either snap off or have their thread stripped—and the keys of the cotter bolts become bent and broken from driving them up. The tight fitting clamp chair either breaks or wears loose in its lips. In short, no fastening that can be applied at this point holds its own long—and where, in despair of getting any contrivance to stand, all are rejected, and the rail is simply nailed down upon the sleeper, the latter is soon

deeply indented and rapidly worn away by the bars it supports. These mischiefs are of course most observable in the lines of heavy traffic, and some time in use. Upon the great trunk line between Boston and Albany, opened in 1842, the clattering and thumping of the joints was deafening when I passed over it in 1848; the chairs and ends of bars having become loose in their fit, from the wear of six or seven years, and on the same line large renewals of rails had then, and are now, annually taking place, chiefly in consequence of the effect upon the ends of the bars of the blows received there.

In describing the previous modes of fastening joints the form of rail is supposed to be one of the only two sections now used in America, the T or H and the Ω or bridge rail, each with a broad base, supporting itself. The plain T rail, or the double headed rail, (1) requiring a chair to support it at every bearing, have been long since discarded here—the latter indeed was never used in the United States, and I believe less in England now than formerly—the bridge rail seeming to be, at present, the favorite pattern there. All that is said of the joints of the H and Ω rails, is, however, fully applicable to the other sections. The tracks laid some twelve years ago, in the United States, with the T rail, held in a chair by keys, became, before they were superseded by another form of rail, the roughest and most dangerous railways ever travelled over. A passage over them was indeed terrifying at last, although when first laid down they were pretty smooth, (vide the Columbia, the New Jersey, and the Eastern railroads before their reconstruction.) Not having had the good fortune, as yet, to be wafted over an English railway, the undersigned has no personal experience in regard to them—but he knows that they are subject to the same evil which he has described as affecting our American roads—and although the great attention paid in England to the adjustments of the track, together with the superior ease and comfort of most of the English first class carriages, and the fact that passengers are confined to the inside of the cars, with the windows closed, during the journey, and not allowed, as here, to stand at times upon the outer platforms; although these circumstances have prevented travellers from noticing the shock and noise in passing the joints, it certainly must and does exist, as is testified by observant persons who have travelled upon the railways of England.

It should be mentioned, while speaking of the difficulties of maintaining the joints of a track, that the endwise movement of the rail, under the blow of the wheel, is one of the most prominent.—The bars are not all operated on alike by this cause, and consequently, some being pushed farther than others, the openings at the joints become irregular, some being closed entirely, and others widely open. This movement of the rail is a very dangerous one, and unless watched, would soon force the rails quite out of their chairs, especially upon double lines of railway, where the movement of the trains, on each track, is always in the same direction.

The evils have been now, perhaps, sufficiently descanted upon, and we will proceed to speak of their remedy.

Instead of making the rails in solid or single bars, laid end to end, it is proposed to make them in parts combining to form the cross section of the rail—these parts breaking joint with each other, and held together by rivets, so as to form, in effect, a continuous bar of compound structure—being as near an approach to an unbroken line of iron as it is physically possible to make. The necessity of providing for contraction and expansion, and for repairs to those parts of the rail, which, from the unavoidable inequalities in the texture of the metal, will require to be renewed at different times, manifestly renders the welding of the bars together, at their ends, impracticable. We must then break up the body of the iron into parts, which may shrink and dilate, and be removed or replaced independently of each other; and the question is, how this division of the mass shall be effected?—Hitherto it has been by simply cutting off the line at intervals—the mischiefs of which mode have been fully shown. The other mode, now proposed, is to divide the mass not only cross wise, but

longitudinally—that is, not only in length but in section, making the several parts, resulting from this sectional division, unite at different points in the length of the line—so that the wheel will always be sustained by the full strength of one portion of the rail, while passing over the gap occasioned by the division of another portion. It is, in short, nothing more than the application of the "break joint" principle to rails, so long recognized, and so successfully used in carpentry and framing of every kind, and, indeed, in the railway itself, by those who prefer the continuous bearing timber, to the cross sleeper or the stone block. By this division of the bar, a portion of its extreme length is relinquished, the compound bar being, at its strongest point, somewhat weaker than the solid bar, in the middle of its length. But as the maximum of strength is less in the compound bar, so the minimum is much greater, and thus that approach to uniformity of strength is effected, which is the desideratum; a structure presenting an alternation of very strong and very weak points, being of all others the worst. It has been said, that the compound bar is somewhat weaker in its strongest point, (which would be the point midway between any two contiguous joints,) than the single bar in the middle of its length. But the difference would be less considerable than might be supposed. I judge from an experiment made with a compound bar, of 50 lbs. per yard, and a solid bar of similar weight, but of the bridge pattern. The two bars with a clear bearing of three feet, and under a strain of three tons, applied to the middle of their lengths, exhibited the same deflection, although the compound bar had one of its joints, (in one of the under sections,) between the bearings. I do not quote the experiment as conclusive. It was but a single one, and may have been under the influence of some circumstance, not observed, which gave too favorable a result for the compound bar. But while conceding fully, that there is a reduction of the maximum of strength, the more than corresponding increase in the minimum, already claimed for the composite rail, is an invaluable acquisition. The loss of extreme strength, is, however, not the only objection that might naturally be urged against the compound rail, and, if that composite principle has been already thought of in England, its practical application has been probably prevented by the objection now to be mentioned. I refer to the supposed difficulty of connecting, in a substantial and satisfactory manner, the parts into which the bar is divided, so as to make them hold well together without shaking, or working, or breaking, or looseness of any kind, and so, also, as to permit them, at the same time, to yield freely to the effect of changes of temperature. In reflecting upon the subject, I am strongly impressed with the superiority of the compound principle, as to feel amazed that it has not, long ago, been adopted, and can only account for the fact that it has not, by this last consideration, which, I confess, operated awhile upon my own mind, so as to make me in the outset, not entirely confident of success in introducing the composite rail. My professional friends, indeed, nearly all hung back at first upon this ground—admitting that the idea in the abstract was a happy one; but fearing its defeat by the supposed impossibility of holding the parts properly together. Nothing short of experimental demonstration would be satisfactory in this, more than in other cases. The fact that the fundamental principles, involved in the structure of the rail, were altogether in favor of what was aimed at, did not seem to me to make a due impression. Because the fastenings, by which it was attempted to connect the solid bars at their ends, failed to perform their intended functions, so must the attachments of the compound bar! But, the distinction in the two cases, consists simply in the prevalence in the two plans of two opposite principles; in the solid rail the principle of *concentration*, and in the compound rail the principle of *diffusion*. In the former, the whole shock experienced in passing the point of separation of the bars, is concentrated at one point, the single joint—in the latter, the one great shock is divided into two or three very much lesser shocks, and thus is diffused with a greatly diminished intensity over the whole length of the bar, and the fastenings being also similarly dispersed along the bar, the scattered and softened

concussions are effectually resisted by them. It would be difficult, indeed impracticable, to compare the different momenta of the mass which experiences these shocks, in the cases of the two kinds of bars, as to do so, with precision, it would be necessary to know exactly the relative spaces through which the wheel of the carriage would fall, in passing the single joint of the solid bar, and the two or three joints of the compound bar. There can, however, be no doubt that the sum of the momenta, in the latter case, would fall much within the single momentum in the former case, and that, therefore, the carriage and the rail would sustain much less injury from the shocks occurring in passing over the compound bar.

But, leaving the mathematics of the matter, I will go to the more practical views to be taken of the subject, and to the light which the experience, which has happily been obtained, casts thereon. I have thus far discussed the principle of the compound rail in the general, and without reference to any of the various forms it may assume. But I will now say, that notwithstanding the tardiness with which most of the engineers of this country, to whom the improvement has been submitted, have seemed disposed to yield their assent to its value, there is a growing feeling in its favor, sufficiently evinced, by the fact, that there have been already no less than four different forms of compound rail, proposed by various parties connected with the making or management of railways. Of these several forms, three are double rails, composed of two parts, with splicing pieces at the joints, and the fourth, suggested by myself, consists of three parts, without other splicing. Now, if we admit that the composite rail is, in the abstract, the best form, we have then to choose between the possible varieties of this form, that may be suggested. The reflection given by the undersigned to this selection, has led him to a preference of three parts, to any other number of parts, for the combination—although, if there were no other alternative, he would take the rail of two parts in preference to the single rail. It is sufficiently evident that there would be no temptation to increase the number of parts to more than three.

It is not proposed to discuss, in detail, the relative merits of the three forms of two part rail above indicated. Their suggestion sufficiently shows the tendency of professional opinion, in this country, on the general subject. Were I compelled to choose between the three rails, I would take the simplest and most symmetrical of them. But over any form of rail composed of two parts only, I consider the one of three parts possesses the following advantages: 1st. The rail at its weakest point, will possess nearly two-thirds of the strength of solid bar, while the two part rail cannot, (independently of the splice, which could as well be applied to the rail of three parts,) have more than half its full strength at that point. 2nd. The pressure of the wheel is communicated to each half of the base of the rail more equally through the cap or third part of the rail. 3d. This cap, by means of the dove-tailed rib upon its under side, adjusts the bearing rails so as to bring their tops always to the same plane, and many an inequality in their height is seen at their bottoms only, where it is of the least importance. 4th. The cap rail so connects the bearing rail by hanging them, as it were, upon each other, by means of the entrance of the lips of the latter, into the side grooves in the bottom rib of the former, as to apply no cross strain to the connecting rivet, which is not the case with the two part rails, unless by a tongue and groove in the halves of the two part rail running their whole length, the bolt may be also relieved of cross strains or a filling-in piece, occupying the hollow of the rail, would produce the same relief, provided it were possible to make the tongue and groove or the filling in piece, fit every where with precision. This, however, is impracticable, and hence, the advantage of the dove-tail fit, which, when the bearing rails are drawn together by the rivet, adjusts the bearing of all the parts in contact, upon each other. 5th. The cap rail being separable from the bearing rails, may be removed and replaced independently of them, and as the entire wear takes place upon the cap, which would never constitute more than from $\frac{1}{4}$ to $\frac{1}{2}$ of the entire rail, the remaining $\frac{3}{4}$ or $\frac{1}{2}$ contained in the bearing rails,

may be regarded as enduring in perpetuity. This property may, indeed, be realized to some extent, in a rail composed of two parts; but not to an equal degree—for in any two part rail, the upper or cap rail would, of necessity, have to bear a much larger proportion to the whole rail, in order to give it body sufficient to ensure a safe connection with the bottom part. In the three part rail, the cap may be made as light as is consistent with its wearing well. I do not, however, after much reflection upon the possible forms of a two part rail, divided horizontally, perceive how a satisfactory and permanent connection between the upper and lower halves can be effected, as the dependence must be upon the resistance of the rivets, (or bolts or keys if substituted for rivets,) to a strain—which they cannot resist long, but will soon wear loose if they do not break.

An advantage may be claimed for the two part rail, in the feature which always presents (when the bar is divided vertically) an unbroken surface for one half of its breadth, to the tread of the wheel, while the cap of the three part rail is divided entirely across. It must, however, be recollected that if there is any inequality in the surface at the joints—the shock given to the wheel will be the same whether this inequality occupies the half or the whole breadth of the bar; and it must not be forgotten that where the joint of the cap of the three part rail occurs, there is no joint in the two bearing rails underneath.

It is obvious, that if there be a sufficient advantage in filling the hollow of the rail with wood or iron, it can be done in the rail of the three parts as well as, or better, than in that of two—but I doubt the utility of such an addition to the combination, which would be rendered more expensive and complex thereby, without, probably, a corresponding improvement in the strength or stability of the structure. If wood, however, be introduced, it should be seasoned so as to shrink as little as possible, and if protected against decay, by the kyan or other analogous process, it would be all the better. It should then be shaped to the section of the cavity, and made very slightly larger than that, so that when the rivets were inserted, they would, in shrinking, draw the bearing rails together, and the cap rail downwards, so tightly as to compress the wood both horizontally and vertically, and thus produce a very close fit in all the parts of the combination. It will be apparent that a filling-in piece of iron or a tongue and groove, could as well be applied to the three part as to the two part rail—but I prefer depending on the self-adjusting action of the cap rail for the connection of the parts of the system. I think I have now discussed the subject upon theoretical principles at sufficient, and perhaps unnecessary length, and will give a brief statement of such facts relating to it, as are in my possession.

It is upwards of four years since, after several previous years' reflection upon the feasibility of constructing a track entirely of iron, without wood or stone supports, the form of compound rail of three parts, exhibited in the drawings hereto attached, suggested itself to me. I had, more than three years ago, an experimental piece of track, 200 feet in length, constructed of cast iron, and laid in the yard of the station at Mount Clare, in the environs of Baltimore. The cap rail, as well as the bearing rails, were of cast iron. The weight of cap was 17½ and each bearing rail 42—total of the three 101½ lbs. per yard. So were the cross ties of cast iron, and they weighed 37 lbs. each, and were 10 feet apart. The whole was held together by screw bolts, ½ inch diameter, and two feet apart. The track was laid upon sand ballast, without any support of any kind. It has been ever since daily passed over by the heaviest trains that come at slow speed into the yard, and has received scarcely any attention in the way of adjustment. Yet it has held together perfectly, and although the cap rails, which were very light, and, like the bearing rails, cast in length of 20 feet long, have crumbled down at the edge, as cast iron always will under the tread of railway carriage wheels, but one or two of the bearing rails have broken and but one cross tie. The success of this track encouraged me to look to the general application of the principle in rolled iron, to rails of any weight over 50 lbs. per yard, and with or without supports

of timber—as the size and weight of rail might make necessary. As I commenced with what I then considered the maximum of weight about 100 lbs. per yard, in the rail, I make the next trial with the assumed maximum, (of 50 lbs. per yard,) and having an opportunity of getting the rail rolled in the neighborhood of Baltimore, I had enough made to lay a section of 600 feet, and afterwards other sections of 200, 900, and 4500 feet, upon different points of the line. It was laid upon cross sleepers alone, placed about 2½ feet from centre to centre, and 7½ feet long, and 5×6 inches in section. The ballast, broken stone and gravel. A part of the first section was fastened by bolts, ½ inch in diameter, the remainder was rivetted. The bolts held very well, but required some occasional attention to make sure that they were tight. The rivets needed no such attention, and were, consequently preferable. The cap rails were prevented from moving endwise by small key plates put through the neck of the rib, and with their ends fitting into notches, cut in the tops of the bearing rails. For the manner in which these experimental sections of track have worn, and how they have carried the trade and travel, for different times, during the last year and a-half, I refer to the accompanying copies of certificates, signed by various officers of the Baltimore and Ohio railroad company. I need add nothing more than to say, that every additional month which goes by, only adds to the favor in which the new track is held by those who have charge of it, or travel over it. I am, therefore, enabled to appeal to that authority from which there is no further appeal—experience, and that acquired under circumstances so little favorable to the new track, that the argument is entirely *a fortiori*, when we reason about the results of future trials under more suitable conditions, for success.

In figure 1, of drawing appended, I have assumed a rail of maximum weight, with a view of its being laid directly on the ballast, without wood or other support. I consider this entirely admissible, or general principles, and as having been also tested by the experience of the iron track laid at the Mount Clare station, as already mentioned. The bearing surface of each line of rail upon the ballast is 8 inches in width, which is the same with that of the wood and iron track of the Baltimore and Ohio railroad, the substructure of which consists of a longitudinal timber under each rail but 8 inches wide—while the iron track I propose, has vastly more strength and stiffness, and thus diffuses the pressure on the ballast much more lengthwise than the other. This consideration of longitudinal diffusion of pressure is not generally attended to sufficiently. If you have two tracks of equal bearing surface on the ballast, but one of which is twice as well connected and stiff as the other, you have virtually double the bearing surface on the former. If we compare the bearing surface of different tracks, we find that they vary a good deal. In America, in tracks of 4 feet 8½ inch gauge, laid on cross sleepers only—there are generally 6 sleepers of 7½ feet long, by about 7 inches wide, allowed to every 15 feet. This gives 1½ square feet of bearing surface per linear foot of track. The tracks laid with longitudinal timbers are few in number here; but their bearing surface per linear foot is from 1½ to 2 square feet. In England larger provision is made for bearing surface, and it seems generally to range from 2½ to 3 square feet per linear foot. It may be questioned how far we should go in increasing the bearing surface, as the more extensive it is the more difficult and imperfect is the operation of packing under it. In this view I should prefer a very stiff rail with small bearing, to a flexible rail with a large bearing—and if I am right in supposing that the rail of the model I propose is nearly or quite twice as stiff as any of the strongest rails in use, (at least at and in the neighborhood of their joints) then my rail would be in effect, as well supported by the ballast as the others. It should in this connection also be noticed that the bearing surface of a track is effective in proportion to its proximity to the line of the rail—and thus the bearing obtained by longitudinal timbers is really worth more a good deal than that of cross sleepers. The London and North-western, has 3 square feet per foot run. The Great Southern and Western of Ireland has 3 ¼—the first is a 4 feet 8½ inch gauge, the second 5 feet 3. The Great Western of

England has 2½ square feet per foot, and is of 7 feet gauge. The Midland Great Western of Ireland (of 5 feet 3 gauge) has 2 7-12 square feet per foot. The two first are laid only on cross sleepers—the third upon longitudinal, and the fourth upon a combination of the two. These particulars have been obtained from the July (1849) number of the Civil Engineer and Architects' Journal, wherein is an article on the subject of "Permanent Way"—of which I shall presently make further use, and which seems to have been prepared and published very opportunely for the present purpose. In this article, the author, Mr. Dockray, proposes an improved track for the London and North-western road, as the result of the investigations recently made by him, under the instructions of his company, into the subject of "Permanent Way" with a view to the removal of the admitted defects existing in their own and other roads. His report is a very interesting paper and is confirmatory of all the views I have expressed in relation to the faults of the present system of railway construction. The improved plan which he proposes is a good one; perhaps as good a combination of wood and iron as could be suggested: but it is a combination of two materials so different in their properties that they cannot be made to act in harmony with each other. All the changes which they undergo are different in their nature and degrees. While hot weather shrinks the wood, it swells the iron—and while damp weather swells the wood, it does not affect the iron. The wood is soft while the iron is hard, and flexible while the iron is stiff—consequently the weak points of the iron cannot be strengthened by the strong points of the wood, so as to effect a perfect compensation. The effect of these diversities in the materials will always inevitably be to disarrange and ultimately to destroy the combination. On the other hand, the iron track is perfect within itself as a system and depends for a support only upon the ballast on which it rests, and which constitutes no element in the combination. And even if wood is interposed between the iron and the ballast, it is in the way of a rest only and not as a part of the system of the track.

(From the London Railway Journal, for Nov. 1850)

REMARKS UPON THE COST OF REPAIRS OF LOCOMOTIVE ENGINES. (WRITTEN JAN. 1849.)

Continued from page 82.

I consider that with the above named hard work an engine would require, at least, a new set of tubes every two years, or 60,000 miles; and a new fire-box, say at the end of every four years.† We have, therefore, to debit our engine with the cost of two new fire-boxes in the ten years, and four sets of new tubes, viz: a set at the end of the second, fourth, sixth, and eighth years, the last set of which would keep her going till the end of the tenth year, when we have assumed she would be sold. The account will then stand thus:—

2d. per mile upon 300,000 miles.....	£2500
Deduct 4 sets of tubes.....	£1200
" 2 new fire-boxes.....	360
	£1560
Less by credit of old tubes.....	£250
" " of fire-boxes.....	180
	460
	£1400

† Few tubes do run this distance even with the best of coke.

‡ A new tube plate is sometimes introduced as a temporary relief to fire-boxes, but considering the expense of taking out and putting in, I think it the best economy to renew the whole box, as we have the old metal to our credit, and a really good job cannot be made of staying the sides of an old box the second time.

§ Tubes are taken at the set of 200 in number, 11 feet 6 inches long, and two inches outside diameter. These will cost at least 28s. per tube, delivered at the company's works, and I allow £20 per set for ferrules and putting in. New fire-boxes are assumed at 26 cwt. of copper, at 11d. per lb. and allows about £45 for making and putting in.

|| Old tubes are taken at one-fourth their original

Thus showing a clear demand of 44 per cent, on the amount allowed for repairs of engine and tender for ten years, and leaving a balance of only £1400 for general purposes. A moment's consideration of the costliness of many other specific items, viz. wheels and axles of both engine and tender, cylinders, pistons, &c., besides the innumerable smaller matters which are involved in a thorough repair, to say nothing of a due share of general charges, will render the utter inadequacy of the above sum too palpable to require any comment **

I will, therefore, (still giving her credit for doing the above extreme amount of work, say 300,000 miles,) assume that 2½d. per mile be allowed for repairs during ten years; that she have a thorough repair every two years for eight years, and at the end of ten years she is to be offered for sale.††

The account in this case will stand as follows:

2½d. per mile upon 300,000 miles.....£3125
Dr. to fire-boxes and tubes, as before.... 1100

£2025

Now, supposing that she actually runs twenty months at a time, and at the end of each period has a thorough repair, it will be necessary in the division of the above sum of £2025, to vote £100 or thereabouts, to be expended during each period of running for casualties.*

Taking a low allowance, let us say for the ten years £425. This leaves a balance of £1600 to be divided into four thorough repairs for engine and tender, and at the end of the last two years she is to be unhooked from her last load, drop her fire and be offered for sale. If a purchaser be found at all, she might probably fetch £400, certainly not more,† and I appeal to any man experienced in such things, whether, after her great amount of work done and limited allowance for repairs, the above sum be not a handsome one.

Assuming this to be the result of ten years' work at an allowance of 2½d. per mile for repairs, our account will stand thus:—

By sale of old engine.....£400
Reserve required of 1½d. per mile beyond current expenditure on 300,000 miles..... 1875
Assumed bank interest on accumulating reserve fund at 2½ per cent.†..... 225

£2500

value, viz. half price, less diminution of weight of 33 per cent. or more, and the expense of taking out and back carriage. Old fire-boxes allowed half their original cost.

¶ General indoor charges include stationary engine for driving machinery, repairs to machinery, tools, and buildings; rates, superintendence, foremen and clerks, gas, &c.

** It is evident that, even if kept alive at all, she would work at a great sacrifice of power, &c., and be utterly unsaleable at last.

†† Be it remembered that being now, as it were, "used up," any purchaser would be necessitated to lay out an extravagant sum to make her available.

* These casualties are the ordinary small jobs which each working engine requires, and must have done, and for which the average time of one day per week is allowed. I have taken no account of serious accidents, which the whole world knows are often very expensive, and which must continue to occur occasionally to the end of time. I consider that the expenses of a serious accident to any one engine should be put to the account of "general charges," and be proportionately borne by all. All are liable to accidents, and all should help to relieve.

† I say this from having had some experience in the sale of worn out engines, and it is not unlikely she might have to wait many months before such a sum, or even a less sum, could be got for her.

‡ I fear few companies would be found to have been so prudent as to take advantage of this interest on accumulating money.

§ Not having to devote the last four months of the ten years to repairs, it may be argued that an extra quantity of work might be obtained from the engine in the given time. I maintain that her condition would be such that she would barely

Required to pay for the new engine which is to succeed the old one on the 1st Jan. 1859.

We therefore see that, under the most favorable circumstances, a sum of 4d. per mile must one way or other be appropriated, if old engines are to be periodically replaced by new ones,§ or a gross cost of £5000, taking advantage of interest on accumulating money.

It being evident, therefore, that, with an extreme amount of mileage, a current charge must inevitably be made on revenue of at least 4d. per mile run, if the renewing system be adopted, let us see the demand on our revenue under the circumstances, supposing it were our intention to maintain the same engine, and have her fully repaired and ready to commence a second ten years work on the 1st of January, 1859. * The specific repairs of fire-box and tubes will in this case bear a different proportion, and instead of two fire-boxes and four sets of tubes, I must here charge the engine with two and a-half fire-boxes and five sets of new tubes,* making, after allowance for old metal, a demand of £1375 for these two items alone. In addition to this I will allow a clear charge of £100 for each period of twenty months' running, to be expended in casualties, or a gross charge for ten years of £500,† and instead of four thorough repairs at £400 each, I will give £2500 to be divided into five thorough repairs, (the last, of course, being done between the 1st September, 1858, and 1st January, 1859,) say for repairs at £450 each. At the end of the second, fourth, sixth, and eighth years respectively, and clear £700 to cover all at last,‡ exclusive, of course, of fire-boxes and tubes charged before.

This shows our account to result as follows:—

Fire-boxes and tubes.....£1375
£100 every 20 months for casualties 500
Four thorough repairs at £450 each, 1800
One final do. at £700..... 700

Total.....£4375

Or a gross cost of £4375 on 300,000 miles, averaging a charge of under 3½d. per mile, being ½d. per mile less than in the case of buying a new engine.

This difference of ½d. per mile on 300,000 miles makes a gain of £625 per engine to the company every ten years.§

To be continued.

From the *London Builder*, Jan. 1851.

Hydraulic Mortar, as made and used at the Docks, Liverpool, 1850.

Few engineers or architects who have visited Liverpool will have neglected to examine the docks, constructed under the direction of Mr. Hartley, and if they have noticed the character of the recent work, they will have observed that the river walls, entrances, and dock walls are principally of rubble masonry. The strength of this work in a great

complete the 60,000 miles in the last two years, including the extra time. If she realizes any excess, it might be placed to the relief of bank interest, for if the amount allowed for this were not realized, it would require an extra charge of nearly ½d. per mile on 300,000 miles to make up the difference.

* The fire-box being removed at the end of each four years, would leave one only "half worn", at the end of ten years, into which a set of new tubes would be put. I therefore debit her half of the value of a third box, and take credit for half the value of old metal accordingly.

† In the renewing system I only allowed £425 for casualties. In this case I give a more liberal allowance, knowing well the value of constant care or "a stitch in time."

‡ I believe the most punctilious could not deny that, with an annual allowance for casualties in repairs of £60, and a provision of £450 every 20 months, (exclusive of fire-boxes and tubes,) for thorough repairs, £700 would well fit her, and turn her out in as effective a state as at first, if not better.

§ This ½d. per mile in a stock of two hundred engines will be equal to £125,000 in ten years, or £12,500 per annum, which ought and eventually must be charged to revenue.

measure depends upon the good quality of the mortar used. From inquiries, we obtained the following particulars as to the mortar, which may be useful to some of our readers. The dock works at Birkenhead are constructed with similar mortar. In fact, it has been made principally by men from the Liverpool works. The stone is obtained from Halkin mountain, near to Holywell, Flintshire, North Wales; it is shipped in the river Dee. Price of stone delivered upon the quay at Liverpool, per ton, 7s. 3d. When it is requisite to burn the stone quickly, coke is used, at per ton 16s. When not required quickly, coal is used, at per ton 8s. 6d. The stone can be burned quickly for as little money with coke as it can be burned slowly with coke. But it is very expensive to burn quickly with coals or slow with coke. The proportion of coke is generally one bushel to six bushels of stone.

Cost of burning the Limestone.

Tons.	Cwt.	per ton.	
4	10	of limestone, 7s. 3d.	£1 12 7½
—	—	labor on do., 1s. 6d.	0 6 9
1	10	of coke, 11s. 0d.	0 16 6
			£2 15 10½

Produce lime, 3 tons, at 18s. 7½ per ton, £2 15 10½

Mortar from the mill costs, per cubic yard, from 9s. 6d. to 10s. 6d.

N.B.—Various quantities of sand are used, from two to five, to one of lime by measure. Smith's ashes, or furnace ashes, are used to mix with the lime, and with much advantage.

The sand is obtained out of the river Mersey, generally from the great banks above the town.

The lime-kilns stand close to the mortar shed: the lime is drawn fresh from the kiln mouth, is slaked, and thrown at once into the mortar pans, which are driven by steam power. The mortar is used fresh, generally on the day it is made. It sets rapidly, and in a few months the rubble becomes one solid mass. Grout is used plentifully, made from the same mortar.

Project for the Immediate Improvement of the Erie Canal.

To the Honorable the Legislature of the State of New York, in Senate and Assembly convened:—

For some months past the attention of the public has been directed to the present condition of the Erie canal, and the probable time when its enlargement will be completed. From the new routes opening for the transmission of produce and merchandise to and from the Western lakes and their borders, both through this State and those adjoining, it is evident that to retain the advantages of the trade hitherto enjoyed by the people of this State, a cheaper and more expeditious mode of conveyance through the Erie canal must be secured, or a considerable portion of the business will pass to eastern ports, through other channels. The contest for this trade is one in which the State of New York is more deeply interested than in any, I may say all, other questions combined. In it is a prize worthy of great efforts, and even of great sacrifices.

To the present time the Erie canal has had nearly a monopoly of the carrying trade between the lakes and the sea-board. Hereafter the Ogdensburg, the Montreal and Portland, the Montreal and Rouse's Point, and the Erie railroads are to compete with it without payment of tolls; and the Pennsylvania canals, with a reduction of 12 per cent from last years' rates. The friends of these routes confidently assert that flour can be delivered cheaper by them at all the eastern ports, and in New York, than by the Erie canal; and that merchandise can be transported in like manner to western ports.

The object of this memorial is to show (if the present system is continued) the time necessary to complete the enlargement and the difficulties attending any improvement in the navigation or cheapening of freight, until the enlargement is completed. It will also suggest to the Legislature a plan by which the principal advantages of the enlargement will be secured, twelve years earlier than if the mode now adopted is carried out, and point out

the manner by which the necessary means for doing the work can be obtained, without an alteration in the constitution.

The estimated cost of enlarging the canal in 1836 was \$12,000,000. It was to have 70 feet width of surface, 40 feet width at bottom, by 7 feet depth of water, with double enlarged locks, suitable for passing boats 98 feet in length, 17 feet 6 inches in width, estimated at that time to carry 150 tons.—(Since that period, the form of building boats has been changed, so that with the same length and breadth a much larger load can be carried.)

In 1840 a more accurate survey and estimate made its cost about \$24,000,000.

On the 29th day of March, 1842, all the work upon the enlargement was suspended by the Legislature, after there had been expended upon it, including outstanding claims other than for breach of contract, \$12,989,851 76.

There has been paid for breach of contract about \$400,000, and there are yet some claims of this character unsettled.

The work remained suspended and nearly useless until it was resumed under the new constitution in 1847, which provides that after paying the expenses of collection and ordinary repairs, \$1,300,000 from its revenues shall be applied annually to the extinguishment of the canal debt, \$350,000 to the general fund debt, \$200,000 for expenses of government, and the remainder to the completion of the Erie canal enlargement, the Genesee Valley and Black River canals.

Under these provisions of the constitution the surplus revenues have been as follows:—

For the year 1847.....	\$981,834 52
do 1848.....	498,219 52
do 1849.....	907,102 71
do 1850.....	800,206 49

Total in 4 years.....\$3,187,363 24
or an average per year of \$796,840 81.

Of these revenues there has been realized from appropriations for the enlargement, \$2,140,355 16; other funds, termed "unavailable," were appropriated in 1847, to the amount of \$300,000, making \$2,440,355 16, applied to the enlargement since its resumption.

There has been expended for all purposes connected with the enlargement to 30th Sept. 1850, from canal tolls.

From proceeds of loans.....	\$6,226,513 22
Cost to 30th Sept. 1850.....	10,203,174 35

To complete the canal will cost as estimated by engineers, exclusive of damages. \$9,390,330 77	
Add for land damages 509,669 23	
	10,000,000 00

Total cost.....\$26,429,687 57

The estimated cost to complete the public works is as follows:

Erie canal, Eastern division.....	\$2,174,448 56
do Middle do.....	1,607,751 49
do Western do.....	5,608,130 72
Black River canal.....	375,261 96
Genesee Valley canal.....	599,813 00
Add for land damages.....	631,594 27

Total.....11,000,000 00

Equal to the surplus revenues of 14 years, supposing the average to be as for the last four years, and there is scarcely a probability of their being greater. It must be borne in mind that in 1855, \$400,000 more is to be taken from the surplus, and added to the sinking fund, reducing by that amount annually thereafter the surplus otherwise applicable to the canals.

Until the 14 years have elapsed, (if the present mode of enlargement is persisted in) enlarged boats cannot be used throughout the canal, for if there is but five miles of old canal but 28 feet wide at bottom, with four feet depth of water, it will as effectually prevent the passage of such boats as does its present condition.

I have shown that without some change of plan, the canal will not be completed until 1865. Con-

sequently the cost of transportation cannot be materially reduced until that period, because the tolls must be kept nearly at their present rate, or the surplus with which to construct the work will be materially reduced; and it is well known that the cost of freight cannot be cheapened except by an increased capacity of boat, or a more rapid mode of conveyance, neither of which can be attained under existing circumstances.

The plan proposed for improving the capacity of the canal so as to pass boats carrying 150 tons, (or double its present capacity) its entire length is as follows:—

Improve the old canal (which has but 28 feet width of bottom, barely sufficient to pass the present sized boats) to 36 feet width of bottom, (which is one foot wider than two enlarged boats) either by excavating with the usual slopes to the banks, or removing the present slopes, when the banks will stand nearly vertical, and docking where such mode will be cheapest.

To give the requisite depth of five feet water, it will only be necessary to bottom out the canal to its original depth; the gravel taken from the bottom will give the necessary height to the towing path, and the material excavated will raise the berme bank.

Six locks will require to be made longer and wider with wood only.

Of other structures no new ones will be required. Some bridges, old locks, and small aqueducts may require raising one foot to accommodate the enlarged boats.

The last of the enlargement contracts now in force will expire in the spring of 1853. To complete the work contracted, will require the surplus revenues to the same period, at which time the condition of the canal will be as follows. The cost of the proposed improvement is subjoined to each division.

EASTERN DIVISION.

This division is 136 miles in length, extending from Albany to the Oneida lake canal. With the existing contracts completed there will be—

95.30 miles enlarged canal in use.
46 double locks, being all upon the line, will be in use, and all enlarged except 9, which are by the side of enlarged locks. The walls of some of the old locks will require a timber one foot in depth upon them.
40.60 miles is not under contract.
30.00 miles of old canal will be within the bounds of the new canal.
10.60 miles will be new line.

The cost of improvement on this division to 36 feet width of bottom, with five feet depth of water, will be as follows:—

30.00 miles of old canal, within new canal, will cost \$4,000 per mile.....	\$120,000 00
6.30 miles not within new, at \$4,000, will cost.....	25,200 00
4.30 miles not within the new canal, will require to be docked at \$6,182 per mile.....	26,582 60
Add for raising old bridges, locks and aqueducts.....	8,000 00

Total.....\$179,782 60

MIDDLE DIVISION.

This extends from the Oneida lake canal to the east line of Wayne county, 73 miles.

52 miles will be enlarged.
6 locks all upon the new line will be enlarged and double.
21 miles is not under contract.
8.40 miles of old canal east of Syracuse, will be within the prism of the new, one mile of which will not need improving.
8.03 miles east of Syracuse will be new line.
4.57 miles at the Montezuma marshes, will be new line, but the cost of this line \$248,832 00, is so great, that it is advisable to improve the old line, besides it would require 3 years to complete the new line to the east line of Wayne county, if it were now under contract.

Upon the marshes are two locks—one with six and the other with five feet water. These will require altering at an expense of \$6,000 each. The

canal will only require deepening to give it the requisite capacity.

The improvement on this division will cost as follows:—

7.40 miles within new canal at \$2,295 per mile.....	\$16,983 00
Add for 1.09 miles of docking at \$6,182 per mile.....	6,738 38
8.03 miles old canal which will not be within the new.....	18,428 65
4.57 miles on Montezuma marshes, dredging 112,000 cubic yards at 20 cents per yard.....	22,400 00
Two locks to be enlarged with wood at \$6,000 each.....	12,000 00

Total.....\$76,550 23

WESTERN DIVISION.

Extends from the east line of Wayne county to Buffalo, and is 165 miles in length. In the spring of 1853,

23 miles of canal will be enlarged, and enlarged locks will be in use at all points upon the new line, except one at Pittslock, one at Lock Berlin, one at Pittsford, and one at Brighton. In making the proposed improvement, these locks will need to be enlarged, although two are not upon the new line.
127.63 miles is not under contract.

To give this division the necessary capacity, will cost as follows:—

10 miles within the new canal will require docking, the estimated cost of which is \$6,270 per mile, making..	\$62,700 00
114.63 miles will be within the prism of the new canal, which will only require to be excavated, and the banks raised, estimated to cost \$2,760 per mile, or.....	316,378 80
3 miles not within new canal.....	8,250 00
4 locks to be enlarged, \$5,000 each...	20,000 00
Add for raising aqueducts and bridges.	5,000 00

Total.....\$412,358 80

RECAPITULATION.

175 miles of enlarged canal, will be in use at the opening of navigation in 1853.
189 miles will be old canal, upon which boats of the present size only can pass.
163 miles of old canal will be within the bounds of the new canal, when enlarged. It will cost to improve it, as proposed.....\$522,800 18
26 miles of the old canal will not be within the enlarged canal. It will cost to improve it.....100,891 45
Enlarging two locks on Montezuma marshes.....12,000 00
Enlarging four locks on western division.....20,000 00
For raising old locks, bridges and aqueducts.....13,000 09

	668,691 63
Add 10 per cent for contingencies.....	66,869 16

Total cost of improvement.....\$735,560 79

Of the money required for the improvement, 586,080 19 dollars will be expended within the bounds of the canal when enlarged, and will to that extent be available towards its completion.

But 149,480 60 dollars will be expended on old canal not within the bounds of the new, a sum too small to be named in comparison with the advantages to be derived from its expenditure.

This estimate is made from the best authority, and is abundantly large to accomplish all the work proposed to be done.

Another advantage which will result from the adoption of the proposed improvement will be an earlier completion of the Black River and Genesee Valley canals; as it will enable the Legislature to appropriate a larger amount of surplus revenues to their construction.

It has been said that the supply of water is not sufficient to render any improvement practicable, except an entire enlargement of the canal.

A few facts will correct this erroneous impres-

sion. The old lock at Frankfort, at the east end of the long level, had a lift of eight feet, requiring 7,275 cubic feet of water to pass a loaded boat.—The new locks at that point have a lift of 11 feet, requiring to pass the same boat 19,689 cubic feet, or 12,414 feet more than the old lock. The average lift of the enlarged locks is about eight feet. I think none exceed that west of Montezuma, except at Lockport. To pass an enlarged loaded boat drawing 4½ feet water through a lock of eight feet lift, will take 8,139 cubic feet of water. To pass a boat of the present size, drawing 3½ feet water, (to which they are restricted,) will take 11,682 feet of water—a saving in passing the enlarged boat of 3,543 feet, and passing at the same time twice the amount of freight with the small amount of water as is passed with the large amount, and saving near two-thirds in the quantity of water used for lockages.

At Lyons, 139 miles east from Buffalo, is an enlarged lock of eight feet lift, through which all the boats pass. This lock, in the dry season, is supplied with water from Lake Erie, passing through more than 100 miles of old canal before reaching the lock. The lockages at this lock were about 20,000 in 1850.

With the proposed improvement only about half the quantity of water, including evaporation, leakage and lockage, will be necessary to do the same amount of business in enlarged boats as is required to do it in those now used.

The current sets east in 296 miles of canal. Its strength is so great in many portions as to be a serious inconvenience to boats heavily laden with up freight.

The increased quantity of water required since the enlarged locks have been in use, has interfered materially with the water power on streams taken into the canal, involving the State in heavy claims for damages. Both the evils last referred to will be obviated by the proposed improvement.

It is not intended by this communication to prevent the adoption of any plan which has been submitted to the Legislature, each of which requires much time to accomplish.

The plan proposed by the undersigned, is one which he thinks should be immediately adopted, and the work commenced before the opening of navigation. There are many points where it is now difficult to pass two loaded boats of the present size; these points can all be improved before the opening of navigation, so as to give great relief to the present season, and at the opening of the navigation in 1853 we shall have most of the benefits of the enlarged canal.

I propose to obtain the funds with which to carry out the plan as follows:—

The improvement proposed is what is termed an "extraordinary repair." It is within the power of the canal board to order an "extraordinary repair" when the cost shall not exceed \$30,000. To expend a larger sum the authority of the Legislature is requisite.

In framing the new constitution, provision was made for paying from the canal revenues for the purposes of "ordinary repairs" only, leaving "extraordinary repairs" to be made whenever they became necessary from the \$1,000,000 authorized to be raised "for expenses not provided for" by section 10, article 7 of the constitution.

By authority of this provision in the constitution—\$50,000 was loaned under chapter 374. Laws of 1849, for "extraordinary repairs." And by the same authority \$172,585 49 was raised under chapter 232, Laws of 1849, to pay for the Albany Basin.

The balance of the \$1,000,000—\$757,414 51—may be loaned and applied to the improvement proposed; a sum greater by 21,853 70 than will be required.

If this improvement is made it will add 100 per cent to the capacity of the canal, give to a great extent the advantages of the enlargement, and cheapen transportation at least 33 per cent. It will increase the tolls in like proportion, (if kept at their present rates,) and for all time to come secure to our citizens the invaluable trade between the Eastern and Western States.

NELSON J. BRACH.

Dated Albany, 17th Feb., 1851.

Coal at Puget's Sound.

The Washington Republic, on the 15th inst., says:—A few weeks since a specimen of coal, recently discovered on Puget's Sound, was forwarded to the secretary of the navy, with the request, in view of the immense importance of this article to our Pacific steam marine, that he would cause it to be analyzed. The gentleman who forwarded the specimen to the department states that it was selected indiscriminately from a considerable quantity lying on the ground, which had been dug up from within three feet of the surface; that the various veins have a considerable dip towards the near hills and mountains on the west; thus there is every indication of its existence in great quantities; and that it is of easy access from a harbor, in which vessels of any size may anchor, in water as placid as a mill pond.

The specimen was submitted to Professor Johnson, and the report which follows presents the result of his analysis:

Washington, Feb. 11, 1851.

Commodore C. W. Skinner:—

DEAR SIR—I have examined the specimen of coal from Puget's Sound, this day received from you, through the kindness of Captain Aulick. It seems to be one of the purest American coals which I have yet seen.

It has a specific gravity of 1.315, and will weigh, in the merchantable state, from fifty-one to fifty-five pounds per cubic foot, according to the size of lumps, and will require on board a steamer about forty-two and a quarter cubic feet of space to stow one gross ton. It is of a brilliant lustre, wholly free from liability to soil.

It is composed of volatile matter.... 40 36 per ct.
Fixed carbon..... 56 84 " "
Earthy matter..... 2 80 " "

100 " "

After the luminous flame ceases, the coke burns with a bright glow, and leaves a light brick red or deep salmon-colored ash.

In coking, the coal scarcely increases in bulk, has no tendency to agglutinate, and, consequently, preserves an open fire, burning freely, and does not cover itself with ashes to such a degree as materially to obstruct the combustion. I suspect the specimen sent to have been taken from near the out crop of the bed. If so, we may reasonably expect that when pursued under greater covering, the amount of illuminating gas given out will be greater than was shown by this specimen.

The coal seems to be nearly free from sulphur. The ratio of its fixed to its volatile combustible matter is 1 4 to 1, and under a well constructed boiler, ought to produce from seven and a-half to eight and a-half pounds of steam from 212° to one pound of coal burned.

Yours, respectfully,

WALTER R. JOHNSON.

Trade of Boston with California.

It is stated in the Boston Price Current that the most marked feature in that market during the year has been the demand for good for California, and the large increase of the Boston trade with the Pacific. Early in the year the attention of all classes and callings were directed to this new field for commercial enterprise, and it was deemed merely necessary to make shipments there to realize a golden harvest. As might have been expected, the anticipations of many were doomed to disappointment, especially those who depended solely on shipments of lumber. The trade, of late, has passed into fewer hands, and is now confined principally to experienced mercantile houses, who are cautious in their shipments, and generally send out assorted cargoes, selected with a regard to the wants of that market, and which, so far, have yielded satisfactory returns. In order to show, at a glance, the extent of the trade of Boston with California, the Price Current gives the clearances from the port of Boston for the year 1849 and 1850, as follows:

	Ships.	Barks.	Brigs.	Schooners	Total.
1849..	58	37	41	15	151
1850..	53	57	31	28	166

Although this table shows an increase of only fifteen vessels, compared with 1849, the quantity of

merchandise going forward has been much larger and of far greater value.

North Carolina Coal.

A space of fifteen miles in length, by four or five miles in width, situated in Moore and Chatham counties, North Carolina, has been lately explored by Professor Johnson, who reports having found unmistakable signs of a deposit of the best kinds of bituminous, semibituminous, and anthracite coal. He states that the deposits extend a distance of thirty miles, by four or five miles in width, embracing a space of about 150 square miles. It is said also, that the deposits reach a depth of seven feet two inches, being greater than any like deposits in England.

Pennsylvania.

Pennsylvania Canals.—The Philadelphia Bulletin has the following annunciation:

The board of canal commissioners announces, that the water will be in the canal, at Columbia, on Monday next, the 24th inst. so that transportation will commence on that day on the main line, and continue uninterrupted to Pittsburgh.

By order of the Board.

THOMAS L. WILSON, Secretary.

The Bulletin adds—

The announcement of the opening of navigation on the Pennsylvania canal on Monday next, the 24th inst., must be hailed with satisfaction by every Pennsylvanian. This early opening, full 2 months in advance of the New York canals, together with the reduced rates of toll, will have an admirable tendency in throwing upon our State works an unusually heavy business. We understand that our transporters intend to open the spring business at the following low rates of freight:—Dry goods, 90 cents per 100 lbs., hardware 75 cents; and groceries 75 cts. Such low rates will attract a greater amount of trade that had hitherto been transported by sea to New Orleans and by other routes.

Central Railroad.—The following statement shows the fact of a very large increase of business in the travel and transportation on the Pennsylvania State railroad:—

Number of cars hauled over the Columbia and Philadelphia railroad during the months of Dec. and January, 1851,	19,324
Do. do. do. 1850,	13,121

Increase..... 6,203

We learn from the report of Gen. Rounfort to the canal commissioners, that, for the year 1850, the net income from the Philadelphia & Columbia railroad amounted to \$358,895 45, being about 9 per cent on \$4,000,000, the cost of the road and the machinery upon it.

Leggett's Gap Railroad.—We learn that the Leggett's Gap railroad company have commenced laying their track from Scranton (Lackawana iron works) with heavy T rail of the best quality, and have several miles ready for the cars. The company have commenced mining coal preparatory to stocking the road, which will be finished in a few months, forming a connection with the New York and Erie railroad at Great Bend. This road will be the medium for supplying western New York with coal.

Kentucky.

A bill has been introduced into the legislature of this State, making the following appropriations to various works of internal improvement, viz:

To the Kentucky river, \$200,000; to the unfinished roads, \$300,000; to the railroad from Louisville towards Tennessee, in the direction of Nashville, \$500,000; to a railroad from Lexington, in the direction of the Virginia line, \$500,000; to a railroad from the Louisville and Frankfort railroad, in the direction of Cumberland Gap, \$200,000; to Licking river, \$100,000.

EARNINGS AND EXPENSES OF RAILROADS OF NEW YORK, 1850.

NAME.	Miles in operation.	Miles run by passenger trains.	Whole number carried in the cars.	Number carried one mile.	Number carried each mile run.	Earnings from passengers.	Expenses of passenger business.	Earned per passenger per mile—cents.	Cost per passenger per mile—cents.	Earned per mile run—cents.	Cost per mile run—cents.	Profit per passenger per mile—cents.	Profit per mile run—cents.
Albany and Schenectady.....	17	51,545	284,279	4,832,743	93½	132,207 69	48,765 00	2.735	1.009	256	94	1.726	162
Albany and W. Stockbridge.....	38½	53,298	159,108	5,302,543	90½	185,744 69	.....	2.6	.....	235	.....	.....	.....
Attica and Buffalo.....	31½	78,978	236,473	7,165,753	90½	386,616 13	115,583 45	2.82	.843	215	64	1.976	151
Auburn and Rochester.....	78	179,550	271,303½	13,711,977	76½	.....	.....	.....	.....	.....	.....	.....	.....
Auburn and Syracuse.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Buffalo and Niagara Falls.....	22	27,104	124,682	2,602,235	96	67,979 49	.....	2.612	.....	250	.....	.....	.....
Cayuga and Susquehanna.....	35	.....	25,653	1,517,980	.....	33,600 63	.....	.....	.....	.....	.....	.....	.....
Chemung.....	17½	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hudson and Berkshire.....	31½	38,896	33,491	546,592	14	14,771 63	13,222 43	2.702	2.419	38	34	.283	4
Hudson River.....	75	158,431	509,180	17,821,300	112	242,595 10	144,647 53	1.361	.812	153	91	.549	62
Long Island.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New York and Erie.....	337	404,156	414,727	26,224,147	65	541,114 56	.....	2.063	.....	134	.....	.....	.....
New York and Harlem.....	80	214,375	.....	.....	.....	324,368 18	.....	.....	.....	.....	.....	.....	.....
New York and New Haven.....	61	282,797	652,122	20,867,904	73½	402,358 17	218,062 43	1.923	1.045	142	77	.878	65
Northern.....	44	10,332	5,922	200,730	19½	6,623 19	3,057 16	3.299	1.772	64	34	1.527	30
Oswego and Syracuse.....	35	58,480	77,162	1,937,085	33	57,118 33	32,607 24	3	1.683	97	55	1.317	42
Rensselaer and Saratoga.....	25½	35,413	110,580	2,868,508	81	84,463 58	.....	2.944	.....	238	.....	.....	.....
Rochester and Syracuse.....	104	55,952	93,561½	5,964,535	106½	176,991 47	64,806 74	2.967	.789	316	84	2.176	232
Saratoga and Schenectady.....	22	15,576	99,817	939,836	60	13,728 33	.....	1.461	.....	88	.....	.....	.....
Saratoga and Washington.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Schenectady and Troy.....	20½	53,845	56,812	1,117,595	22	26,539 80	.....	2.375	.....	49	.....	.....	.....
Syracuse and Utica.....	53	149,951	340,945	14,093,485	94	366,077 07	148,942 16	2.597	1.056	244	99	1.541	145
Tonawanda.....	43½	115,884	256,404	9,571,050	82½	255,252 80	74,567 03	2.667	.779	220	64	1.888	156
Troy and Greenbush.....	6	47,792	237,796	1,426,776	30	33,904 46	32,873 45	2.376	2.304	71	69	.072	2
Utica and Schenectady.....	78	229,940	370,988½	22,430,109	97½	595,472 27	175,127 99	2.655	.781	251	76	1.874	175
Watertown and Rome.....	18	1,440	2,601	32,736	22½	1,043 23	.....	3.187	.....	72	.....	.....	.....

NAMES.	Miles run by trains.	Total tons carried.	Tons carried one mile.	Tons each mile run.	Earnings from freight.	Cost of freight business.	Earned per ton per mile—cents.	Cost per ton per mile.	Earned per mile run—cents.	Cost per mile run—cents.	Profit per ton per mile.	Profit per mile run.	Earnings from sources other than passenger and freight.	Total earnings.	Total expenses transportation.
Albany and Schenectady.....	32,248	63,012	1,071,204	33 1-5	70,242 69	42,406 98	6.557	39.58	215	131	26	87	6,134 50	208,584 88	91,171 98
Albany and West Stockbridge.....	131,019	170,580	6,422,000												
Attica and Buffalo.....	32,870	24,184	761,787	23 1-6	37,765 35		4.957		115				6,200 00	229,710 04	70,909 13
Auburn and Rochester.....	62,016	34,145	2,663,310	43	111,998 49	47,882 19	4.208	1.798	180	77	2.407	103	17,196 32	515,810 94	163,465 64
Auburn and Syracuse.....															
Buffalo and Niagara Falls.....					4,316 58								1,000 00	73,296 07	17,218 66
Cayuga and Susquehanna.....	7,280	8,886	311,010		10,417 22								4,207 25	48,225 10	30,810 91
Chemung.....															
Hudson and Berkshire.....	17,680	23,809	577,130	32½	25,269 26	13,127 45	4.378	2.274	143	70	2.104	73	1,000 00	41,040 91	27,349 88
Hudson River.....	25,080	5,745	229,800	9	18,575 56	9,235 94	8.083	4.019	74	37	4.064	37	6,490 00	267,660 66	167,383 47
Long Island.....															
New York and Erie.....	299,456	131,311	17,536,090	58½	522,835 71		2.981		174					1,063,950 27	518,412 66
New York and Harlem.....	82,711	27,957			114,405 94								43,793 39	482,567 51	206,719 03
New York and New Haven.....	25,688	15,473	625,000	24½	26,818 91	19,823 94	4.291	3.172	107	73	1.119	34	32,612 23	461,789 31	237,886 38
Northern.....	17,341	12,074	196,098	11½	11,187 69	8,760 50	5.705	4.977	64	50	.728	14	347 69	18,158 57	12,317 66
Oswego and Syracuse.....	16,000	7,949	267,089	16½	9,061 32	6,335 68	3.392	2.372	56	39	1.020	17	12,191 96	78,371 64	38,942 92
Rensselaer and Saratoga.....	10,000	10,610	319,469	32	16,547 66		5.180		165				11,715 53	112,726 77	47,688 62
Rochester and Syracuse.....	15,400	9,604	338,530	54.4	24,444 74	18,759 36	2.676	1.640	158	89	1.036	69		201,436 21	60,876 58
Saratoga and Schenectady.....	6,140	4,434	53,578	8½	3,902 27		7.283		63				11,305 11	28,935 71	15,794 24
Saratoga and Washington.....															
Schenectady and Troy.....	7,462	17,031	349,130	46½	14,926 89		4.246		200				879 00	42,345 69	60,267 71
Syracuse and Utica.....	50,170				90,878 97	53,785 98							15,819 73	472,775 77	202,728 14
Tonawanda.....	38,144	29,211	859,807	22½	67,668 37	35,055 55	7.87	4.077	177	91	3.793	85	21,476 88	344,398 05	109,622 27
Troy and Greenbush.....	6,921	38,988	233,930	34 4-5	24,261 63	11,060 70	14.647	4.728	350	159	9.919	191	1,252 72	59,418 81	43,054 48
Utica and Schenectady.....	93,580	98,695	4,760,730	50	255,668 47	133,045 87	5.370	2.797	273	142	2.573	131	72,285 25	923,425 99	308,173 86
Watertown and Rome.....	1,224	680	13,285	10.7	4,089 12		8.198		89					2,132 35	

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AMERICAN RAILROAD JOURNAL.

Saturday, March 1, 1851.

A New Rail for Railroads.

We invite the particular attention of engineers of railroad companies to the article in our paper of to-day, by Mr. Latrobe of the Baltimore and Ohio railroad, upon the subject of a new form of rail for railroads. Our next paper will contain the balance of the article, and also a lithographic drawing, showing the form proposed to be used. The writers experience in railway matters entitles his views to the most careful consideration. They will receive a thorough examination, from the well known reputation of the author.

Both the scientific and the practical man feel, that the great field for reform in railroad construction is in substituting an improved rail for the one in use. The present form is bad in theory, bad in its results, and the source of a great annoyance in its use. We have not a doubt that a rail nearly theoretically and practically perfect, may be made with but a slight additional expense upon the form now in use. If such an improvement could be effected it would be impossible to compute the extent of its value.

One thing we may be assured of, that the public will never rest satisfied till the practicability or impracticability of the proposed improvement shall be demonstrated one way or another. We invite communications upon this subject from railroad engineers, for the purpose of collecting the opinions and experience of those best fitted to speak upon this subject.

Stock and Money Market.

As stated in our last, the general aspect of the money market is favorable. Securities of companies borrowing money, continue to be negotiated with comparative ease, at rates which net the seller from 85 to 90, and yield the purchaser about 8 per cent per annum.

The wants of our railroad companies are fast assuming the character of a steady and uniform demand upon the capital of the country, and in our calculations for the future, we should take into consideration the influence of this demand, just as we should the sum that is annually required to pay our foreign indebtedness. Every year will witness a regular increase in the number of railroad enterprises, and a much larger amount of capital will be absorbed in their construction, than in any other kind of permanent investment. In the adjustment of the tariff, and in every movement that has reference to our monetary concerns, the influence of

this new element in business affairs, should receive careful attention.

There can hardly be less than 3,000 miles of railroad built annually, for the next three years. This may seem a large estimate, but let any person familiar with the subject, calculate the number of miles in progress in each State, and he will be convinced that the amount is not over stated. The roads in progress in the States of New York, Ohio, Indiana and Virginia will make up nearly one-half of the estimate. A large number of other States have 400 or 500 miles in progress, and as we have 30 States in the Union without including California, it will require only 300 miles to each, to equal the above estimate. We have pretty carefully examined into this matter, and believe that we are not far from correct.

The average cost of these roads will not much exceed \$20,000 to the mile. Taking this sum as the average, and the cost of the new roads to be built within the next three years will amount to \$180,000,000. If this sum should be thought to be high, it must be remembered that a very large amount will be required for roads already in operation; so that the actual sum absorbed by these works will exceed rather than fall short of the above estimate. This amo will, in the short space of three years, be taken from our active capital, for investment, which will yield an average of not more than 6 or 7 per cent.

The amount required yearly for the next 3 years will be equal to two and one-half dollars to every person in the United States. This would not be a very heavy tax, if it could be paid out of the direct products of every person's industry. A greater part of it can be so paid. The reason why the roads in progress in the south and west have so little tendency to disturb the money market is the fact, that those interested in their construction can readily out of their own means prepare the road bed for the iron, without inconvenience or embarrassment. But our great danger lies in the extent of our importations from abroad. If our above estimates are correct, we must pay something over \$12,000,000 annually to foreign manufacturers, for the article of iron alone. It is from this, more than from all other causes, that we must anticipate a disturbance in our monetary affairs, resulting from our railroad enterprises.

In framing a tariff we think the true rule to be followed is to impose a rate of duties which shall always leave a small balance of trade in our favor. No matter how small this may be, the rule should be adhered to, under all circumstances. It is one upon which all parties can unite, as it is essential to the prosperity of all classes and pursuits. We had better let some interests suffer from what may be thought to be adequate protection, than depart from a rule alike intelligible and beneficial to the great mass. This system will allow the greatest degree of freedom of trade compatible with the highest good. (We are of course speaking without reference to the amount of revenue required.—Our wants in this respect may compel us to adopt a rate of duty very different from the true theoretical standard.)

No nation at the present day can part with its gold and silver without sinking into a commercial vassalage to the one that has obtained the possession of them. The simple reason of this, without going elaborately into the cause, is, that the precious metals are necessary to the transfer of property, and the transactions of business. Property

falls in value, just in proportion to the difficulty of making transfers of it. The old theory, therefore, of the *balance of trade*, though based upon erroneous ideas as to the superior value of gold and silver, is nevertheless strictly true, when their uses are considered. The precious metals are no more valuable than any other kinds of property, but they perform an office which no other can be made to perform, and every people must possess a certain quantity of them for this office. Horses are no more valuable than oxen, but they are indispensable in cases in which the latter would be worthless.

If the balance of trade continues in our favor, we do not anticipate any great inconvenience, even from the expenditure of \$60,000,000 annually upon our railroads. This sum is but little more than half of the annual amount expended in Great Britain for the past ten years upon the railroads of that country, where at least \$1,000,000,000 have been invested since 1840. This enormous expenditure would have exerted no bad effects, but for the vast sums squandered upon useless lines, and by corrupt management. The amount expended in some years equalled at least \$150,000,000. In 1849, a year of unexampled abundance of money, the railroad calls in England amounted to 100,000,000. The great cause of the break down there, was the immense depreciation of railroad property. The cost of these works would not have been felt, if there had been no loss from this source. We have but little to fear from a similar cause. With us, there is but little danger that the capital drawn from the monetary circles will be lost, or that the securities received in exchange, will ever go below par. The communities through which the road will run, can well afford to lose the cost of grading and preparing the road bed for the iron if they can secure a railroad thereby. A considerable portion of their contributions are never turned into money. Of course the expenditure of these does not affect the market. As our currency is made up, abundance and scarcity of money are terms synonymous with *confidence*, a *lack of confidence*. A person in possession of an abundance of United States stocks, can never by long in want of money in any condition of the market. These can always be made the basis of a credit, or converted into money, at will. So with all other well known and safe securities.

During the present week, two pretty extensive sales of bonds have been made at auction, those of the Ohio Central, and the Lafayette and Indianapolis railroads. The following are the reported sales of the former:

\$6,000 at.....	93
3,000	92½
13,000	92½
5,000	92
2,000	91½
7,000	91
\$1,000 at.....	90½
3,000	90½
5,000	90
52,000	88½
153,000	89½

The Lafayette and Indianapolis bonds, \$250,000, sold at prices ranging from 91 to 84, at which closing price \$90,000 was sold. The average of the sale was 86½ to 87.

In addition to the public sales, a very large amount of bonds have been disposed at private sales. Among these may be named the bonds of the Dayton and Western, to the amount of \$300,000, the Greenville and Miami, to the amount of

\$150,000. The new Albany and Salem railroad company, Indiana, has also negotiated a large loan for the prosecution of that work. The Terre Haute and Indianapolis co., have sold a portion of its recent issue of bonds, a sufficient amount to meet its immediate wants. The route occupied by this company, together with the favorable exhibit of its affairs, have caused these bonds to be sought after for investment, and to be taken from first hands, without going into the street. A large amount of country securities are still before the market, and the supply is likely to continue. Next week the Erie railroad will sell bonds to the amount of \$3,500,000, to fund its floating debt. The sale of so large a sum will probably depress prices for a short time, till this amount shall have been absorbed among our capitalists. This great road will be opened to the Lake in about two months from this time.

The tendency of the stock market has been upward during the week, but flatted off on the reception of the Steamer's news, the fall in cotton being the cause. Iron remains about the same. The non-action of Congress upon the tariff may be made the occasion for higher quotations on this article.

SALES OF STOCK IN NEW YORK.

	February 21. Sales.	February 18. Sales.
U. S '67 Loan.....	115½	115½
Erie R.R.....	84½	82½
Harlem R.R.....	68½	69
Stonington.....	41	42
L.I. R.R.....	24½	23½
Norwich & Wor....	61	61
Del. & Hudson.....	134½	133½
Rochester & Syracuse	—	112½
Reading.....	62½	60
Morris Canal.....	20½	20
Erie income.....	94½	93½
Hudson River.....	—	82
" " Bonds.....	104½	104
Utica and Sch'y RR.	125	—
Canton.....	60	58
Farmers Loan.....	66	67½

SALES OF STOCKS IN BOSTON.

	Feb. 20.	Feb. 13.
Old Colony Railroad.....	67	68½
Boston and Maine R.R.....	106	105½
Eastern Railroad.....	102½	103½
Fitchburg Railroad.....	111½	111½
Michigan Central Railroad.....	94½	—
Northern Railroad.....	72½	72
Vermont Central Railroad.....	25½	35
Vermont and Mass. R.R.....	30½	30
Western Railroad.....	107	107
Ogdensburg Railroad.....	39½	39½
Rutland Railroad.....	59	58½
Boston and Worcester Railroad.....	106	105
Rutland Railroad Bonds.....	88	85
Ogdensburg Railroad Bonds.....	99½	99
Vermont Central R.R. Bonds.....	92½	92
Norfolk County R.R. Bonds.....	74	—
Boston and Providence R.R.....	85	86
Philadelphia, Wilm'gton & Balt.	31	30
Concord R.R.....	55½	—
Connecticut river R.R.....	75	—
Cheshire R.R.....	61	62
Boston, Concord & Montreal.....	43	—
Nashua & Lowell.....	109	108½
Fall River Railroad.....	—	92½
Sullivan Railroad.....	20	20
Manchester and Lawrence.....	90	90
Worcester and Nashua.....	51½	51

Tennessee.

East Tennessee and Virginia R. R.—This link in the great central northern and southern line of railroad, though the last commenced, bids fair to be one of the first to be constructed. Those upon whom the work of construction devolves, the people on the route, have certainly manifested more interest, and displayed more energy, in the prose-

cution of this enterprise, than has been exhibited by any of their coadjutors in the great work of which this is a part. Already the grading of 40 miles of the line has been put under contract to a Mr. Furguson, of Pennsylvania, an experienced contractor, for \$130,000, one half of which he takes in Stock. Should the State of Tennessee, as is confidently expected, guarantee the bonds of the company to an amount sufficient to purchase the iron, the road will be constructed with as much dispatch as is possible, taking into consideration its length of line.

Louisville and Nashville Railroad.—A distinguished gentleman who has taken an active part in public meetings in the southern part of Kentucky upon the subject of this railroad, speaking of what the counties and cities on the route will subscribe, says there is no doubt at all that Nelson will put down \$230,000, Larue \$50,000, Hart \$100,000, Barren \$250,000, Allen \$100,000, Sumner \$300,000, Nashville \$500,000, and Louisville, \$1,000,000, making an aggregate of \$2,550,000—which is \$50,000 more than Mr. Stevenson, the president of the Nashville and Chattanooga road, says will complete the work.—*Memphis Eagle.*

Profits of Plank Roads.—The Syracuse and Oswego plank road is about 31 miles in length, and, including its eleven toll houses, was constructed at a cost of \$43,964. Up to the time of holding the first annual meeting in December, there had been received for tolls \$5,757—the road having been in operation less than a year.

North Carolina.

The Norfolk Argus of January 31st, states that after much opposition and difficulty, the Raleigh and Gaston R. R. bill passed the Senate on the last night of the session. The bill provides that, upon an expenditure of \$400,000 by the present stockholders of the road for the construction of the work, then the State of North Carolina re-leases them from their indebtedness to her on account of liabilities growing out of their connection with the road, and the stockholders and the State are to be equally interested in the work.

Railroad Suit and Verdict.

At the late sitting of the Supreme Court in Boston, the jury having under consideration the case of the Boston and Worcester railroad corporation vs. Amos W. Dana, late depot master for them in this city, to recover some \$20,000 damages for alleged appropriation of the funds of the corporation to his own use, by the sale of tickets, etc, unaccounted for, returned a verdict for plaintiffs, and assessed damages in the sum of \$6,841.

Communication between Albany and Vermont and Canada Railroads.

On the first day of July next, a continuous and direct line of railway will be completed and in running order, from the city of Montreal to Eagle Bridge, of more than 200 miles in length—Eagle Bridge being a point on the Hoosic river, in the county of Washington, about 30 miles distant from Albany.

The roads constituting this chain of railway are the

Troy and Rutland, from Eagle Bridge to Salem.....	17 miles.
Rutland and Washington, from Salem to Rutland.....	40 "
Rutland and Burlington (in part) from Rutland to Burlington.....	64 "
Vermont and Canada, from Burlington to the Canada line.....	38 "
Champlain, St. Lawrence and St. Johns, Rouse's Point to Montreal.....	44 "

203 miles.

Adding to this, the distance between New York and Eagle Bridge, (between which a line of railroad will be in operation before the close of the present year), which is about 170 miles, and we shall have an almost through line to Montreal, of about 375 miles.

Railroad from Portsmouth, N. H., to Rouse's Point.

The Portsmouth Journal states that the length of route from Rouse's Point, or Ogdensburg railroad, to Portsmouth, by the Boston, Concord and Montreal, the Cochecho, and the Portsmouth and Dover railroads, extended through Vermont, is two hundred and sixteen miles; from Rouse's Point to Boston, by Burlington, Montpelier, White River, Concord, etc., is two hundred and ninety-seven miles; making it eighty-one miles nearer to Portsmouth than to Boston. From Montreal to Portsmouth by the former route is two hundred and fifty miles; from Montreal to Boston by the latter, is three hundred and forty miles; making it ninety miles nearer to Portsmouth than to Boston. The Journal states that the completion of all parts of the line is secured, excepting the distance from Portsmouth to Dover, 16 miles, and urges the importance of the early construction of this short link. It also expresses the opinion, that the excellent harbor at Portsmouth would attract to that town a large amount of business, if the above connections should be formed.

Liabilities of Railroad Companies.

In a recent case tried before the Supreme Court of Massachusetts, Mann, administrator, vs. the Boston and Worcester railroad company, the jury, under the direction of the court, returned a pro forma verdict for defendants. The case was substantially as follows: Daniels, while crossing the Holiston branch of the Worcester railroad, in a wagon, was killed. The administrator of his estate brought an action against the R. R. company for \$10,000 damages. The court decides that this is a similar case with that of a woman killed upon the same road, at the South Cove, where it was decided that the road was not liable for a person not a passenger, injured or killed while carelessly upon the track. Upon this question of law, the case will go before the whole court.

Ohio and Mississippi Railroad Co.

This company having, at the recent session of the legislature of Illinois, obtained a charter for a line from Vincennes to Illinoistown, opposite St. Louis, and with it, secured the right of way for the whole distance from Cincinnati to the Mississippi river, are now taking the preliminary steps toward the commencement of this great work, which is likely to give a new impulse to the railroad feeling of the three great western States.

There are two intermediate arbitrary points in the charter, Laurenceburgh and Vincennes. The former is a natural point in the line.

The whole length of line will be about 330 miles, viz: 20 miles in Ohio, 160 in Indiana, and 150 in Illinois.

This road has been a favorite project of Cincinnati, for the purpose of connecting herself with St. Louis, by the shortest possible route. The refusal of Illinois to grant the right of way across that State, has had the effect to prevent the commencement of the work of construction. This objection being removed, we learn that there is now every prospect of its vigorous prosecution. Parties of engineers are now in the field, and the work upon

the first division out of Cincinnati will, we presume, be commenced at once.

The subscriptions to the stock amount to about \$1,200,000: \$600,000 was subscribed by the city of Cincinnati. But little has been done in the way of obtaining subscriptions to stock, owing to the uncertainty of obtaining the right to run through Illinois.

The whole route is said to be favorable, the grades in no case exceeding 35 feet to the mile.—Such is the statement of engineers familiar with the route. Professor Mitchell, in his report, also states the route to be a good one, though we believe that, as far as Indiana is concerned, it has been considered to be a difficult one for the west. Careful surveys will undoubtedly remove many obstacles that are now supposed to exist.

The first part of the line, or so much of it as will carry it to the Jeffersonville railroad, is important for the purpose of opening a railroad communication between Cincinnati and Louisville.—We presume that the first efforts will be directed toward constructing a railroad to a point of junction with the former.

We have received a copy of Prof. Mitchell's survey made a few years since, a greater portion of which we shall copy at our first opportunity.

Alabama.

Girard Railroad.—We are pleased to learn, says the N. O. Bulletin, that the President of the company, who had been in our city for some days has opened books of subscription with the most encouraging prospects. The gentlemen who have already subscribed comprise our most discerning and intelligent citizens, who, from their position, are best able to appreciate the merits of the undertaking. Their names to the list, and the amounts subscribed by them, are satisfactory evidences of their appreciation of the enterprise. We hope our citizens generally will favor this work, and encourage its progress by liberal subscriptions.

Kentucky

Lexington and Maysville Railroad.—The county court of Mason have subscribed 150,000 dollars in stock in the Maysville and Lexington railroad company, and the issue of the bonds of the county in payment therefor. A majority of all the Justices of the county were present, and the vote on the adoption of the order was unanimous.

The Maysville Eagle says:—"The city subscription is the same as that of the county, making \$300,000 together. Besides this, considerably upwards of \$100,000 have been subscribed by private citizens; and still subscriptions are going on. There is a lively competition in subscriptions on the rival routes through the county; and we anticipate an aggregate of \$500,000 towards the railroad in all of Mason county."

Extension of the Harlem R. R. Northward.

A route for a railroad is now being surveyed between Hoosic and Chatham, through Rensselaer Co. to connect the Washington Co. and Benington railroad, with the Harlem railroad. The former is to be finished to the Hoosic River Valley, by the 4th of next July, and the latter to Chatham, at the same time. There will be then wanting only 36 miles of railroad to complete a great interior railroad to Burlington, Vt., Ogdensburg, on the St. Lawrence and Montreal, and ultimately Quebec, &c. This 36 miles is now being surveyed, and has progressed far enough to demonstrate the fact of great feasibility. There is a continuous valley from Chatham, through New Lebanon,

Stevetown, Berlin, and Petersburg, to the Hoosic river. The route is unusually favorable for easy grading—few curves, and of very moderate grades. This road is of especial importance to New York, as it will connect with the Ogdensburg road and the entire western Vt. Valley, forwarding freight and passengers down to New York.

Ohio.

Cincinnati and Cleveland.—These two cities are now united by railroad. On the 21st ult. the city council of Cincinnati and a number of its private citizens passed over the entire line, with a view to celebrate the birth day of Washington in the Lake city. The railroad communication from Cincinnati to Cleveland is composed of three links, as follows, viz:

Little Miami railroad to Xenia.....	65 miles.
Columbus and Xenia.....	54 "
Cleveland and Columbus.....	149 "

Total.....268 "

The entire distance will be made in the summer time in not more than fourteen hours.

South Carolina Railroad.—At a meeting of the stockholders of this company, the following gentlemen were elected directors for the ensuing year:—

H. W. Conner,
John Bryce,
Wade Hampton,
Alfred Huger,
Andrew Wallace,
A. Burnside,
W. C. Dukes,
Robert Martin.

Robert Caldwell,
L. J. Patterson,
G. A. Trenholm,
Henry Gourdin,
C. J. Shannon,
W. B. Pringle.
Ker Boyce.

New York.

Albany and Northern Railroad.—A company has been recently engaged at Albany on the above title, the object of which is to construct a railroad from Albany through West Troy, Cohoes, Waterford, Schaghticoke, to Eagle Bridge in Washington county, there to connect with the Washington and Rutland railroad, thus forming a continuous line of railway from Montreal and Ogdensburg. The following gentlemen are the directors, viz:—Erastus Corning, Marcus T. Reynolds, James Edwards, Samuel Pruyn, James A. Wilson, William W. Forsyth, Wm. V. Many, John B. James, John T. Cooper, Franklin Townsend, Visscher Ten Eyck, Robert H. Pruyn and Lansing Pruyn. To secure this great work the city of Albany is only required to subscribe the sum of \$335,000. It is the intention of the directors to have the road in running order before the 20th of November next. The line will be completed to Hoosic Bridge by the 1st of July next.

Ohio.

Opening of the Cleveland and Columbus Railroad.—The Columbus State Journal of the 19th says:

Yesterday we took a trip on the Cleveland railroad thirty one miles, to the point where the two ends of the road were to be united, thus finishing the work. We arrived in company with a goodly number of citizens, and people from all the adjacent country, about 11 o'clock. On the south side of the gap was the locomotive from Cleveland, and a long row of freight cars. Four or five hundred people of both sexes met in the woods to witness the important ceremony of laying the last rail and driving the last spike of this great work. Alfred Kelley, the energetic and able president of the company, assisted by Mr. Case, Mayor of Cleveland, Senator Payne, &c., proceeded to the task, and when finished, three hearty cheers, the firing of canon, and the whistling of two locomotives made the whole woods ring, as they never rang before. The Cleveland cars then passed over the last laid rail, and returning, started for the "For-

est city," taking with them Mr. Kelly, Mayor, Case, &c., where they arrived last evening, accomplishing the distance from Columbus to Cleveland in less time than it was ever done before.

Tennessee.

Directors of the East Tennessee and Georgia Railroad Company for the ensuing year:—

For the Stockholders.—James H. Reagan, Alexander Ish, I. T. Lenoir, Wm. F. Keith, A. D. Keyes, John H. Crozier, Thomas C. Lyon, John Stanfield, David L. Knox.

For the State.—Dr. J. G. M. Ramsey, F. S. Heiskell, Knox county; Jno. Jarnagin, Anderson; Wm. Lenoir, jr. Roane; E. Johnson, Monroe; D. C. Kenner, Jno. C. Gaut, Bradley; Jos. McCulley, W. P. H. McDermott, McMinn.

Louisiana.

Active preparations are going forward at New Orleans for the construction of a railroad from that city to Jackson, Miss. A committee of arrangements, consisting of one member from each municipality and the city of Lafayette, has been appointed, and \$2000 have been placed at their disposal to commence the survey. Mr. Augustus S. Phelps has been elected engineer.

Ohio.

Ohio Central Railroad.—From the proceedings of a meeting of the directors of the above company, recently held at Zanesville, to hear a report of the president of said company of his recent negotiations of its securities, we learn that he succeeded in disposing of the bonds of the company to the amount of \$450,000, and of the bonds of the county of Licking, the county of Muskingum, and the city of Zanesville, to the amount of \$180,000.—These are all the bonds of this description, now held by the company, except about \$17,000 of domestic bonds of Zanesville and Muskingum county, which are still in the hands of the treasurer.

We also learn that Col. Sullivan made arrangements for the purchase of 6,000 tons of iron, and four locomotives for the use of the road.

It is also stated that an arrangement has been recently concluded by which the citizens of Columbus, and the directors of the Xenia and Columbus railroad company have undertaken to furnish one hundred thousand dollars, toward the construction of the Central road.

The following resolutions were passed at the meeting having reference to the further progress of the work:

Resolved, That the interests of the company, and the interests of the community demand, the earliest possible construction of that portion of the Central Ohio railroad, lying between Zanesville and the Ohio river.

Resolved, That the commissioners of Muskingum county, be requested to take the necessary legal steps, to have a vote of the people of the county taken at the ensuing April election, upon the question of a further county subscription to the stock of said road.

Resolved, That the president cause to be laid before the board of directors at as early a period as practicable, the report of the chief engineer as to the estimated expense of the construction and equipment of the eastern division of the Central Ohio railroad between Zanesville and the Ohio river.

Resolved, That the president be fully authorised to cause books to be opened for subscription to the capital stock of the Central Ohio railroad at such points in the counties of Muskingum, Guernsey, and Belmont, and elsewhere as may be deemed advisable by him.

Resolved, That for the purpose of carrying the above resolutions into immediate effect, the president be authorised to employ competent agents to solicit subscriptions to the stock of the company, paying such agents a moderate compensation

therefor, as well for subscription, as for securing the right of way.

New York.

Mohawk Valley Railroad.—Hon. A. C. Flagg has been chosen president of the above company, and E. H. Broadhead, Esq., has been selected as chief engineer.

We understand that it is intended to enter upon the survey at once, and as soon as the line is established, to put it under contract.

Illinois.

There have been two companies chartered to build railroads across the southern part of this State—the Terre Haute and Alton, and the Ohio and Mississippi railroads; the latter from Vincennes to Illinoistown, opposite St. Louis. A charter was refused for a road from Terre Haute to Illinoistown for reasons of "State policy."

Wisconsin.

A bill to incorporate the Milwaukee, Green Bay and Fond du Lac railroad company has passed both branches of the legislature of Wisconsin.—The capital of the company is fixed at \$2,000,000, in shares of 100 each, and when five hundred shares of the stock are taken, and \$5 a share paid in, the company is to be organised.

Alabama.

Girard Railroad.—The Mobile Register of 11th ult., says: "We are pleased to learn that the commissioners for obtaining subscriptions to the capital stock of their noble enterprise, have succeeded beyond their expectation in New Orleans. After only three days' effort, they received actual subscriptions to the amount of \$200,000, and satisfactory assurances that that city will do all that is desired from her."

Ohio.

Ohio and Indiana Railroad.—The line of this road commences at Crestline, the western terminus of the Ohio and Pennsylvania railroad, and will thence run in a northwesterly direction, through Bucyrus, in Crawford county, Upper Sandusky, in Wyandott county, and then through the counties of Hancock, Putnam and Van Wert, in Ohio, and the county of Allen, in Indiana, terminating for the present at Fort Wayne, on the Wabash and Erie canal. Its further extension will be to Chicago, Galena, etc. The length of the line is 126 miles, and the engineer's estimate of grading and bridging is \$3,800 per mile, or \$478,000 to prepare the road for the rails. Surveys have been commenced and preparations are making to put that portion of the road between Crestline and Bucyrus under contract.

The present subscriptions to the stock of the company amount to about \$200,000, of this \$150,000 are county subscriptions, and \$50,000 private. In addition to this, Allen county, Indiana, is expected to vote a stock subscription of \$50,000—making the probable means now secured \$280,000. A further subscription of \$200,000 would secure the construction of the whole line. It is expected that this amount will be secured without difficulty.

The line is a very important one in every point of view, and we hope to witness its vigorous prosecution.

Michigan Southern Railroad.

Mr. Jervis, the chief engineer of the Northern Indiana railroad, states that the whole line of this road between Michigan City and the Illinois State line, 36 miles, will be ready for the iron on the 1st of April next. The eastern section of the road

from Michigan City to the Michigan State line has been surveyed, and proposals advertised. The contractors will, soon be on the whole line.

Illinois.

Central Railroad Co.—The following are the leading features of the charter recently granted by this State for the construction of the above road.

The bill grants to the company the lands donated by Congress; the right of way belonging to the State; the depot lot in Cairo; all property belonging to the State, connected with the road; and right of way through all lands of the State. A certificate of the organisation of the company is to be presented to the governor, showing that the charter is accepted; that one million of stock is subscribed and 20 per cent paid in.

The company is also to deposit \$300,000 of interest-paying State indebtedness, or \$200,000 in cash or U. S. stock, in the State treasury, to be returned when fifty miles of the road are made.—The governor is then to deed the property, lands, etc., to the company, the company at the same time making a deed of trust, to trustees, to be named in the bill, of all the road and real estate as general security for compliance on the part of the company, with the law of Congress, for the completion of the road according to the charter, and the full indemnity of the State for all loss or liability to grow out of the non-compliance of the company with the charter. It is also provided that if fifty miles of road is not completed in two years, the whole amount deposited with the treasurer is to be absolutely forfeited to the State.

The route of the main track is fixed centrally, by requiring it to run not more than five miles from the northeast corner of township 21 north of range 2 east of 3d principal meridian, nor to diverge at any place more than 17 miles from a straight line between the two terminating points.

A branch is to run via Galena to Dubuque; another to Chicago, diverging north of 39½ degrees.

The central track is to be completed in four years, and the branches in six years from the execution of the deed of trust.

One fourth of the lands is to be exempt from the operation of the deed of trust, to be sold to meet current expenses, construction, etc., but not to be sold faster than money is expended on the road.—On the faith of the remaining three fourths, the company may issue bonds and raise money to complete the road—the incumbrance created by that issue subject to the prior lien of the State.

On completing each fifty miles of road, the trustees may sell the incumbered land adjacent thereto for cash or bonds, on which the incumbrance created by the bonds on the tracts sold shall cease, and the trustees shall cancel and return to the company bonds equal to the amount of the sale.

After the completion of the road and branches, the company is to pay into the treasury of the state semi-annually five per cent of the gross proceeds of the entire road. The property of the company is to be subject to taxation. When the state taxes exceed three fourths of one per cent, the excess is to be deducted from the five per cent of the gross proceeds, and when such taxes do not amount to a sum which when added to the five per cent is equal to seven per cent of the entire gross proceeds, then the company is to pay the deficiency. Sixty days are given to the company to accept the terms of the bill, and a section is added which will leave it open to any other company in case the present one does not accept.

Railroad Fares from Albany to Buffalo.

The Albany Argus, in speaking of the reduction of fare from Buffalo to Albany, says:—"We are credibly informed that the directors do not intend to stop here; but if it is found that under the present rates there should be a sufficient increase of travel to warrant it, a still further reduction will be made. That is the position to take; and the capital which would have been used in constructing a parallel road—called for by the former high rates—can be used in building roads where there now are none, but where the public interests call for their speedy construction."

We think it will be found difficult to raise two millions of dollars to build a parallel road to compete with the Utica and Schenectady, at fares less than two cents per mile.

Indiana.

The new constitution of Indiana provides that "no county shall subscribe for stock in any incorporated company, unless the same be paid for at the time of such subscriptions; nor shall any county loan its credit to any incorporated company, nor borrow money for the purpose of taking stock in any such company, nor shall the general assembly ever, on behalf of the State, assume the debt of any county, city, town or township; nor of any corporation whatever."

It is stated that Mr. David A. Neal has resumed his situation on the Reading railroad as agent for the eastern stockholders.

Iron Pavement.

Iron is dally coming into more general use for almost every purpose. A letter from Paris, of a late date, says:

A new pavement, to upset the macadam and other inventions of the kind, has been proposed by Mr. Tobart, who intends paying in his way, the streets and boulevards of Paris. This gentleman has proved by figures, that melting iron is only worth 11 francs in Paris, 7 francs in Belgium, and 4½ francs by 100 kilogrammes in England, while the stone costs 25 francs in London, 15 francs in Paris, and 8 and 10 francs in Belgium. This new mode of pavement will be grooved, in order not to become slippery, and it is said that the electricity occasioned by the rolling of the carriages will prevent rust. Here is a new field open to industry.

Dimensions, etc., of the Locomotive Engine "Champlain," on the Hudson River R.R.

This engine has an inside connection—15 inch cylinder, 20 inch stroke, 5½ feet drivers, (4 drivers and truck), and has a boiler of the following dimensions: 42 inches diameter, grate 42 by 38 in., fire box 57 inches deep, 144 1½ inch tubes, 11 feet long, blast pipes at mouths 2½ inches, main and branch steam pipes 4½ inch inside diameter, steam ports 14 inches by 1 inch, throw off valve 4 inches, lap of valve 7-16 inch, lead 5-16 inch; 17 feet 6 inches from centre of hind axle to centre of truck pintal, drivers 6 feet 4 inches centre to centre, main connections 6 feet 8½ inches between centres. 726 square feet tube surface—70 do. do. fire box do. —11½ do. do. grate.

This machine was constructed by the Taunton Locomotive Manufacturing Co.

Railroad Law.

It has been decided in the Circuit Court of Tennessee that to enable a railroad to effect the end contemplated by the charter—"the transportation of persons, goods, etc., over the said railroad"—there must, of necessity, be a way of approach to the road some place, for receiving and delivering, loading and unloading the produce, goods, etc., conveyed, and to be conveyed, and so far, the company is vested with the power, by the provisions of the 24th section of the charter, and as an incident to the grant of the franchise, to condemn land in the manner provided in the 24th section, against the will of the owner.

But for the purpose of depositories, storehouses, houses for agents, workshops, etc., which are not necessarily required to be contiguous to the road, the company have no power to take lands under the provisions of the 24th section, and must rely upon negotiation with the owners thereof.

As to the quantity of land which may be com-

pulsorily taken by the company, for the uses and purposes before indicated, no precise rule can be prescribed. This must be entrusted, in the first instance at least, to the sound discretion of persons of experience, and practical knowledge upon the subject, acting under the sanction of an oath.

For the American Railroad Journal.
Iron Bridges.

Appleton's Mechanics' Magazine for January contains a long article upon the subject of iron bridges, in which it is attempted to be shown, that the cause of the giving way of the RIDER bridge, so called, upon the Erie railroad, last season, was attributable to its faulty plan of construction. This article is noticed by a writer in a subsequent number of the same periodical, in which he states that,

"The lower chords of the iron bridge which gave way on the Erie railroad were found to be unbroken on examination after the fall. Now, if the lower chords of the Rider bridge did not break, though the bridge fell, can your correspondent 'W.' explain from what cause it could have fallen, and whether the effects of heat, to bind the bridge between two abutments, may not have had something to do with its fall? Your correspondent 'W.' says—'Again it has been argued, that the excessive heat of the season crippled the bridge; and this opinion has led to distrust of the material used, viz: iron. Admitting this to have been the fact, altho' unsupported by any evidence whatever, what would the action have been?'"

"The argument which was used, was simply that the abutments upon which this particular bridge rested did not allow sufficient room for the expansion of the iron structure, and this argument is supported by the written report (one season before) of a supervisor of bridges on the Erie railroad, calling attention to this very matter (want of room for the bridge), which is on file in the company's office.

"The Whipple iron bridges on the Newburgh branch of the Erie railroad proved quite defective in point of strength, so much so as to require their being propped up, to secure safety while passing over. Can your correspondent explain this failure of a bridge he has represented as possessing all the requirements of a properly proportioned structure?"

Another material fact may be stated here, that the accident occurred at about one o'clock upon one of the hottest days of the year. The conclusion seems to be irresistible that the cause of the accident was the elongation of the top chords produced by heat, and as this could not expand *longitudinally*, it was thrown out of a right line. The two chords not acting together, it is easily to see that the accident was inevitable, though the plan of the bridge may have been perfect. J. L.

The Principles of Chemistry Illustrated by Simple Experiments.
By J. A. STOCKARDS.

It is with much pleasure we have examined this work, lately translated from the German, and published at Cambridge, Mass., by Mr. John Bartlett. It has been adopted by the University as a text book, and it strikes us as the best adapted for this purpose of any of the modern works on chemistry. Its title simply and modestly describes its character. It is a faithful exposition of the principles of chemistry made clear by the simple manner in which they are successively introduced to the learner, and by the experiments all easily made, and with apparatus of little cost, by which they are illustrated, and by which the nature of each element and compound is impressed upon the attention and memory. At first we missed the elaborate treatises upon light, heat, electricity, galvanism, the atomic theory, etc., which we have been accustomed to regard as necessary introductory chapters to works on this science; the absence of that upon the principles of

combination of atoms we could not account for, until we at last, in the middle of the book, met with this beautiful theory properly explained, in what we could not but regard as its proper place—after the mind of the pupil had become prepared for it by familiarity with its operations.

But the most striking peculiarity of the work is the continual reference of chemical principles to practical operations. The author seems as familiar with the practise of each artisan, as with the profoundest theories of this complicated science, on which their practises, often not understood by themselves, depend. Many a skillful worker in metals would be impressed, in reading this work, with the simple explanations incidentally introduced of his familiar operations of alloying, fluxing and soldering his materials. The brewer and dyer and baker would find their practises, often to them empirical, explained on sound scientific principles, and the agriculturist would gain new ideas in the chapter on alumina of the nature of soils, and their relations to the growing plant.

We would with pleasure quote from some of its pages, and describe more particularly its peculiarities and its fitness as a text book for students, were we not now writing from recollection, being where it is inaccessible to us. Its own merits, however, will soon make it known, and we trust the American publisher will be well repaid for the faithfulness with which it has been rendered into English, accompanied, as it is, with the same cuts and illustrations as in the original, and presented to the public in the best style of paper and print of American works. The early necessity of a third edition, which is already in print, seems indeed a sufficient guaranty for this. H.

Patent Machine Picket Fence

SIX DIFFERENT STYLES of this fence are now made by patent machinery; and is by far the most economical fence for Railroads, Farms, Yards, etc., ever yet offered to the public, costing only from 4 to 30 cents per foot, according to pattern; and is so put up as to be shipped at a trifling expense. Full particulars will be furnished, by addressing the subscriber, to whom all orders should be sent.
N. STRATTON, Troy, N. Y.

Patent Metallic Measuring Tapes.

A New Article, made from Vegetable and Mineral substances combined, entirely free from the objections made to all other tapes, arising from contraction and elongation in consequence of atmospheric changes. Fine wires, of a material not affected by dampness or dryness, are woven into the warp of the Patent Tape, rendering it not subject to variations in length, like all other tapes heretofore manufactured. Instead of being merely painted, it is immersed in a peculiar solution of gums, and the fibres being solidly compacted together, it acquires substance and strength presented by no other article. They are enclosed in patent cases, superior to all others in lightness, strength and durability.

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ENGINEERS.

Atkinson, T. C.,
Alexandria and Orange Railroad, Alexandria, Va.

Clement, Wm. H.,
Little Miami Railroad, Cincinnati, Ohio.

Cozzens, W; H.,
Engineer and Surveyor, St. Louis, Mo.

Alfred W. Craven,
Chief Engineer Croton Aqueduct, New York.

Floyd-Jones, Charles,
Alton and Sangamon Railroad, Alton, Illinois.

Gay, Edward F.,
Columbia and Philadelphia Railroad, Philadelphia Pa.

Gzowski, Mr.,
St. Lawrence & Atlantic Railroad, Montreal, Canada.

Grant, James H.,
Nashville and Chattanooga R. R., Nashville, Tenn.

S. W. Hill,
Mining Engineer and Surveyor, Eagle River, Lake Superior.

Holcomb, F. P.
Southwestern Railroad, Macon, Ga.

Latrobe, B. H.,
Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,
Buffalo and Conhocton Valley Railroad, Bath, N. Y.

Morris, Elwood,
Schuylkill Navigation, Schuylkill Haven, Pa.

Nott, Samuel,
Lawrence and Manchester Railroad, Boston.

Prichard, M. B.,
East Tennessee and Georgia R. R., Cleveland, Tenn.

W. Milnor Roberts,
Bellefontaine and Indiana Railroad, Marion, Ohio.

Roberts, Solomon W.,
Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Sanford, C. O.,
South Side Railroad, Virginia.

Steele, J. Dutton,
Pottstown, Pa.

Trautwine, John C.,
Civil Engineer and Architect, Philadelphia.

Tinkham, A. W.,
United States Fort, Bucksport, Me.

Troost, Lewis,
Alabama and Tennessee Railroad, Selma, Ala.

Whipple, S.,
Civil Engineer and Bridge Bullder, Utica, N. Y.

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BUSINESS CARDS.

Lithography.
JOHN P. HALL & CO.,
161 Main st., Buffalo, (Commercial Advertiser Build.)
Are prepared to execute all kinds of Lithography in good style and at reasonable rates. Particular attention will be paid to Engraving Railroad Maps, Engineer's Plans and drafts, etc., and orders in this line are respectfully solicited.

Boston Locomotive Works,

—Late Hinkley & Drury—
No. 38 Harrison Avenue,
BOSTON.

Locomotive and Stationary Steam Engines; Boilers; Iron, Brass, Copper and Composition Castings; Coppersmith's Work.

VAN KURAN RAILROAD WHEELS:
Wheels and Axles fitted, and all kinds of Railroad Machinery furnished at short notice.

Cumberland, (Md.) Coals for Steaming, etc.

ORDERS RECEIVED FOR AND FILLED
by J. COWLES, 27 Wall St., N. Y.

Cumberland Steam Coal,

FROM THE
FROSTBURG MINES, MD.
H. A. TUCKER,
Agent of Frostburg Coal Co.
No. 50 Wall Street, New York.

Henry I. Ibbotson,

IMPORTER of Sheffield and Birmingham Goods.
Also, Agent for the Manufacture of Telegraph Wire.
218 PEARL ST., NEW YORK.

Charles T. Jackson, M. D.,

STATE ASSAYER, late Geologist to Maine, Rhode Island, New Hampshire, and the United States, offers his services to his friends and the public in making any Chemical, Mineralogical or Geological researches that may be required for the improvement of Agriculture and the Manufacturing Arts. Particular attention will be paid to the exploration of mines and to assaying of ores of the metals.

State Assayer's office, 31 Somerset st.
Boston Sept. 3, 1850.

STEEL AND FILES.

R. S. Stenton,
20 CLIFF STREET, NEW YORK,
AGENT FOR

J. & RILEY CARR,
BAILEY-LANE WORKS, SHEFFIELD,
Manufacturers of Cast, Shear, German, Blister, and
Spring Steel,
Of all descriptions, Warranted Good.

FILES.

Manufacturers of Machinists' Warranted Best Cast Steel Files, expressly for working upon Iron and Steel, made very heavy for recutting.

A full Stock of Steel and Files at all times on hand. 6m4

Walter R. Johnson,

CIVIL AND MINING ENGINEER AND ATTORNEY for Patents. Office and Laboratory, F St., opposite the Patent office, Washington, D. C.

Dudley B. Fuller & Co.,

IRON COMMISSION MERCHANTS,
No. 139 GREENWICH STREET,
NEW YORK.

Manning & Lee,

GENERAL COMMISSION MERCHANTS,
NO. 51 EXCHANGE PLACE,
BALTIMORE.

Agents for Avalon Railroad Iron and Nail Works. Maryland Mining Company's Cumberland Coal 'CED'—'Potomac' and other good brands of Pig Iron.

Samuel Kimber & Co., COMMISSION MERCHANTS

WILLOW ST. WHARVES, PHILADELPHIA.
AGENTS for the sale of Charcoal and Anthracite Pig Iron, Hammered Railroad Car and Locomotive Axles, Force Pumps of the most approved construction for Railroad Water Stations and Hydraulic Rams, etc., etc.
July, 27, 1849.

James Herron, Civil Engineer,

OF THE UNITED STATES NAVY YARD,
PENSACOLA, FLORIDA.,
PATENTEE OF THE

HERRON RAILWAY TRACK.

Models of this Track, on the most improved plan, may be seen at the Engineer's office of the New York and Erie Railroad.

PLUSHES

FOR

Railway Cars & Omnibuses.

F. S. & S. A. MARTINE,
112 WILLIAM ST., NEAR JOHN.

ARE now receiving a large and complete assortment of Plain and Figured PLUSHES, of their own importation, which will be sold at the lowest market price, viz: Crimson, Maroon, Scarlet, Green, Blue, Purple, etc.
ALSO—CURLED HAIR, the best manufactured in market.

To Railroad Companies, Machinists, Car Manufacturers, etc., etc.

CHARLES T. GILBERT,
NO. 80 BROAD ST., NEW YORK.

IS prepared to contract for furnishing at manufacturer's prices—
Railroad iron,
Locomotive Engines,
Passenger and Freight Cars,
Car Wheels and Axles,
Chairs and Spikes.

Orders are invited; and all inquiries in relation to any of the above articles will receive immediate attention

Manufacture of Patent Wire ROPE AND CABLES,

For Inclined Planes, Suspension Bridges, Standing Rigging, Mines, Cranes, Derrick, Tilters, &c., by
JOHN A. ROEBLING, Civil Engineer,
TRENTON, N. J.

FORGING.**Ranstead, Dearborn & Co.,**

MANUFACTURERS OF
LOCOMOTIVE CRANKS AND CAR AXLES,
ALSO

WROUGHT IRON SHAFTING,

And All Kinds of Hammered Shapes.
Office 25 Foster's Wharf, Boston.

Samuel D. Willmott,

MERCHANT, AND MANUFACTURER OF
CAST STEEL WARRANTED SAWS,
—AND FILES—

IMPORTER OF THE
GENUINE WICKESLY GRINDSTONES
NO. 8 LIBERTY STREET,
NEW YORK.

Railroad Instruments.

THEODOLITES, TRANSIT COMPASSES, and Levels, with Fraunhofer's Munich Glasses, Surveyor's Compasses, Chains, Drawing Instruments, Barometers, etc., all of the best quality and workmanship, for sale at unusually low prices, by
E. & G. W. BLUNT,

No. 179 Water St., cor. Burling Slip.
New York, May 19, 1849.

IRON.**Iron.**

Pig Iron, Anthracite and Charcoal; Boiler and Flue Iron, Spring and Blistered Steel, Nail Rods, Best Refined Bar Iron, Railroad Iron, Car Axles, Nails, Stove Castings, Cast Iron Pipes of all sizes, Railway Chairs of approved patterns for sale by
COLEMAN, KELTON & CAMPBELL,
109 N. Water St., Philadelphia.

Stickney & Beatty, DEALERS IN IRON AND IRON MANUFACTURERS.

AGENTS for the Balt. City Rolling Mill, from which establishment they are prepared to furnish Ellicott's round, square, and flat bar iron, puddled and charcoal boiler plates and billet iron—also agents for the sale of the Laurel, Gunpowder, and Locust Grove (Balt.) forge pig irons, Locust Grove and Laurel Irons for car wheels, Caledonian boiler blooms made from cold blast iron, Old Colony and anti-Eatam nails, Wm. Jessop & Son's steel, Coleman's blister steel and nail rods, sheet, hoop, band, oval and common English iron.

Nos. 18 and 20 South Charles st., Baltimore.

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. J. F. WINSLOW, President

Troy, N. Y.

ERASTUS CORNING, Albany

WARREN DELANO, Jr., N. Y.

JOHN M. FORBES, Boston.

ENOCH PRATT, Baltimore, Md

November 6, 1848.

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phoenix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehanna river; which two establishments are now turning out upwards of 1800 tons of finished rails per month.

Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.

REEVES, BUCK & CO.

45 North Water St. Philadelphia.

March 15, 1840

LAP—WELDED WROUGHT IRON TUBES

FOR

TUBULAR BOILERS,

FROM ONE AND A QUARTER TO SEVEN INCHES IN DIAMETER.

THE ONLY Tubes of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER & SON, Patentees,
23 Platt street, New York.

Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron.

THOMAS B. SANDS & CO.,

73 New street,
New York.

February 3, 1849.

Iron Store.

THE Subscribers, having the selling agency of the following named Rolling Mills, viz: Norristown, Rough and Ready, Kensington, Triadelphia, Pottsgrove and Thorndale, can supply Railroad Companies, Merchants and others, at the wholesale mill prices for bars of all sizes, sheets cut to order as large as 58 in. diameter; Railroad Iron, domestic and foreign; Locomotive tire welded to given size; Chairs and Spikes; Iron for shafting, locomotive and general machinery purposes; Cast, Shear, Blister and Spring Steel; Boiler rivets; Copper; Pig Iron, etc., etc.

MORRIS, JONES & CO.,

Iron Merchants,

Schuylkill 7th and Market Sts., Philadelphia.

August 16, 1849. 1y33

Glendon Refined Iron.

Round Iron, Band Iron, Hoop Iron,
Square " Flat " Scroll "

Axles, Locomotive Tyres,

Manufactured at the Glendon Mills, East Boston, for sale by

GEORGE GARDNER & CO.,

5 Liberty Square, Boston, Mass.

Sept. 15, 1849. 3m37

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for rail roads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.

JOHN F. WINSLOW, Agent.

Albany Iron and Nail Works, Troy, N. Y.

The above Spikes may be had at factory prices, of Erastus Corning & Co Albany; Menitt & Co., New York; E. Pratt & Brother, Baltimore, Md.

Bowling Iron. Stamped B.O.

Railway Tire Bars Rivet Iron
Locomotive and other Axles Locomotive Frame do
Boiler Plates Bars,
and every other description of this superior Iron.
The subscribers, agents for the sale of Bowling Iron, are prepared to execute orders for importation, especially for railway and machinery uses, with despatch from the manufacturers.

RAYMOND & FULLERTON, 45 Cliff st.

**Ibbotson, Brothers & Co's
CELEBRATED CAST STEEL**

AND
Best Cast Steel Royal Improved Files, well known as better adapted for Engineers' and Machinists' purposes than any now in use in the United States.
Every description of Square, Octagon, Flat and Round Cast Steel, Sheet, Shovel and Railway Spring Steel, etc., and Steel to order for any purposes—manufactured at their works in Sheffield—and universally known by the old stamp "Globe."

HENRY I. IBBOTSON, Agent,
218 Pearl st., New York.

**Railroad Iron.
SPIKES.**

Wrought Iron CHAIRS, New Pattern.
THE Undersigned continues to contract, as usual, for the above articles. The reputation already acquired for their excellent quality is a guarantee that strict attention shall continue to be paid to the wants and interests of purchasers.

CHARLES ILLIUS,
20 Beaver St., New York

**WILLIAM JESSOP & SONS'
CELEBRATED CAST-STEEL.**

The subscribers have on hand, and are constantly receiving from their manufactory,

PARK WORKS, SHEFFIELD.

Double Refined Cast Steel—square, flat and octagon.
Best warranted Cast Steel—square, flat and octagon.
Best double and single Shear Steel—warranted.
Machinery Steel—round.
Best and 2d gy. Sheet Steel—for saws and other purposes.

German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.

Genuine "Sykes," L Blister Steel.

Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by
WM. JESSOP & SONS,
91 John street, New York.

Also by their Agents—

Curtis & Hand, 47 Commerce street, Philadelphia.

Alex'r Fullerton & Co., 119 Milk street, Boston.

Stickney & Beatty, South Charles street, Baltimore.

May 6, 1848.

Railroad Iron.

B. O. Railway Tires, Railway Wheels,
Scotch Pig Iron, Tin Plates and Banca Tin,
Muntz's Patent Metal Sheathing,
Baltimore Copper.

Contracts for Rails made on behalf of the manufacturers, for delivery at any ports in the United States, at fixed prices.

Bowling Tires and Tire Bars and Scotch Pigs imported to order.

Muntz's Ship-sheathing, and a general stock of Tin Plates and Banca Tin in store, and for sale by
RAYMOND & FULLERTON, 45 Cliff st.

IRONDALE PIG METAL, MANUFACTURED
and for sale by the Bloomsburg Railroad Iron Co.
LINDLEY FISHER, Treasurer.
75 N. Water St., Philadelphia.

**Fagotted Car and Engine
Axles**

FORGED by RANSTEAD, DEARBORN & Co.,
Boston, Mass.
These Axles enjoy the highest reputation for excellence, and are all warranted.

Railroad Iron.

3,000 TONS C. L. MAKE 6½ lbs. per yard, now landing and to arrive.

Also contracts made for future delivery of above superior make English Iron.

300 Tons Banks Best Iron, Round, Square and Flat.
200 " English Bar " " "

10 " 9-16 Square Iron for Railroad Spikes.
For sale in lots to suit purchasers by

DAVID W. WETMORE.
New York, March 26, 1850. 3m

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.
RAYMOND & FULLERTON, 45 Cliff st.

**JOHNSON, CAMMELL & Co's
Celebrated Cast Steel,**

AND
ENGINEERING AND MACHINE FILES, which for quality and adaptation to mechanical uses, have been proved superior to any in the United States. Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cyclops Steel Works Sheffield.

JOHNSON, CAMMELL & CO.,
100 William St., New York.

November 23 1849.

Bowling Tire Bars.

40 Best Flange Bars 5½x2 inches, 11 feet long.
40 " 5½x2 " 7 feet 8 in. long.
40 " Flat " 6x2 " 11 feet long.
40 " " 6x2 " 7 feet 8 in. long.

Now in store and for sale by

RAYMOND & FULLERTON,
45 Cliff street.

**Wheel, Forge and Foundry
Iron.**

LOCUST GROVE Wheel Iron of great strength and superior chilling property.

Balt. Charcoal Forge Iron, from Patuxent, Curtis Creek and Gunpowder furnaces.

Elkridge Foundry Iron, of superior strength and softness. Anthracite and Charcoal Iron from Pennsylvania and Virginia. Gas and Water Pipes, Lamp Posts from Elkridge furnace.

LEMMON & GLENN,
62 Buchanan's Wharf, Baltimore.

**S. S. Keyser & Co.,
IRON WAREHOUSE,**

Corner of South and Pratt Streets,
BALTIMORE, MD.

Selling Agents for the Rough and Ready Bar Iron and Elk Boiler and Flue Iron Rolling Mills, Sarah and Taylor Furnaces, and Wrightsville Hollow Ware Foundry, and Dealers in Bar and Sheet Iron, and Cast, Sheer, German, Blister, Spring and Electroplated Steel, etc., etc.

Smith & Tyson,

GENERAL COMMISSION MERCHANTS,

No. 25 South Charles St., Baltimore, Md.

AGENTS for the Celebrated Columbia Pig Iron, suitable for Car Wheels and Chilled Rolls.

Columbia refined Charcoal Blooms; Refined Charcoal Juniata Billet Iron for Wire; Refined Iron for Bridging, of great strength; Cut Nails, Spikes, and Brads; Railroad Spikes and Wrought Casts. 22tf

Tredegar Iron Works.

ROLLING MILL FOUNDRY AND MACHINE

SHOPS. The undersigned continues to manufacture at his Works in this city (from best charcoal metal) Bar Iron of every description, embracing—Rounds and Squares, from ½ to 5 inches diameter. Flats, from ½ to 7 inches, all thicknesses.

Bands and Scrolls, all sizes. Boiler plate and Plough Iron. Railroad and Locomotive Axles and Tires. Locomotive Frames, Spikes and Plates. Hoops, Ovals, Half Ovals, Half Rounds, Angle, T, L, and indeed every description of Iron usually manufactured, all of which he warrants to be equal to any made in this country. He also manufactures at his Foundry and Machine Shops all descriptions of Railroad Work, say, Locomotives, Railroad Wheels and Axles complete and ready for the road, Railroad Chairs, etc. Also, Marine and Stationary Engines all sizes, Sugar mills and Engines, Horse mills, and every kind of Machinery usually required for the operations of the country. He has paid particular attention to getting up machinery, etc., for Gold Mine operations, and those in want of such work might find it to their advantage to give him a call.

J. R. ANDERSON.
Richmond, Va., Sept. 10, 1850.

CUT NAILS OF BEST QUALITY, BAR IRON

(including Flat Rails) manufactured and for sale by

FISHER, MORGAN & CO.,
75 N. Water St., Philadelphia.

Car Wheel Iron.

100 Tons "Columbia" No. 2 Cold Blast Charcoal Iron.
300 Tons "Salsbury" No. 1, do. do.
For sale by CHARLES T. GILBERT,
No. 80 Broad st.
New York, Sept. 21, 1850.

Railroad Spikes.

THE subscribers are prepared to make and execute contracts for Railroad Spikes of a superior quality, manufactured by the New Jersey Iron Company, at Boonton. DUDLEY B. FULLER & CO.
139 Greenwich st. corner of Cedar.

Railroad Iron.

1650 Tons, weighing about 61 lbs. per yard, 40 tons, weighing about 52 lbs. per yard, and 825 tons, weighing about 53½ lbs. per yard, of the latest and most approved patterns of T rails, for sale by
BOORMAN, JOHNSTON & CO.,
119 Greenwich street.

New York, Aug. 26, 1850.

N.B.—B. J. & Co are also prepared to take contracts for English rails, delivered in any of the Atlantic ports of the United States.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract to deliver Rails of superior quality, and of any size or pattern, to any ports of discharge in the United States.

COLLINS, VOSE & CO.,
74 South St.

New York, June 1, 1850.

Spikes, Spikes, Spikes.

ANY person wishing a simple and effective Spikes, or a number of them, may be supplied by addressing
J. W. FLACK,
Prov. N. Y.
March 6, 1850.

Railroad Iron.

2000 Tons, weighing 58 pounds per lineal yard, of the most approved pattern of T rails, in store and to arrive, for sale by
COLLINS, VOSE & CO.,
74 South St.

New York, June 1, 1850.

Railroad Spikes, Boiler Rivets, etc.

THE Subscribers, Agents for the sale of James S. Spencer's, Jr., Railroad and Boat Spikes, Boiler Rivets, and Wrought Iron Chairs for Railroads, made at his Works near this city, will execute all orders with promptness, despatch, and of the best quality.

ALSO IMPORTERS of English refined and Merchant bar Iron; Extra refined Car and Locomotive Axles (from 3½ to 6½ inches in diameter); B. O. Locomotive Tire (welded by Baldwin). Also, supply Boiler and Flue Iron cut to pattern or otherwise.—Spring, Shear, and Cast Steel, etc., etc., etc.

T. & E. GEORGE.
Philadelphia, November 14, 1850.

Railroad Iron.

THE UNDERSIGNED, HAVING made arrangements abroad, are prepared to contract for the delivery of Foreign rails, of approved brands upon the most favorable terms.

They will also make contracts for American rails, made at their Trenton works, from Andover Iron, in whole or in part, as may be agreed upon.

They are prepared to furnish Telegraph, Spring and Market Wire; Braziers and Wire Rods; Rivets and Merchant Bars to order, all made exclusively from Andover Iron. The attention of parties who require iron of the very best quality for special purposes, is respectfully invited.

COOPER & HEWITT,
17 Burling Slip, New York.
February 15, 1850.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract for the delivery of English, Welsh and Scotch Rails, of any pattern and weight, also for every description of English, Welsh, Scotch, and Swedish Iron, Railway Chairs and Spikes, Rivets, Bolts, Nuts, Washers, Chain Cables, Anchors, Tin Plates, German Spelter, Iron Castings, and every description of Machinery.

WILLIAM BIRD & CO.,
Iron and Tin Plate Merchants,
44 Wall st., New York.

And at 5 Martin's Lane, City, London,
and 140 Buchanan st. Glasgow.

July 27th, 1850.

Railway Iron.

THE Subscribers will contract to deliver, in the course of the ensuing Spring and Summer, the best English Rails, made by a particular specification, and of any pattern required.

DAVIS, BROOKS & CO.,
68 Broad st.

On hand for sale, English rails of 58 lbs. to the yard, made by particular specifications.
January 10, 1851. 2m

To Iron Masters.

WANTED—A Person to take charge of a Blast Furnace for Smelting Iron, for further information apply to
COLLINS, VOSE & CO.,
74 South street.

Railroad Iron for Sale.

THE Mansfield and Sandusky City Railroad Co. have on hand from twelve to fifteen hundred tons of American Flat Bar Railroad Iron, weighing 38 lbs. to the lineal yard, which they offer for sale at reasonable rates.

The iron has been in use about four years, and is sound and in good condition. It is 2½ by ½.

It will be ready for delivery at short intervals between the opening of navigation in the spring and the 1st September next.

For further particulars inquire at the office of the company at Sandusky City, Ohio.

C. G. FORBES, President.

December 24, 1850.

Railroad Iron.

THE "Montour Iron Company" is prepared to execute orders for Rails of the usual patterns and weights, and of any required length not exceeding 30 feet per rail. Apply at the office of the Company,
No. 73 South 4th st., Philadelphia.

Or to the Agents,

CHOUTEAU, MERLE & SANFORD,
N.O. 51 New st., New York.

September, 1850.

American Railroad Iron.

1000 Tons, weighing 50 lbs. per yard, manufactured by Reeves, Abbott & Co., at the Safe Harbor Iron Works, and now lying in yard at Brooklyn, for sale by

CHOUTEAU, MERLE & SANFORD,
No. 51 New street.

Tubes, Tubes, Tubes.

THE undersigned have received special permission from, and are in direct communication with, the Birmingham Patent Lap Welded Iron Tube Company, for the sale of their very excellent and superior Boiler and Gas Tubes in large or small quantities. These Tubes are sold very extensively in England and on the continent of Europe are sold exclusively by

WM. BIRD & CO.,

Iron and Tinplate Merchants,

44 Wall st., New York

5 Martin's Lane, City, London,

and 140 Buchanan st., Glasgow.

Wanted.

WANTED—A Situation in a Civil Engineer's office, by a Young Gentleman from Scotland—has had six years' experience as a practical Draughtsman, Architect, Surveyor, and Leveller in one of the principal civil engineering establishments in Scotland. First rate reference given. Apply to Messrs. Cooper & Hewitt, 17 Burling Slip, or to

JAS. SNEDDON,
23 Harrison st.

Wanted.

A Second-hand Locomotive of 10 to 15 tons weight. A note, giving lowest terms, addressed to A. B., Railroad Journal Office, will receive attention.
January 9, 1850.

India-rubber for Railroad Cos.

RUBBER SPRINGS—Bearing and Buffer—Fuller's Patent—Hose from 1 to 12" diameter. Suction Hose. Steam Packing from 1-16 to 2 in thick. Rubber and Gutta Percha Bands. These articles are all warranted to give satisfaction, made under Tyer & Helm's patent, issued January, 1849. No lead used in the composition. Will stand much higher heat than that called "Goodyear's," and is in all respects better than any in use. Proprietors of rail roads do not be overcharged by pretenders.

HORACE H. DAY,

Warehouse 23 Courtlandt street

New York, May 21, 1849.

Great Work on Bridge Building, etc., etc.

JUST published in medium folio, One Dollar, 75 cts. to subscribers.

PART IV of a "THEORETICAL AND PRACTICAL TREATISE ON THE CONSTRUCTION OF BRIDGES IN STONE, IRON AND WOOD," including the Equilibrium of Arches, the mathematical principles of the Oblique Arch, Suspension Arch, etc., Construction of Foundations in Water, Centering, Oblique Arches, etc., the application of Iron to Railroad Structures, Practical Tunnelling, Suspension Bridges, etc.; illustrated by numerous accurately executed Plans, Elevations, Sections and Details of Stone, Iron and Wood Bridges, Viaducts, Tunnels, Culverts, Machines, etc., constructed by the most eminent Architects and Engineers in Europe and the United States, and numerous Original Designs for Bridges, Viaducts, Culverts, etc. The whole calculated to meet the exigencies of Engineers, and assist Draughtsmen, Bridge Builders, Mechanics and Students. By George Duggan, Architect and Civil Engineer.

The present part contains beautifully executed plans, elevations, sections, and details of the Iron Lattice Bridge 140 feet span over the canal in the suburbs of Dublin on the line of the Dublin and Drogheda R.R., Plans, elevations and sections of the Timber Bridge over the Schuylkill, at Market st., Philadelphia, with Arches 160 and 190 feet span. Plans, elevations and sections of a Timber Bridge with Arches 155 and 200 feet span over the Delaware. Also, plans, elevations, sections and details of Lattice and Frame Wood Bridges, explanatory of Nathaniel Towns and Colonel S. H. Long's methods of constructing Bridges of Wood, with the continuation of the Articles on Cofferdams, Concrete, Limes, Mortars, Cements, etc.

Published by George Duggan, 300 Broadway, New York, to whom all communications should be addressed and subscriptions forwarded.

Parties remitting Mr. Duggan \$5. and the remainder \$4 when they have been supplied with the first six parts of the "Theoretical and Practical Treatise on Bridge Building, etc." shall receive it monthly as published. To those making Mr. Duggan a present remittance of \$9, the work will be forwarded post free to any part of the United States.

Great American Engineering

AND MECHANICAL WORK, just published in a medium folio One Dollar, 75 cts. to Subscribers.

PART X. of "Specimens of the Stone, Iron & Wood Bridges Viaducts, Tunnels, Culverts, &c., &c., of the United States Railroads." By George Duggan, Architect and Civil Engineer.

The present part contains beautifully executed plans, elevations, and sections of the Timber Bridge with Arches 136 feet span, over the Mohawk river, on the line of the Utica and Schenectady R.R. Plans elevations, sections and isometrical views of Timber Piers 100 feet high, a Timber Bridge of 55 feet span, and Ice Breakers, on the line of the Little Schuylkill and Susquehanna R.R.

Also plans, elevations, sections, isometrical views and details of an Iron Bridge 356 feet long, with Arches 81 feet span, erected by the N. York Iron Bridge Co. over Moores Creek, on the line of the Virginia Central R.R., and plans, elevations and sections of an Iron Plank Road Bridge 160 feet span, erected over Buffalo creek by the same company, with a description of Col. Long's method of constructing Bridges in Iron, and an explanation of the causes that led to the failure of the Iron Bridge 60 feet span, near Lackawaxen, on the line of the New York and Erie R. R., at midday, on the 31st July last, by which several lives were lost, and a great amount of property destroyed.

Published by GEORGE DUGGAN,
300 Broadway, New York.

To whom all communications should be addressed and subscriptions forwarded.

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.

August, 16, 1849. 6m33

For Sale.

TWO Locomotive Engines—10½ tons weight, built by Baldwin. Also Four Eight-wheeled Passenger Cars, with side seats, all in good running order. Apply to WM. E. MORRIS,
Office of Philad., Germantown & Norristown Railroad Co., 9th and Green sts., Philadelphia. 3m5

TO RAILROAD COMPANIES, CAR MANUFACTURERS, etc.

THE Undersigned hereby gives public notice, that the Commissioner of Patents, pursuant to his decision in relation thereto, on the 8th day of October, 1850, issued to him a Patent for the sole right to manufacture, and exclusive use of the INDIA RUBBER CAR SPRING, on account of priority of invention of said Spring.

F. M. RAY.

New York, Oct. 23, 1850.

Iron Trade of Pennsylvania.

DOCUMENTS and Statistics relating to the Manufacture of Iron in the State of Pennsylvania—giving a history of the manufacture from its commencement to this date, illustrated by diagrams. Also tables giving the address and capacity of every establishment in the State. Prepared by direction of the late convention of the trade held in Philadelphia.

For sale by

LINDSAY & BLACKISTON, Philadelphia.

FIELDING LUCUS, Jr., Baltimore.

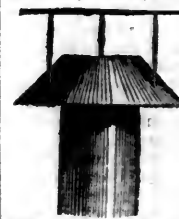
HENRY G. NICHOLS, 79 Water st., N. Y.

or at this office—price \$1 00.

It will be sent by mail to any order enclosing the money, and post paid.

Emerson's Patent Ventilator,

ADAPTED to Cars, Engine houses, Public Halls, Factories, Churches, School Houses, Dwellings, Chimney Flues, etc.



This Ventilator is stationary, and cannot get out of order. It is constructed in such conformity to certain ascertained laws of pneumatics, as to insure a constant draft outward, whatever may be the changing direction of the wind. The Massachusetts Mechanic Association have awarded a gold medal to the Inventor, and the Manufacturers have already disposed of over

3,000 of the article. Manufactured and sold by
CHILSON, ALLEN, WALKER & Co.,
351 Broadway, New York.

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MANUFACTURERS OF

Plane Irons, Tooth Irons, Soft Moulding and Rabbit Irons, Cornice Irons, Plow Bits, and Planing Machine Knives:

NUTS, WASHERS AND BOLTS.

—ALSO—

PLATE HINGES AND PICK AXES.

They are prepared to execute orders for all descriptions of Cold Punching and Job Work.

WM. FIELD, Agent. RUFUS WATERMAN, Treas.

PROVIDENCE, R. I.

Lovegrove's Patent Cast Iron Water and Gas Pipes.

THE Subscriber, the Inventor and Patentee of the Centrifugal mode of giving form to metallic substances while in a molten state, is preparing to make Cast Iron Water and Gas Pipes, of any dimensions, at prices much lower than they can be made in the old manner, and the pipes warranted to stand a pressure of three hundred pounds to the square inch, and to be soft enough to drill. Steam Engines and all kinds of machinery. Cast Iron Doors and Frames, and Mill Castings of every description, made to order.

THOMAS J. LOVEGROVE,

Machinist and Founder,

West Falls Avenue, below Pratt st., Baltimore.

Railroad Letting, in Virginia.

PROPOSALS will be received at the office of the chief engineer of the Richmond and Danville railroad, until 9 o'clock A. M., Monday, the 10th of March, to be decided the 13th of the same month, for doing all the grubbing, clearing, grading, ditching and masonry, on the Richmond and Danville railroad, in the counties of Amelia, Nottingham, Prince Edward, Lunenburg and Charlotte, comprehending about 45 miles of road.

Profiles and specifications can now be seen at the office of the company in Richmond; and after the 10th of February, at the offices of the resident engineers, on the line, at Burkeville and Keysville.

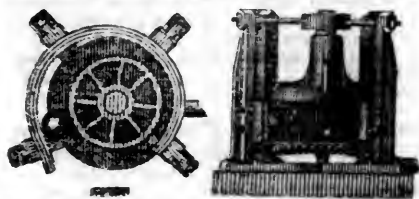
By order of the board of directors,

ANDREW TALCOTT,

Chief Engineer R. & D. railroad.

Engineering department R. & D. }

R. R. Co., Richmond, Jan. 22, 1851. }

MACHINERY.**Henry Burden's Patent Revolving Shingling Machine.**

THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phoenixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll sounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y.

P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery for making Spikes, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

CHILLED RAILROAD WHEELS.—THE UNDERSIGNED are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

Brown's Old Established SCALE WARE HOUSE,
NO. 234 WATER ST., NEW YORK.

THE Subscriber, Practical Manufacturer of Scales of every description, respectfully asks the attention of Railroad Companies to his Improved Wrought Iron Railroad Truck and Depot Scales which for strength, durability, accuracy, convenience in weighing, and beauty of workmanship, are not surpassed by any others in this country.

He is aware that this is rather a bold assertion for him to make, yet he can say with confidence that they have but to be tried to give them precedence over all others.

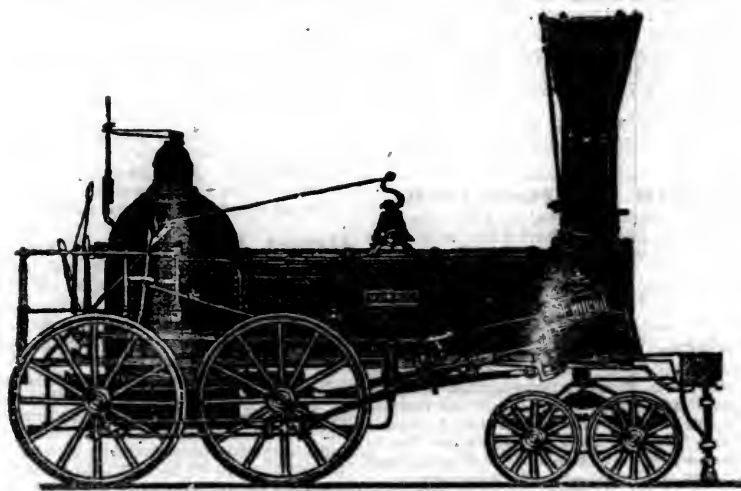
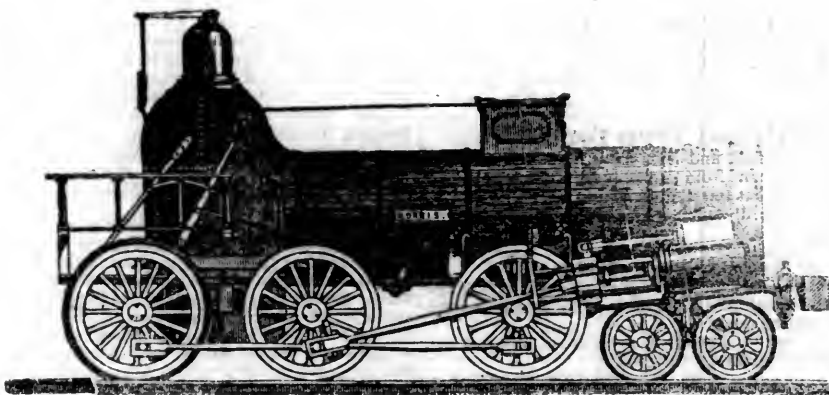
J. L. BROWN.

Bank Scales made to order, and all Scales of his make Warranted in every particular.

References given if required.

NORRIS' LOCOMOTIVE WORKS.

BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,



THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size.

Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tyres are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS

PATENT MACHINE MADE HORSE-SHOES.

The Troy Iron and Nail Factory have always on hand a general assortment of Horse Shoes, made from Refined American Iron.

Four sizes being made, it will be well for those ordering to remember that the size of the shoe increases as the numbers—No. 1 being the smallest.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

Etna Safety Fuse.

THIS superior article for igniting the charge in wet or dry blasting, made with DUPONT'S best powder, is kept for sale at the office and depot of

REYNOLDS & BROTHER,

SOLE Manufacturers,

No. 85 Liberty St.

NEW YORK.

And in the principal cities and towns in the U. States.

The Premium of the AMERICAN INSTITUTE was awarded to the Etna Safety Fuse at the late Fair held in this city.

November 3, 1849,

ly

COLUMBUS, OHIO,**Railroad Car Manufactory.**
RIDGWAYS & KIMBALL,

HAVE established at this central point, the manufacture of Passenger, Freight, Gravel and Hand Cars for Railroads, and assure all Western Railroad Companies that it will be their constant aim to procure the best materials and workmen, and to turn out the best kind of work at fair prices. Specimens may be seen on the Columbus and Xenia Railroad. The patronage of Railroad Companies is respectfully solicited.

ly8

FOR SALE.

THREE LOCOMOTIVES, Manufactured by M. W. Baldwin, of 10 tons weight, all in complete repair, and now running on the Columbia and Philadelphia Railroad.

For particulars apply to A. L. Roumfort, Supt. of said road, either at Philadelphia, or Parkersburg, Chester county.

A. L. ROUMFORT,
Supt. Motive Power Col. & Philad. R.R.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 136 NASSAU ST., NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.

SECOND QUARTO SERIES, VOL. VII., No. 10!

SATURDAY, MARCH 8, 1851.

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ASSISTANT EDITORS,
J. T. HODGE, *For Mining and Metallurgy.*
GEN. CHAS. T. JAMES, *For Manufactures and the
Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & Co., 136 NASSAU ST.

Saturday, March 8, 1851.

Remarks upon the Defects of Railway Tracks and their Remedy.

BY BENJ. H. LATROBE, CHIEF ENGINEER OF THE
BALTIMORE AND OHIO RAILROAD.

Continued from page 131.

I will now present an estimate of the cost of the iron track I propose, and will compare it with those of the several tracks treated of by Mr. Dockray, and which he says he considers "the best of their kinds." I will take, in this estimate, the scale of prices employed by Mr. D., although they are higher than those at present prevailing.

*Estimate of cost of constructing 15 feet in length, of
single line, laid with "Three Part Rail"—exclu-
sive of labor in laying down the track.*

6 pieces, making 2 rails, 130 lbs. per yd. 1,300 lbs. at £10 per ton.....	£5 16 1
2 pieces cross ties, 75 lbs. each. 150 lbs. at £10 per ton.....	0 13 4
18 rivets, $\frac{1}{2}$ inch diameter, $\frac{1}{2}$ lb. each, 9 lbs. at 4d. per lb.....	0 3 0

16 rivets $\frac{1}{2}$ inch diameter 1-6 lb. each,
2 $\frac{1}{2}$ lbs. at 4d. per lb..... 0 0 11
Punching rivet holes, cutting stop should-
ers and notches, and straightening
and fitting rails for laying, at 1s. per
yard..... 0 5 0

42 parts, and estimate cost of 5 yards... £6 18 4

Estimated cost of 1 yard..... £1 7 8

14,784 pts. & estimated cost of 1 mile £2434 13 4

Or about \$11,900 per mile—(U. S. currency.)

If we compare this estimate with those of the six different plans presented by Mr. Dockray, we will see that it is but about £70 per mile more costly than the Great Western, of which it has but about half the number of parts. That it is £126 per mile cheaper than the improved plan of Mr. D., and has but few more parts—and finally that it is but £167 per mile more than the average cost of the 6 tracks including those the least improved. It the cost of laying down the road was included in all the estimates, I apprehend that my plan would compare more advantageously, as it would certainly be more easily laid, the riveting being a rapid and cheap operation and the bedding of the rails and cross ties on the ballast being much more readily done than that of the cross sleepers and longitudinal, including the dressing and adjusting of them.

I have estimated the cost of punching rivet holes, &c., from the result of actual experience in those operations in the 3 part rail I have laid, allowing in full for the superior size, and weight of the present rail. I have also supposed each of the parts of the rail to be but 15 feet long, and two cross ties to each 15 feet length—whereas in practice I would make the rails 20 feet long, and thus save one-fourth of the joints and cross ties, and a proportion of the rivets also, as well as in the number of parts per mile sufficiently to reduce the latter to the same with that of the simplest form of track, (Sir John Macneill's method,) viz. 36 parts per 5 yards, or 12,672 parts in a mile of single line.

But lest it should be doubted whether the extent of bearing surface of my track would be sufficient, and whether timber could be altogether dispensed with, I will suppose, that instead of the cross tie of iron, every 7 $\frac{1}{2}$ or 10 feet, there is a cross sleeper of wood every 5 feet, or 3 for every 5 yards—these sleepers being 9 feet long an 6 \times 10 inches—containing 3 $\frac{3}{4}$ cubic feet—costing 5s. 6d. each—and amounting to 16s. 6d. The item then would stand in place of the 13s. 4d. of the iron ties—the spikes, which would be used in lieu of the cross tie rivets, about balancing the rivets, and the cost of punching the holes for them. Thus, by the substitution of wooden for iron cross ties, the cost of the track per 5 yards would be increased 3s. 2d., or per mile £55 15s. and the bearing surface would be increased from 1.5 to 2.83 square feet per lineal foot of track. The advantage of the rivets accom-

panying the iron cross tie would be foregone; but this might, perhaps, be considered as compensated by the additional bearing surface. On the other hand, a perishable material would be introduced into the structure, and the excellent characteristic of a track entirely of iron would be given up.

It is manifest that the bearing may be increased at pleasure by multiplying the cross ties, but in a track so strong and stiff there could be no motive I think, for this increased expense of construction, except where extraordinary bearing was demanded by very soft sub-soil. I think, also, that the iron cross tie yields a support and connection to the joints of the bearing rails which is highly valuable, and I shall be averse to giving it up—and if more bearing surface were regarded as indispensable, I would obtain it by inserting wooden cross sleepers at points intermediate to the iron ties. The cant of the rail with the iron tie is made by curving the tie up at the ends sufficiently for the purpose.

I have no means of comparing the cost of maintaining a "permanent way"—upon my plan with that of any of the various existing modes of construction in England. I am very confident, however, that the difference in favor of the former would be very great indeed. From observations thus far upon the track laid with the 50 lb. rail, of which mention has been made, I am satisfied that not less than a third of the labor of adjustment will be saved, and the renewal of materials should be in at least as favorable a proportion. An inspection of the rail will show the facility with which any one of the 3 parts composing it may be removed and replaced—all that is required for this purpose being the cutting off the rivet heads with a chisel. But this will be an operation rarely required, and the cheapness of the rivets makes the cost of material a matter of little consequence. If I am right in my suppositions, then the superior safety and smoothness of the new track, attended by a considerable reduction in the cost of repairs to engines and carriages, and a great increase of public security and comfort and consequently an accession to the popularity of railways as a means of travel, would all combine to place the value of the improvement in a very conspicuous position.

It will be perceived that in my estimate of the costs of the rails of the new track, I assume the same rate as for a solid bar. This might be objected to, as new patterns are always made an excuse by the manufacturers for asking higher prices, and might lead, in the beginning, to some slight difference of cost, but I have the authority of the manufacturers who made the 50 lb. rail for me, for saying, that the cost of manufacture will be no greater than that of the bridge or T rail.

The bearing rails (weighing about 50 lbs. per yard each,) will be very readily manufactured. They are in fact nothing more than "angle iron." The cap rail (of 30 lbs. per yard) contains a feature in it which would appear to make it difficult

to roll, but I think this can be managed very readily; and if not, why the feature is not at all indispensable, and, indeed, but slightly, if at all, important to the plan. I refer to the slight pitch outwards and downwards of the under sides of the cap where it rests on the bearing rails on each side of the central rib. It is evident that the rail could be rolled with these slopes in it, only by nearly completing it without them in the first place, and making them in passing it through the final groove of the rolls, leaving enough metal on the sides of the cap to press down into and fill up the triangles between the slopes and the horizontal line above them. The quantity of metal requisite for this is so small that I think it can be done easily, or it might, perhaps, be as well or better done in one or two other ways I need not describe. But if it cannot be done at all, it matters but little. The only advantage of the pitch is, that it relieves the rivets a little—but the rivets will hold perfectly well without this relief, as is known now from the experience of the 50lb. rail, in which not a single rivet has broken under a very heavy traffic, for 5 months past, although the rivets are but $\frac{1}{2}$ inch diameter, and the rail so light, while the ballast not being well packed in the first place, and the sub-soil soft, there has been a good deal of irregular settlement and consequent strain on the parts. In the cap of the rail I have put into the neck of the rib, on each side, what I call a "stop." This is to keep the cap rail from moving endwise—the stop fitting into a notch cut in the lips of the bearing rails. I propose that this stop shall be made in the process of rolling, and it can be effected by cutting a notch in the tongue of the rolls into which the metal will press up, by a reverse action to that of the nipple which makes a countersink in a rolled bar. The stop as it comes from the rolls would not be square at its ends, for the notch in the tongue would have to be wider at top than at bottom to let the metal press in and pass out easily. The shoulders of the stop must then be cut square afterwards, with a chisel, and so will be cut the notches in the lips of the bearing rails. The stops may be as close as desired—they cannot be farther apart than the circumference of the rolls, say 4 or 5 feet and this, I think, would be about the right distance for them. But if they could not be conveniently made in the rolling, they could be put in afterwards by punching a square hole through the neck of the rib and putting in a plug of iron, hot, like a rivet, having metal enough to make the stops on each side of the rib, and dressing it into shape with the chisel. Or instead of the stops, the key plates already mentioned, as being used with the 50 lb. rail now laid, may be employed. They will hold the caps very well, but the stops would be preferred, and especially if they can be made in rolling the cap rails. All the rivet holes and the stop notches are made oblong, to allow for contraction and expansion. This will amply provide for it, as experience has shown, in the longest section of the 3 part 50 lb. rail, (4,500 feet,) which has now, for 10 months, passed through all the changes of our fluctuating climate, in which the extremes of heat and cold are as great as in any other. This point which seemed one of the most to be feared, is now therefore settled satisfactorily, as no inconvenience has been felt from this cause.

Among the merits of the compound rail, will be apparent that of retaining its line in curves, better than the solid rail; the breaking of the joints producing in the bearing rails a mutual counteraction of the tendency to straighten into chords, after being sprung to the curve. With bars so long as 20 feet, it is supposed that, even in the heaviest patterns, it will not be necessary to set them, by previous bending, which, in the solid rail, would be indispensable. The additional strain upon the rivets of the compound rail, will not be objectionable, as it will be in the direction of their length only, and much within their power of resistance.

A very remarkable advantage from the division of the rail into parts will also be the improvement in the quality of the metal. The disposition to increase of weight, has been checked by the difficulty of making a heavy bar perfect. It is understood that the rails of 100 lbs. per yard recently rolled have turned out so indifferently as to induce a return to lighter patterns. However this may be, it is quite certain that a single bar of any weight

cannot be made as sound and tough, as two or three bars of the same length and aggregate section.—The compound principle will permit the tendency to increased weight of rail to go much farther than would be possible in the single rail.

If it should be apprehended that the detached cap of the three part rail will not wear as long as the top of the solid rail, it is answered that this is not necessarily so with a well-proportioned cap rail—and it the separation of the upper portion of the section from the lower should tend to this result, it should be counteracted by the better texture of the lighter bar. Experience, however, thus far indicates no greater wear in the cap rail than in the upper surface of solid rails in use for the same time.

To those, however, who are best disposed to admit the truth of the above remarks, it will be of interest to know what the new rail will cost in the first instance, compared with other common forms of track, and, for information on this question, the following estimates of cost for a rail of medium weight, to be laid in the most usual way, upon cross-ties of wood, are offered to show how the three part rail will, in general, compare with the solid rail in expense of construction:

Solid Rail—65 lbs. per yard.

1. Rails—20 feet long—102½ tons, at \$60 per ton.....	\$6,158
2. Joint fastenings of any variety of form, at 75c per joint, for 528 joints.....	396
3. 2112 cross ties, 7½ feet long—6×6—laid 2½ feet apart, at 20c..	422
4. 9504 spikes, 3 to the lb.—3168 lbs. at 5c.....	158
5. Laying track, materials, and ballast being delivered, viz., spreading ballast, bedding and dressing cross ties, laying and fitting rails and joint fastenings, spiking, adjusting, and trimming track, at 65c per rod of 16½ feet.....	208

Total estimated cost of one mile of track, exclusive of ballast.....

\$7,342

Three Part Rail—65 lbs. per yard.

1. Rails 20 feet long, 102½ tons, at \$60 per ton.....	\$6,158
2. Rivets, 6336, $\frac{1}{2}$ inch diameter, 4 to the lb., 1584 lbs., at 6c..	95
3. Keys, 1056, 2½×1½×½ inches, at 3 to the lb., 352 lbs., at 6c.	21
4. Punching holes for rivets and key, and fitting rails for laying, at... 65c. per rod.	
5. Riveting rails after laying.....	16
6. Leveling and dressing cross-ties.....	17
7. Spreading ballast.....	17
8. Spiking rails.....	5
9. Fitting, adjusting and trimming track.....	10

Total of the above items per rod of track.....\$1 30 per mile.

10. 2112 cross-ties 7½ feet long, 6×6, laid 2½ feet apart, at 20c.....	422
11. 9504 spikes, (one extra at every joint) 4 to the lb., 2376 lbs., at 5c.....	119

Total estimated cost of one mile of track, exclusive of ballast.....

\$7,231

Difference in favor of the three part rail, per mile.

111

The 4, 5, 6, 7, 8 and 9th items of the last estimate are derived from the actual experience of laying the three part rail already put down, under circumstances not at all favorable to economy. It

is believed that at least 10 per cent. on the aggregate of these items could be saved in future work of the same kind upon a large scale. The entire cost of laying the solid rail track is taken at the sum of the 5th, 6th, 7th, 8th and 9th items, which is certainly favorable enough to that track. This work having generally cost at least 50 per cent. more. The cost of joint fastenings for that track is assumed at 75 cents, with less than which, a tolerably good and safe joint cannot be made, although many tracks have been laid with much cheaper joints.

The items of both estimates making up the cost of workmanship show the net expense—to which a fair profit for the contractor should be added in preparing estimates for actual construction. The prices of all the other items include cost of delivery and profit upon the articles.

The detail in which the estimates are given will enable any one to apply them to particular cases. For a lighter or heavier rail, the cost of fastenings and workmanship would differ little from those of the rail of 65 lbs. weight here assumed.

It will thus be sufficiently manifest that the three part rail will cost no more than any other rail of the same weight. With this admission, its friends may be satisfied, for its other advantages must prove its superiority, and, ultimately, it is believed, ensure its adoption.

The accompanying sketch, in figure 1, shows the rail of 130 lbs. per yard proposed for a track entirely of iron. Fig. 2 represents a rail of 65 lbs. per yard, to be laid upon timber supports. Other weights of rail from 50 lbs. upwards can readily be proportioned so as to carry the principle into effect with an advantage increasing with the weight, and it may be said of the compound rail, especially in this form, that as its division into parts, gives it, at all times, an elasticity which a solid bar of the same weight cannot possess, so it will retain that elasticity with a weight which would make the solid bar too rigid, except at the joints, where all such bars are alike weak, and the heaviest the most so in comparison with their strength in the middle of their length.

The subject has now been sufficiently discussed upon its general merits, and the facts and arguments above presented are offered to the profession, soliciting consideration and not shunning criticism. The author is but one of the laborers in this important field of improvement, and has argued the merits of the compound principle in general terms, and so far in favor of all the forms it may assume; and although decided in his preference of the three part pattern, he will be glad to see the suggestions of others, subjected to the test of experiment.

Philadelphia, Wilmington and Baltimore Railroad Company.

RESIGNATION OF ITS PRESIDENT, MR. SWIFT.

At a meeting of the directors held Feb. 11, 1851, the following communication was received from Wm. H. Swift, Esq., president of the company:—

Philadelphia, Feb. 11, 1851.

To the board of directors of the P., W. & B. R. Co.:—Gentlemen—Some six months since I communicated to a number of shareholders of the company my intention to resign the office which, by your kindness, I had been elected to fill, and more recently I have made known to members of this board individually the reasons which had induced me to leave the service of the company; reasons which I may state, here, to be entirely personal to myself and such as I have considered it my duty to regard.

To enable the board to take measures for electing my successor, it has appeared to me proper to designate a period somewhat in advance of the present day for resigning the office of president. Accordingly, with the permission of the board I propose to retire at the close of the current month.

I beg to convey to every member of this board my thanks for the uniform support and kindness which I have received at the hands of each, from the day upon which I entered upon the duties of the office of president to the present time; and for the hearty co-operation which I have met with in carrying out measures which I have considered it my duty, from time to time, to bring to the notice of the board,

in all these I am happy in being able to say that I have no recollection of a single instance in which there has not been a concurrence of opinion between myself and other members of the board, and I shall ever cherish with feelings of great pleasure the remembrance of the harmony which has characterized all proceedings of the board during the time that I have had the honor to participate in its councils.

To the officers of the company, also the secretary, the general superintendent, the agents, the clerks, all, in short, who have responsible duties to perform, I return my thanks, for to their exertions and zealous co-operation, the company owe in a very great measure their present prosperous condition.

Very respectfully, gentlemen,
Your obedient servant,
WM. H. SWIFT.

At an adjourned meeting of the board held Feb. 28th, 1851, the following preamble and resolutions were unanimously adopted and ordered to be published:

"Whereas at a meeting of the board of directors held at Wilmington on the 11th Feb. instant, a letter from Wm. H. Swift, Esq., was presented and read resigning the office of president, to take effect this day, to which time the board was adjourned, with the view of taking final action on the same; it is therefore

Resolved, That in this our acceptance of his resignation of the presidency of this board, we should be unfaithful to the suggestions arising out of this event, if we did not at the same time, express some of the feelings which abundantly gather about our hearts.

Resolved, That it is with deep and sincere regret, felt by each member of this board, that we are called upon to place upon our records, a severance of the official relations which have subsisted with mutual and undisturbed kindness between him and ourselves.

Resolved, That he, being called to the administration of one of the most important corporations of the country, came richly endowed with educational fitness, then holding a high position in the military arm of the government, practically scientific in its pursuits and employments: all the high expectations which were entertained have been amply fulfilled, and the business of the company has been conducted, under his auspices, with that wisdom and energy which is well displayed by the improved and improving condition of the affairs of the company.

Resolved, That the board of directors, in placing much of their multifarious concerns of the company under his exclusive action and control, have the satisfaction to say, that all the several matters so confided to his personal attention were promptly and well considered, and the ultimate decision justly claiming and receiving our unqualified approbation, and we freely unite with him in the declaration, that we "have no recollection of a single instance in which there has not been a concurrence of opinion between himself and other members of the board, in carrying out measures which he considered it his duty from time to time to bring to the notice of the board."

Resolved, That bearing testimony to his eminent qualifications for the management of the important interests confided to his care and supervision, and also to his faithful and zealous discharge of all his duties, it gives us pleasure to acknowledge that an attachment has been won by the affable, friendly and courteous manner which has distinguished his intercourse with each of us, and we receive with great gratification the assurance that he will ever "cherish with feelings of great pleasure the remembrance of the harmony which has characterized all proceedings of the board during the time he participated in its councils."

Resolved further, That we desire he will take with him this testimonial of our esteem and affection and with our ardent wishes that in all the vicissitudes of his life, he may enjoy health and happiness, and that all his undertakings may be prosperous; and with whom or wherever he may be, his merits may be as well understood and as highly appreciated as they have been with us.

Resolved, That the secretary furnish William

H. Swift, Esq., a copy of the above resolutions. Thereafter the board proceeded into election of a successor, and unanimously chose

SAMUEL M. FELTON, President.
Attest A. CAMPBELL, Secretary.
P. W. & B. R. R. Co.

March 1, 1851.

Application of Iron to Railroad Structures.

We give below a portion of the report of the commission recently appointed by the English government to inquire into the subject of the application of iron to railroads. As the report is a very elaborate one, and embraces in its range a series of valuable experiments, we shall continue the publication of the more important parts of it.

1. Present rules for proportioning the load of girders to their breaking weights.

The dimensions of cast iron girders intended for sustaining stationary loads, such as water tanks and floors, are usually so proportioned that their breaking weight shall be *three times* as great as the load they are expected to carry, or in some cases *four or five times* as great. But when the girders are intended for railway bridges, and therefore subject to much concussion and vibration, greater strength is given to them by altering the above proportions, and making the breaking weight *from six to ten times* as great as the load, according to the practice of different engineers. On the other hand, some consider that *one-third* of the breaking weight is as safe a load in the latter case as in the former.*

2. Nature of former experiments, and of those now required, and questions to be examined.

The proportions and forms at present employed for iron structures have been generally derived from numerous and careful experiments, made by subjecting bars of wrought or cast iron of different forms to the action of weights, and thence determining by theory and calculation such principles and rules as would enable these results to be extended and applied to such larger structures and loads as are required in practice. But the experiments were made by dead pressure, and only apply therefore to the action of weights at rest. On the contrary, from the nature of the railway system, the structures employed therein are necessarily exposed to concussions, vibrations, torsions, and momentary pressures of enormous magnitude, produced by the rapid and repeated passage of heavy trains. It soon appeared, in the course of the inquiry, that the effects of heavy bodies moving with great velocity upon structures, had never been made the subject of direct scientific investigation; and as it also appeared that, in the opinion of practical and scientific engineers, such an inquiry was highly desirable, the attention of the commissioners was early directed to the devising of experiments for the purpose of elucidating this matter.

The commissioners accordingly proposed to examine the questions involved in the inquiry under the two following heads—viz.,

1. Whether the substance of metal which has been exposed for a long period to percussions and vibrations undergoes any change in the arrangements of its particles by which it becomes weakened? And,

2. What are the mechanical effects of percussions and the passage of heavy bodies in deflecting and fracturing the bars and beams upon which they are made to act?

Upon the first of these questions the commissioners cite observations and conjectures to the following effect:—

Many curious facts elicited in evidence show,

* The variation of the proportion of breaking weight to load adopted—viz., *from three times to ten times*, is truly a sufficient proof of the absence of well-established principles. Any "common-sense" and non-professional person, required to select between these two limits, would, in all probability, forego all further reasoning and experiment, by "striking the average," and to this identical result, or very near it, the scientific labors of the commissioners will presently appear to have led them.

that pieces of wrought iron which have been exposed to vibration, such as the axles of railway carriages, the chains of cranes, &c., employed in raising heavy weights, frequently break after long use, and exhibit a peculiar crystalline fracture and loss of tenacity, which is considered by some engineers to be the result of a gradual change produced in the internal structure of the metal by the vibrations. In confirmation of this, various facts are adduced, as, for instance, that if a piece of good fibrous iron have the thread of a screw cut upon one end of it by the usual process of tapping, which is always accompanied by much vibratory action, and if the bar be then broken across, it will be found that the tapped part is a good deal more crystalline than the other portion of the bar. Others contend that this peculiar structure is the result of an original fault in the process of manufacture, and deny this effect of vibration altogether; whilst some allege that the crystalline structure can be imparted to fibrous iron in various ways, as, by repeatedly heating a bar red-hot, and plunging it into cold water, or by continually hammering it, when cold, for half an hour or more. One witness* thinks the various appearances of the fracture depend much upon the mode in which the iron is broken. The same piece of iron may be made to exhibit a fibrous fracture when broken by a sharp short blow. Temperature alone has also a decided effect upon the fracture; iron broken in a cold state shows a more crystalline fracture than the same iron warmed a little. The same effects are by some supposed to be extended to cast iron.

The commissioners "endeavored to examine this question experimentally in various ways," which they report as follows:—

A bar of cast iron, three inches square, was placed on supports about 14 feet asunder. A heavy ball was suspended by a wire 18 feet long from the roof, so as to touch the centre of the side of the bar. By drawing this ball out of the vertical position at right angles to the length of the bar, in the manner of a pendulum, to any required distance, and suddenly releasing it, it could be made to strike a horizontal blow upon the bar, the magnitude of which (i. e. the blow) could be adjusted at pleasure, either by varying the size of the ball or the distance from which it was released. Various bars (some of smaller size than the above) were subjected, by means of this apparatus, to successions of blows, numbering in most cases as many as 4000, the magnitude of the blow in each set of experiments being made greater or smaller as occasion required. The general result obtained was, that when the blow was powerful enough to bend the bars through *one-half* of their ultimate deflection (that is to say, the deflection which corresponds to their fracture by dead pressure), no bar was able to withstand 4000 such blows in succession; but all the bars (when sound) resisted the effects of 4000 blows, each bending them through *one-third* of their ultimate deflection.

Other cast iron bars, of similar dimensions, were subjected to the action of a revolving cam, driven by a steam engine. By this they were quickly depressed in the centre, and allowed to restore themselves, the process being continued to the extent even, in some cases, of a hundred thousand successive periodic depressions for each bar, and at the rate of about four per minute. Another contrivance was tried, by which the whole bar was also during the depression thrown into a violent tremor. The results of these experiments were, that *when the depression was equal to one-third of the ultimate deflection, the bars were not weakened*. This was ascertained by breaking them in the usual manner with stationary loads in the centre.—When, however, the depressions produced by the machine were made equal to *one-half* of the ultimate deflection, the bars were actually broken by less than nine hundred depressions. This result corresponds with and confirms the former.

By other machinery, a weight equal to half of the breaking weight was slowly and continually dragged backwards and forwards from one end to the other of a bar of similar dimensions to the above. A sound bar was not apparently weakened by ninety-nine thousand transits of the weight.

* Brunel.

From these observations, the commissioners proceeded to deduce as follows:—

It may on the whole, therefore, be said, that as far as the effects of reiterated flexure are concerned cast iron beams should be so proportioned as scarcely to suffer a deflection. And as it will presently appear that the deflection produced by a given load, if laid on the beam at rest, is liable to be considerably increased by the effect of percussion, as well as by motion imparted to the load, it follows, that to allow the greatest load to be one-sixth of the breaking weight is hardly a sufficient limit for safety, even upon the supposition that the beam is perfectly sound.

The practical truth of the approximate rule thus derived will evidently depend, not only on the correctness of the experiments, which is not to be questioned, but also on the correspondence of the several conditions under which they were made, with those affecting the structures referred to; and since the application of the rule would impose a large increase of section in girders designed to support railway bridges, every item of the data upon which it is founded claims the scrutiny of the inquirer.

The report proceeds to state, that—

In wrought iron bars no very perceptible effect was produced by 10,000 successive deflections by means of a revolving cam, each deflection being due to half the weight which, when applied statically, produced a large permanent flexure.

From the Merchant's Magazine.

Internal Improvements of the State of New York.

A SKETCH OF THE RISE, PROGRESS, AND PRESENT CONDITION OF INTERNAL IMPROVEMENTS IN THE STATE OF NEW YORK.

Continued from page 115.

ENLARGEMENT OF THE ERIE CANAL.

In January, 1836, the Canal Board made a report to the Assembly, (Doc. 98,) giving an account of the preliminary arrangements for enlarging the Erie canal, and doubling its locks. In July, 1835, the board "resolved that the canal be enlarged, so as to give six feet depth, and sixty feet width of water on the surface; and that the locks be 150 feet long, and 15 feet wide in the clear."

Three members of the board voted for a canal 8 feet deep by 80 feet in width; one for 7 and 70; and seven members for 6 feet in depth and 60 in width. At an adjourned meeting in October, a vote was carried for enlarging the canal to 7 feet in depth and 70 in width; the following members adhering to their original vote for a canal 6 feet in depth and 60 in width, viz: Lieut. Governor Tracy, Samuel Young, John A. Dix, and A. C. Flagg; Gen. Van Rensselaer adhered to the same opinion, but was absent when the last vote was taken. It was decided to make the locks 110 feet long, and 18 feet wide; 3 feet wider than the old locks.

It was estimated by the State Engineers that the construction of double locks, and the enlargement of the canal to 7 feet in depth and 70 feet in width, would cost \$12,416,150; and to 6 feet deep and 60 wide, \$10,363,331; not including the cost of land damages in either estimate.

This report refers to estimates made by John B. Jervis, and Holmes Hutchinson, for the purpose of showing the relative capacity and expense of transportation on canals of various dimensions, and with boats of different sizes. Mr. Jervis was in favor of a canal of the largest size, 8 by 80, while Mr. Hutchinson's estimate favored a canal 6 by 60, or 6½ by 65.

It was assumed in the report of the Canal Board that the enlargement of the canal, as finally settled, 7 by 70 feet, would lessen the expense of transportation, exclusive of toll, about 50 per cent. The cost of transportation, exclusive of toll, for the last seven years, averages nearly 50 per cent. less than for the preceding seven years. This has been effected by bottoming out the canal, and giving to the transporter four feet of water, as originally contemplated when the Erie canal was constructed. Assured of four feet of water, honest measure, those

engaged in canal transportation have constructed a class of boats which will carry 80 tons, drawing about 3½ feet of water, and of a length and breadth adapted to the old locks of the Erie canal.

At the legislative session of 1836, acts were passed authorising the construction of the Black River and Genesee Valley canals; for the construction of a towing path from Mud Lock, on the Oswego canal, along the Seneca river to Baldwinsville; to reconstruct the locks on the Cayuga and Seneca canal of the width of the enlarged Erie locks, and make them of stone; and to replace the wooden locks on the Glens Falls feeder with stone locks. Laws were also passed for the relief of the Chenango canal contractors, under which the canal board made allowance to the amount of \$254,000.

At the same session, charters were granted for forty-three railroads, nine of which have been constructed, viz: Albany and West Stockbridge, Attica and Buffalo, Auburn and Rochester, Lake Champlain and Ogdensburg, Lewiston, Rutland and White Hall, Schenectady and Troy, Shantales, and Syracuse and Utica. An act was also passed, chap. 170, to expedite the construction of the New York and Erie railroad, authorising a loan of the credit of the State to said company for three millions of dollars, on certain conditions.

Governor Marcy, in his annual message of 1836, said: "I have not been without apprehensions, and I still entertain them, that internal improvements cannot be long prosecuted on an extensive scale, unless sustained by a wise system of finance. No new work can be executed without using the public credit, and however high that credit is at this time, it cannot be liberally used, and long upheld, without some financial arrangements that will inspire confidence at home and abroad." "I have heretofore expressed, and I deem it appropriate now to repeat, my regret that we have departed from the wise system in relation to finance under which our first public works were commenced, to the evident detriment of the general cause of internal improvements. The improvident practice of borrowing money without providing available funds for paying the interest, has already been carried to a point beyond which it cannot be pushed, without producing serious mischief." "Can we, with propriety, ask capitalists to put faith in our contracts, on the ground that the people, in some future age, will do what we decline to do, burden their resources to pay the interest, which, in our time, were suffered to accumulate on the debts we had contracted?"

In the annual report of the comptroller, it was shown that in all the laws for borrowing money, after the completion of the Erie and Champlain canals, the safe financial policy embodied in the act of 1817, had been disregarded. And the report said: "If money is to be borrowed, to be expended upon works which promise no return to pay interest or principal on the loan, a sum sufficient to pay the interest at least, should be provided by a direct tax." And again, "If new canals are to be commenced, or if stock is to be issued for any object whatever, on the credit of the people, the establishment of a system of revenue on a firm basis, should precede any further use of such credit; and this system ought to be made sufficiently broad to cover \$150,000 annually, to pay interest on the lateral canal debts."

Notwithstanding these admonitions in the message of the governor and the report of the comptroller, the legislature passed laws for borrowing two millions eight hundred thousand dollars to construct the Black River and Genesee Valley canals, and the only auxiliary funds provided for the payment of interest, was the amount of premiums which might be obtained on the stock. This proved to be nothing, and there was some difficulty in negotiating the loan at par. The legislature also authorised a loan of three million dollars to the Erie railroad, depending on the company to pay the interest.*

* The legislature of 1836 was strongly impregnated with the "unregulated spirit of speculation," to which Governor Marcy alluded in his message. In that year, the foundation was laid for an expenditure of not less than seven millions of dollars, on the Black River and Genesee Valley canals; and,

This act required the company to construct 145 miles of road, before receiving any portion of the stock, but this restriction was removed by acts passed in 1838 and 1840.

James Powers introduced a resolution in the senate, calling on the finance committee to inquire into the expediency of passing a law "levying a tax sufficient to pay the interest on all debts for which no means are provided." Mr. Van Schaick, chairman of that committee, made a very full and able report on the finances, [Doc. 35], and recommended a half mill tax for five years; and also, that whenever the legislature proposes to construct a new canal, a section shall be added to the law, for levying a tax equal to the interest on the moneys to be borrowed, and to make up any loss on the work to be constructed. These salutary recommendations found no favor with the legislature of 1836. In the session of 1837, fifteen railroads were chartered, none of which, it is believed, have been constructed. No act was passed for any new canals.

In 1838, George W. Patterson, late lieutenant governor, was chairman of the canal committee of the assembly, and made a call on the canal commissioners for the amount of means at their disposal applicable to the enlargement of the Erie canal, and inquiring how much work they could immediately put under contract, provided the legislature should authorise loans to go on with it. The commissioners answered, that the work under contract was limited to the estimated surplus revenues of the canals; and they referred to various points on the Erie canal, where it would be necessary to commence without delay, if it was intended to complete the enlargement in five years. Mr. Patterson reported a bill to the assembly, requiring the commissions to put under contract, with as little delay as possible, the sections referred to in their report, and also such other portions as in the opinion of the canal board will best secure the completion of the entire enlargement within five years, "and for supplying the funds necessary to complete the work within that time, the faith of the State is hereby pledged." This bill passed the assembly by a vote of 91 ayes to 3 nays; and, with some modifications, passed the senate by a vote of 17 to 6.—In about two years from the passage of this law, additional canal contracts were made, to an amount of more than ten millions of dollars.*

The efforts of Mr. Patterson in favor of completing the enlargement of the Erie canal in five years were ably seconded by the committee on ways and means, and by the celebrated report of Samuel B. Ruggles, a member of assembly from the city of New York, and chairman of that committee. This report reviewed the financial policy of the State for a series of years, commencing with Mr. Wright's report in the senate in 1827; and came to the conclusion that a tax, and other measures proposed by the financial officers for preserving the credit of the State, were not required, and that if the legislature deemed it expedient to construct canals, and assume railroads which had been con-

including interest on the stock from 1842, a loss to the treasury of \$6,256,261 55, on the Erie railroad loan. Of the twelve banks chartered at that session, one-half of them failed, previous to the close of 1842, drawing from the safety fund a million of dollars to cover their defaultations.

* The canal commissioners in their annual report of 1839, give the following account of the amount of work which they had put under contract, viz:

On the Erie canal enlargement, p. 22. \$10,405,913
On the Black River canal, page 33. 1,564,834
On the Genesee Valley canal, page 43. 4,750,122

Total amount of contracts. \$16,720,869

All but three millions had been contracted for within 15 months preceding January, 1839. Gov. Seward, in his message of 1842, page 17, says:—"The then commissioners, under the law of 1838, entered into contracts, pledging the treasury to pay sums equal to \$12,477,336; all of which, except \$579,204, was made payable before May, 1842."—Before that time, 6 per cent State stock had depreciated from 7 per cent above par, in April, 1838, to 22 per cent below par.

structed by companies, the State might, without endangering its credit, or exposing its people to taxation, borrow four millions a year, for ten years, to be applied to these purposes; and an act was passed appropriating four millions of dollars for the year 1838.

Wm. H. Seward was chosen governor in November, 1838, and in his first annual message in January, 1839, after recommending that the patronage of the State should be extended to three great lines of improvement from the Hudson to Lake Erie, from Albany to Buffalo, and from Lake Champlain to Lake Ontario and the St. Lawrence, he referred to the report of the committee on ways and means of the preceding year, in the following terms:

"I respectfully refer you to a report of a committee of the last house of assembly, in which this subject is discussed with eminent ability, and which results in showing that the canals are a property substantially unincumbered; that their productiveness would warrant the State in expending in internal improvements, \$4,000,000 annually, during a period of ten years; and that the revenues of the canals alone, would reimburse this expenditure previous to the year 1865. This sum far exceeds any estimate of the expense required to complete the entire system, while it is not to be doubted that the parts yet to be constructed will eventually be productive of revenue. The conclusions of this report, although of vast interest to the State, and, I trust, decisive of its policy, have not been questioned."

In the annual report of the comptroller, made to the legislature a few days after the message, the policy of adding forty millions of dollars to the State debt was questioned, and the financial policy recommended from 1827 to the period referred to, was defended, in reference to the remarks made upon it in the report of the committee on ways and means, in 1838. The reader is referred to assembly doc. No. 242 of 1838, for Mr. Ruggles' report; and assembly doc. No. 4 of 1839, for that of Mr. Flagg.

The assembly of 1839 passed bills authorising the issue of State stock to the amount of \$4,815,000 for canals and railroads. These bills were all rejected by the senate, with the exception of one, appropriating \$75,000 for the improvement of the Oneida river.

The finance committee of the senate consisted of Col. Young, Gulian C. Verplanck and Alonzo C. Paige; and each made a separate report on finance. These are documents 96, 101 and 103 of the senate of 1839.

Samuel B. Ruggles was appointed a canal commissioner at this session, and discharged the duties of an acting commissioner.

In his annual message, in 1840, Governor Seware complained of errors in the estimates for the public works, and stated that "the confidence of the people in the policy of internal improvement, has sustained a severe shock, from the discovery that the State was committed by the legislature to an expenditure of thirty millions of dollars, for the completion of three works alone, upon estimates of the same works rising only to about fifteen millions." "The discovery of the errors of our predecessors, has happened at a time when confidence is impaired, property depreciated, the sale of real estate arrested, and currency disordered." "The policy indicated by public sentiment, and demanded by the circumstances of the times and the condition of the State, is to retrench the expenditures upon our works of internal improvement, and prosecute the system with consideration and economy." "It is doubted whether the Erie canal would not have been adequate for all useful purposes, if the scale of enlargement had been much less extensive than that fixed by the canal board; and it is certain that smaller dimensions, or a more tardy enlargement would have been adopted, had the estimates of the canal commissioners presented truly the cost of the work."

† The message gave the debt of the State, over funds on hand, at \$6,728,687 25. This did not include loans to railroads, for the reason, as stated in the message, that "the issue of those stocks is regarded as a loan of the credit of the State upon undoubted security."

In the assembly, Charles A. Mann, the present senator from Oneida, introduced a resolution, calling on the canal board for opinions relative to a change in the size of the enlargement, the length of time for its completion, the probable increase of tolls, and how much the debt could be increased during the next seven years, without resort to direct taxation, etc., and the extent to which aid may be given by loans of State credit to enterprises for internal improvements, without injury to the financial arrangements.

The answer to this resolution was drawn by J. C. Spencer. The estimate for tolls in future was based on the actual rate of increase from 1826 to 1839, in each period of ten years, at the same rate of annual increase, (7½ per cent.) to be applied to the seven years referred to in the resolution. The table thus constructed is remarkably accurate, varying from the actual results only a few thousand dollars in each year. The report came to the conclusion that "the debt of this State can be increased fifteen millions of dollars, at an interest of six per cent. during the next seven years, or twenty-one millions at five per cent. without being obliged to resort to direct taxation, or to loans to pay interest." The report also expresses an opinion, that in addition to three or four millions for the canals, in the ensuing year, another million might be loaned to railroads. The canal board came to the conclusion that no change could at that time be advantageously made, in the size of the enlargement, or the character of the work. See assembly doc. No. 306, of 1840

To be continued.

Iron Lighthouse for the American Government.

We have been favored by Mr. John Walker, of Gracechurch street, with a view of a corrugated iron lighthouse, which he is at present constructing for the American government. It is, we believe, to be fixed on one of the keys off the coast of Florida. He has only contracted for the iron part of it, the lantern to be furnished by the Americans who are to erect it. It is now being put together at the Shepherd and Shepherdess fields, New North-road, Hoxton.

The foundation is to consist of 16 solid wrought iron screw piles, which will be bedded in the solid rock, and are to rise 15 feet above it; 12 of these pillars will be disposed to form a square 45 feet each way. The remaining four will make a smaller interior square, and will be the foundation for the tower. On these, iron girders are to be placed, and above them a thick flooring of oak plank forming a platform, from which the lighthouse will spring. We now come to the part which is to be seen erected at Hoxton. It may be divided into two parts—the house for the keepers of the light, and the lantern tower. The house is 38 feet square and 11 feet in height, and is made of a double casing of corrugated iron three-eighths of an inch in thickness, and placed 5 inches apart.

It is divided into nine rooms by partitions of a similar construction; the doors, windows, corners of the house, places where the partitions join the sides, and top and bottom of the sides, are all cased with angle iron. In a wooden house the angle iron is represented by the timbers, and the corrugated plates by the boarding. It is surmounted by a curved roof, which is of single iron plate, inside of which will be placed a timber roof, without this the heat would be intolerable. The whole of the house is bolted together in pieces 2 feet 6 inches in width. The tower is raised thro' the roof and from the centre of the platform. It is also made of a double casing of iron, is cylindrical, and 7 feet inside in diameter. It is divided into rings 6 feet in height bolted together, and each ring is lifted to its place in two pieces. The height from the platform to the commencement of the lantern is 76 feet.

The tower derives much strength from a spiral castiron staircase which ascends to the lantern floor, and is supported by a solid iron newel. Each step, as it is bolted to the side, and also to the newel, forms a stay in itself. To secure additional stiffness, pieces of gaspipe are to be placed between the castings every 11 inches, and to be bolted through. In addition, from the piles 12 staves of cast iron pipe, 11 inches in diameter, will rise and be inclined to meet the lower at the top, just

beneath the lantern, and also four stays from the inner piling. This again will be stiffened with vertical, horizontal, and diagonal bracing, so that when erected it will have the appearance of a pyramid of iron net work, surmounted by a lantern, and enclosing a house and monster chimney.

The double casings spoken of will not only be a great advantage with regard to strength, but also for the purpose of ventilation. Openings are made at the bottom of the building in the partitions and the tower, so that a free current of air will pass everywhere. The form of corrugated iron, which may be described as a succession of waves in and out, or curves of contrary flexure, gives great strength in itself. What with the bracing, and the way in which both house and tower are tied together, it is supposed that it will completely resist a hurricane. The building will shortly be completed and shipped to its destination.—*London Shipping Gazette.*

European and North American Railway.

Telegraphic despatches from St. John and Fredericton, received on Saturday evening, announce the passage of the bill incorporating the European and North American railway, through the Assembly on Tuesday last. The bill gives authority for amalgamation of the company with companies under the same name in Maine and in Nova Scotia. The facility bill, similar in its terms to the Canadian law, guaranteeing the interest on half the cost of the road, has been introduced as a government measure, and is sure to pass.

Nova Scotia.—A bill has been introduced into the house of assembly in Nova Scotia, for incorporating the European and North American railroad, in that Province. The consideration of the bill by unanimous consent, was postponed till after the arrival of advices from the Hon. Mr. Howe, now in England, expected by the steamer Europa, to sail on the 15th inst.

In the event of the failure of Mr. Howe, to obtain the direct assistance of British government, it is proposed to adopt in Nova Scotia, the same policy as in New Brunswick, and carry out the plan of the Portland convention.

We learn that the attempt on the part of the house and the present ministry in Nova Scotia, to make the road in that Province as a government measure, was in opposition to the opinions of a majority of the executive committee, and that no confidence has ever been entertained by them in the success of Mr. Howe's mission, if he sought to obtain direct assistance from the British government. By adopting the policy of Canada, which has been favorably received by the British government, it is believed that the road can be carried successfully through.—*Advertiser.*

New York Canal Tolls for 1851.

The following table shows the rates of tolls which the canal board have fixed upon for the present, with the amount of reduction from the past year.

	From	To
Beefsalted.....	4 mills	3 mills
On passenger boats who elect to commute.....	4 cents	3 cents
Cheese.....	4 mills	3 mills
Copper Ore.....	1 "	1 "
Drain tile, (new article).....		2 "
Hide, raw, dom an U. S.....	4 "	"
Railroad Iron.....	4 "	2½ "
Oysters in shell going from tide water.....	5 "	4 "
In can or keg, (new class).....		4 "
Shingles per M pds, instead of per M sh'ls.....		4 "
Tin in boxes.....		5 "
Square and round timber transported in raft, except dock sticks, if transported between 15th June and 15th August...		7 "
When transported prior or subsequent to date above specified, the toll is.....		
Wheat.....	4 "	1 cent
Flour.....	4 "	3 mills

U. S. Mint.

The Philadelphia American of yesterday says:—The annexed statement, for which we are indebted to the Treasurer of the U. S. Mint, E. C. Dale, Esq., shows the operations of that institution for the month of February. The total coinage during the month of February was \$5,115,353, against \$2,705,193 40 in January, showing an increase of \$2,410,164 60, or near 90 per cent. By the middle of the present month it is confidently expected that all deposits, upon the ascertainment of their value, will be paid promptly, even should they reach to six or seven millions a month. The present paying point extends to deposit No. 1958 inclusive.

GOLD COINAGE.

	Value.
228,049 double eagles.....	\$4,560,980
133,326 quarter eagles.....	333,315
188,702 gold dollars.....	188,702

550,077 pieces.....\$5,082,997

SILVER COINAGE.

105,000 dimes.....	10,500
100,000 half dimes.....	5,000

COPPER COINAGE.

1,686,610 cents.....	16,866
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2,441,637 pieces, value.....\$5,114,863

Gold bullion deposited for coinage, from 1st to 28th of February, 1851, inclusive:—

From California.....	\$2,360,000
From other sources.....	140,000

Total.....\$2,000,000

Silver bullion deposited for coinage, from 1st to 28th February, inclusive. \$7,700

Indebtedness of European States.

The following interesting and useful table of the amount of public debt of the different European nations, was furnished to us by a gentleman, who spent some time in Europe a few years since, on a diplomatic mission.

Country.	Population.	Area in acres.	Debt.	Interest.	Total debt.	Total interest.
Belgium.....	4,230,000	8,044,166	\$6,000,000	4 per ct.	\$26,000,000	\$1,240,000
Denmark.....	2,097,400	3,247,680	65,000,000	3	65,000,000	1,960,000
Holland.....	2,820,000	8,889,600	82,900,000	5	407,900,000	12,170,000
France.....	33,000,000	122,310,000	558,500,000	5	884,500,000	38,529,444
Portugal.....	3,400,000	22,080,000	47,500,000	4	58,755,500	2,627,775
Prussia.....	13,800,000	67,942,000	30,000,000	4	97,500,000	7,800,000
Russia.....	51,100,000	1,306,757,700	368,000,000	5	47,253,375	2,362,958
Spain.....	11,963,000	112,947,200	32,500,000	4	400,500,000	19,600,000
Great Britain.....	26,861,000	74,688,000	2,418,100,000	3	3,430,478,980	111,476,260
Grand aggregate.....			\$5,407,893,855		\$197,666,447	
To these should be added unfunded debt of England.....			\$237,909,510		\$237,909,510	
In annuities.....			\$306,967,065		\$306,967,065	

NAME.	Miles in operation.	Capital stock by charter.	Amount of stock subscribed.	Amount paid in by last report.	Amount of capital stock now paid in.	Funded debt by last report.	Present amount of funded debt.	Floating debt as by last report.	Present amount of floating debt.	Am't now of funded and floating debt.	Interest per ct. on funded debt.	Cost of road per last report.	Cost of road to present time.
Albany and Schenectady.....	17	1,000,000	1,000,000	1,000,000	1,000,000	552,000	700,000	none.	12,405	700,000	6	1,638,284	1,711,412
Albany and W. Stockbridge.....	38 1/2	1,000,000	1,000,000	1,000,000	1,000,000	70,000	70,000	330,895	330,895	330,895	7	1,930,895	1,930,895
Africa and Buffalo.....	31 1/2	800,000	800,000	800,000	800,000	638,000	535,000	67,176	42,676	42,676	7	870,648	906,915
Auburn and Rochester.....	78	3,000,000	2,195,765	2,151,765	2,195,765	638,000	535,000	60,000	30,000	625,000	6	2,968,837	3,000,000
Auburn and Syracuse.....	22	393,750	393,750	256,250	367,796	46,670	21,670	25,886	12,405	34,165	7	395,737	428,241
Buffalo and Niagara Falls.....	35	500,000	168,000	118,000	367,796	46,670	21,670	25,886	12,405	34,165	7	450,000	450,000
Cayuga and Susquehanna.....	35	380,000	380,000	375,000	380,000	70,000	70,000	5,000	3,000	75,000	7	450,000	450,000
Chemung.....	31 1/2	450,000	380,000	375,000	425,000	336,000	325,000	41,549	47,149	372,149	6 1/2	819,631	821,331
Hudson and Berkshire.....	75	4,000,000	3,400,162	3,157,175	3,310,552	1,867,635	3,486,750	88,101	111,151	3,697,901	7	5,003,675	6,666,681
Hudson River.....	337	10,500,000	6,031,100	5,778,891	5,801,255	5,839,918	9,856,568	2,481,647	2,475,864	12,332,433	7	16,430,868	20,323,581
Long Island.....	80	5,000,000	3,888,750	3,887,930	3,887,930	881,000	881,000	37,487	37,487	918,487	6 1/2	4,666,908	4,666,908
New York and Harlem.....	61	3,000,000	2,500,000	1,329,517	1,334,612	338,000	1,081,232	313,957	546,650	1,627,882	7	1,963,291	3,417,737
New York and New Haven.....	44	2,000,000	2,000,000	350,000	350,000	182,000	200,000	22,906	10,463	210,463	7	548,352	571,774
Northern.....	35	330,000	300,000	300,000	300,000	185,500	185,500	4,379	4,379	189,879	6	674,798	687,324
Oswego and Syracuse.....	25 1/2	300,000	300,000	300,000	300,000	42,000	42,000	23,355	22,550	64,550	7	386,304	420,000
Rensselaer and Saratoga.....	104	4,200,000	3,364,979	3,364,979	3,364,979	42,000	42,000	23,355	22,550	64,550	7	386,304	396,375
Rochester and Syracuse.....	22	300,000	300,000	300,000	300,000	42,000	42,000	23,355	22,550	64,550	7	386,304	396,375
Saratoga and Schenectady.....	22	300,000	300,000	300,000	300,000	42,000	42,000	23,355	22,550	64,550	7	386,304	396,375
Saratoga and Washington.....	22	300,000	300,000	300,000	300,000	42,000	42,000	23,355	22,550	64,550	7	386,304	396,375
Schenectady and Troy.....	20 1/2	650,000	650,000	650,000	650,000	20,500	59,720	16,295	1,698	61,398	7	672,900	680,046
Syracuse and Utica.....	53	2,400,000	2,400,000	1,502,000	2,400,000	80,000	48,000	45,653	7,348	166,848	7	2,363,043	2,490,083
Tonaawanda.....	43 1/2	1,000,000	1,000,000	950,000	1,000,000	159,500	159,500	5,133	4,100	163,600	6	1,150,968	1,216,820
Troy and Greenbush.....	6	275,000	274,400	274,400	274,400	5,700	4,550	5,133	4,100	8,650	7	278,028	282,527
Utica and Schenectady.....	78	3,560,000	3,560,000	3,494,010	3,494,010	102,500	102,500	102,500	102,500	200,000	7	4,006,428	4,183,418
Utica and Schenectady.....	24	1,500,000	890,100	237,822	467,636	200,000	200,000	200,000	200,000	200,000	7	216,325	603,457
Watertown and Rome.....	24	1,500,000	890,100	237,822	467,636	200,000	200,000	200,000	200,000	200,000	7	216,325	603,457
New York and Albany.....	31	1,000,000	1,000,000	1,000,000	1,000,000	31,932	31,932	45	64,457	96,389	7	32,120	32,120
Buffalo and State Line.....	150,000	1,600,000	445,800	64,457	64,457	24,778	24,778	68	64,457	89,235	7	45,254	45,254
Canadaigua and Corning.....	150,000	1,600,000	445,800	64,457	64,457	24,778	24,778	68	64,457	89,235	7	45,254	45,254
Sackett's Harbor and Ellensburg.....	150,000	1,600,000	445,800	64,457	64,457	24,778	24,778	68	64,457	89,235	7	45,254	45,254

RAILROADS OF NEW YORK, 1850.—COMPILED FROM REPORTS MADE IN ACCORDANCE WITH THE LAW.

NAMES.	Miles in operation.	Miles run by passenger trains.	Whole number carried in the cars.	Number carried one mile.	Number carried each mile run.	Earnings from passengers.	Expenses of passenger business.	Earned per passenger per mile—cents.	Cost per passenger per mile—cents.	Earned per mile run—cents.	Cost per mile run—cents.	Profit per passenger per mile—cents.	Profit per mile run—cents.	Miles run by trains.	Total tons carried.
Albany and Schenectady...	17	51,545	284,279	4,832,743	93½	132,207 69	48,765 00	2.735	1.009	256	94 1.726	162	32,248	63,012	
Auburn and Rochester.....	78	179,550	271,303½	13,711,977	76½	386,616 13	115,583 45	2.82	.843	215	64 1.976	151	62,016	34,145	
Hudson and Berkshire.....	31½	38,896	33,491	546,592	14	14,771 63	13,222 43	2.702	2.419	38	34 .283	4	17,680	23,809	
Hudson River.....	75	158,431	509,180	17,821,300	112	242,595 10	144,647 53	1.361	.812	153	91 .549	62	25,080	5,745	
Northern.....	44	10,332	5,922	200,730	19½	6,623 19	3,057 16	3.299	1.772	64	34 1.527	30	17,341	12,074	
Oswego and Syracuse.....	35	58,480	77,162	1,937,085	33	57,118 33	32,607 24	3	1.683	97	55 1.317	42	16,000	7,949	
Rochester and Syracuse.....	104	55,952	93,561½	5,964,535	106½	176,991 47	64,806 74	2.967	.789	316	84 2.178	232	15,400	9,604	
Tonawanda.....	43½	115,884	256,404	9,571,050	82½	255,252 80	74,567 03	2.667	.779	220	64 1.888	156	38,144	29,211	
Troy and Greenbush.....	6	47,792	237,796	1,426,776	30	33,904 46	32,873 45	2.376	2.304	71	69 .072	2	6,921	38,988	
Utica and Schenectady.....	78	229,940	370,988½	22,430,109	97½	595,472 27	175,127 99	2.655	.781	251	76 1.874	175	93,580	98,695	
New York and New Haven	61	282,797	652,122	20,867,904	73½	402,358 17	218,062 43	1.923	1.045	142	77 .876	65	25,688	15,473	

NAMES. [Continued.]	Tons carried one mile.	Tons each mile run.	Earnings from freight.	Cost of freight business.	Earned per ton per mile—cents.	Cost per ton per mile.	Earned per mile run—cents.	Cost per mile run—cents.	Profit per ton per mile.	Profit per mile run.	Earnings from sources other than passenger and freight.	Total earnings.	Total expenses transportation.	Dividends. Amount.	Time covered by report.
Albany and Schenectady...	1,071,204	33 1-5	70,242 69	42,406 98	6.557	39.58	218 131	2.6	87	6,134 50	208,584 88	91,171 98	70,000 00	12 months.	
Auburn and Rochester.....	2,663,310	43	111,998 49	47,882 19	4.205	1.798	180 77	2.407	103	17,196 32	515,810 94	163,465 64	260,551 80	10 "	
Hudson and Berkshire.....	577,130	32½	25,269 28	13,127 45	4.378	2.274	143 70	2.104	73	1,000 00	41,040 91	27,349 88	.....	12 "
Hudson River.....	229,800	9	18,575 56	9,235 94	8.083	1.019	74 37	4.064	37	6,490 00	267,660 66	167,383 47	.....	12 "
Northern	196,098	11½	11,187 69	8,760 50	5.705	1.977	64 50	.728	14	347 69	18,158 57	12,317 66	.....	12 "
Oswego and Syracuse.....	267,089	16½	9,061 32	6,335 68	3.392	3.372	56 39	1.020	17	12,191 96	78,371 64	38,942 92	14,000 00	12 "	
Rochester and Syracuse...	838,530	54.4	24,444 74	18,759 36	2.676	1.640	158 89	1.036	69	.....	201,436 21	60,876 58	.....	2 "
Tonawanda	859,807	22½	67,668 37	35,055 55	7.87	1.077	177 92	3.793	85	21,476 88	344,398 05	109,622 27	92,000 00	12 "	
Troy and Greenbush.....	233,930	34 4-5	24,261 63	11,060 70	14.64	1.728	350 150	9.919	191	1,252 72	59,418 81	43,054 48	8,232 00	12 "	
Utica and Schenectady....	4,760,730	50	255,668 47	133,045 87	5.376	2.797	273 142	2.573	131	72,285 25	923,425 99	308,173 86	356,000 00	12 "	
New York and New Haven	625,000	24½	26,818 91	19,823 95	4.291	3.172	107 73	1.119	34	32,612 23	461,789 31	237,886 38	174,930 00	12 "	

Railway Law Case.

In the Court of Common Pleas, at Claremont, N.H., last week, the case of Alvah Smith, versus Nashua and Lowell railroad company was tried. In the spring of 1849 the plaintiff had a large quantity of hides transported by the company, and which he alleged were left in the depot of the corporation to be safely kept until the plaintiff should have had a reasonable time to take them away. He further alleged that through the negligence of the agents or servants of the corporation, the hides were suffered to become wet and to remain in that condition till they were greatly injured, &c.

The defence of the corporation was, that their agent notified the plaintiff when the hides arrived at the depot, that they could not remain there for want of room, and that he must take them away, and it was further contended that in point of fact there had been no negligence on the part of the corporation, in the care of the property.

The court instructed the jury, that the corporation could not be held as common carriers—that their duty as common carriers was performed, as soon as the goods were deposited in a safe place at the end of the route, and they could alter that, be made liable only as depositors without there, in which case they could not be charged unless guilty

of gross negligence. The jury were further instructed that the plaintiff must make out a contract, but that notwithstanding he was told that he must take away the hides, still the jury might infer from the fact that the hides were actually stored away by the defendants agents, and from the other facts of the case that the defendants finally consented to let them remain. The jury returned a verdict for the plaintiff of five hundred and fifty dollars damages.—*Railway Times of the 27th ult.*

Maine.

The people of Bangor are moving in the project of the construction of a railroad up the Penobscot river to Lincoln, a distance of 48 miles from Bangor, and 36 from Oldtown, the terminus of the Bangor and Oldtown railroad. A meeting was recently held in that city, at which the Mayor presided, with Gen. Veazie, Ira Fish, Asa Smith, and F. M. Sabine, vice-presidents. The committee on resolutions, reported the following, which were unanimously adopted:

Resolved—That a railroad up the Penobscot river is imperatively demanded, to give Bangor a cheap and easy connection with the forests which supply the material of its principal business, and

with a region of vast extent and fine agricultural capacities which it would open to a rapid and prosperous settlement; and to recover and retain for Bangor the trade of the county of Aroostook, now being directed down the river St. John.

Resolved—That such a railroad, along a route already thronged with travel and freight, running into a country, the resources of which are susceptible of an indefinite expansion and development, exposed to no risk of competition in all future time, commanding the travel of the lower British Provinces, and destined to be a part of the line of road which will connect the mineral wealth of Piscataquis county with tide-water, offers inducements as an investment of capital unsurpassed by any similar enterprise in New England.

Resolved—That it is expedient to procure immediately conditional subscriptions of stock that the road may be commenced as soon as the charter is obtained.

Speeches were made by many gentlemen, and the following persons were appointed a committee to procure a charter for the contemplated railroad:—Messrs. Samuel Veazie, E. L. Hamlin, G. M. Weston, Amos M. Roberts, D. F. Leavitt, W. H. McCrillis, E. C. Rawson.

The route is one of the most favorable in the country, and the road might be built, with the exception of a bridge across the Penobscot river for about \$10,000 per mile.

AMERICAN RAILROAD JOURNAL.

Saturday, March 8, 1851.

To Contractors.

OHIO AND PENNSYLVANIA RAILROAD.
Sealed proposals will be received at the office of the Ohio and Pennsylvania Railroad Company, in Pittsburgh, until Thursday, the 20th day of March next, for laying the Track from Pittsburgh to Massillon, a distance of 107 miles. Specifications and forms of proposals may be obtained at the office in Pittsburgh, for two weeks previous to the letting, on application to Solomon W. Roberts, Chief Engineer. The proposals must be in accordance with the printed forms, and addressed to the President of the Company.

WM. ROBINSON, Jr., President.
Pittsburgh, Feb. 6th, 1851.

The Stock and Money Market.

The stock market is not so buoyant as at the close of the past week. Prices are somewhat lower. This result has been produced, in part, by the large amount of new securities offering, particularly the new issue of Erie bonds. The friends of this great work, among whom are embraced a very large number of our richest and most influential men, have been reserving themselves for that sale. In addition to this, the very rapid progress of railroads, and the large sums required in their construction, have naturally created some disquiet among those at the head of our monied circles, lest the immense amount absorbed by these works should bring on a revulsion in the market. Many of them feel it necessary, that a check should be put to the rapid growth of these works, and they consequently discourage investment in them. The buyers of bonds, too, make use of every depression in the money market as a means of beating down prices. All these causes combined have tended to render the demand less active than for a few weeks past. But the causes which have produced this state of things are temporary; and as soon as the opening of the season shall have communicated its natural impetus to every kind of business, securities will share in the general improvement.

Money is not likely to be any less abundant for some time to come, on account of what is expended upon our railroads. So long as they are in progress, they call into action all the means of the country, and stimulate every kind of business; and while the expenditure is going on, money will continue plenty. There was no scarcity of money in Massachusetts so long as the construction of her roads were in full blast. Since 1840, that State must have expended nearly \$60,000,000 in railroads: equal to an annual expenditure of \$6,000,000. For a number of years, the annual amount of railroad calls in that State must have been at least \$10,000,000. The expenditure of these vast sums stimulated every kind of business in that State to an extraordinary degree. Massachusetts apparently moved forward faster than any State in the Union. Her prosperity was a proverb. This was ascribed to the influence of railroads. Experience has since shown that a great part of it was fictitious, rather than real, and that it was due to the construction, rather than to the influence of these works. Their completion put a stop to the expenditure of six or eight millions annually. This amount was so much taken away from the ordina-

ry channels of business and industry, and every kind of employment sustained by it, was left without a support. This cause alone would have been sufficient to have created a scarcity of money.—But the evil did not end here. A large portion of the available means of the State was not only *invested*, but was actually *lost*, by the unproductiveness of her railroads. Every dollar that could be raked together was put into them; and when it turned out that no small portion of this money was actually wasted, as far as income was concerned, it was this cause that produced the stringency which has so long prevailed there. If all the railroads in Massachusetts, or in which her people are interested, had paid a dividend of six per cent., and held out sufficient encouragement that they could continue to do so, no inconvenience would have been felt from the investment of \$75,000,000 of the property of the State in railroads. The reason of this is perfectly obvious. If all the investment had paid a fair dividend, every person would have had an equivalent for his outlay. He would have been as well off with his stock as he was with his money, for it would always have commanded money, or would have become the basis of a credit, which would have answered the same purpose. Money in its ordinary form is nothing but a credit, and its abundance bears in the long run an exact ratio to the amount of the property in the community, requiring to be transferred from hand to hand. A person who has an undoubted six per cent. stock, can always command money in any state of the market. There will always be a plenty of money where there are an abundance of such securities; for, as we before said, money is simply a credit, which always exists in proportion to the means upon which to base it. But in Massachusetts, some \$25,000,000 were actually lost in public works. Those who invested in them lost so much of the ability to pay, and money became scarce to them, because they had lost the means of getting it. The only way to make it abundant again was to curtail business, or to supply the vacuum created with future earnings. In Massachusetts both of these alternatives have been resorted to, and the result is, a constantly increasing ease in the market.

New England led off in the construction of railroads on a large scale. For these, Boston furnished the means. Almost every other part of the county have now undertaken these works with an equal zeal, and many portions of it to an almost equal extent. New York now stands in the same relation to the railroads of the United States, that Boston did to those of New England. The former now furnishes a great part of the money required in the construction of railroads in progress. The accumulated property of a country naturally flows to the commercial emporium, and every section of the county, and all parties who have a great work on their hands, come here for money to make their foreign purchases. As these works are in full blast, and the more important of them have secured abundant means, their progress must make money very abundant for some time to come; at least till they shall be completed. The great question then to be considered, in reference to the effect of the construction of railroads upon the money market, is the productiveness of these works. If they shall prove to be profitable investments, we have nothing to fear from their influence, because they will then become the basis of a credit, which is the equivalent of money; and, independent of this, they will increase the means of those accom-

modated by them, to a much greater extent than their cost. In such case, they can no more cause a scarcity of money, than can the purchase of a ship or a store, which yield a large return upon their cost. If, on the other hand, these investments to any considerable extent shall be *lost*, then their influence upon the market will be just in proportion to the extent of this loss.

At the present time, the amount invested by this city, and by the capitalists of the country generally, are in the bonds of companies. The calls of our most expensive roads in the Atlantic States, such for instance as the Erie and Hudson River railroads, are almost entirely upon *bonds*. Those of roads in progress, are based upon capital already paid up, so that no loss can happen to the new investments. In the new, and in the western States particularly, the wants of which are now making the greatest draught upon the capital of this city, their people can, without embarrassment, prepare the road for the iron. If the expenditure up to this point shall be entirely lost, it would neither affect those making it, nor the ordinary business of the country. Upon eastern roads, the most expensive items in railroad construction, are the lightest in the west. Now we do not see how the progress of railroads can immediately affect the money market unfavorably, unless it can be so shown, that the amount so invested, or a portion of it, will be lost, of which we cannot at present see any danger.—We do not see how the bonds, which are now the favorite mode of investment, can fail to be good; or, in other words, we see no reason to doubt that both the principal and interest which they represent, will be promptly met. Not only this, but we believe that the stock of western railroads will pay vastly better than the bonds they issue. Such is the general belief, and such is their experience so far. It cannot be otherwise. They are built at a third, or a quarter of the cost of eastern roads, and they must of necessity do a larger business. They will thus be able, not only to carry at much less rates, but will pay much better. Unless then railroads are pushed to such an extent that they will not pay, their construction has a much less tendency to cause a stringency in the market, than is commonly believed. If, on the other hand, we go into speculative movements, and start schemes that can never yield any income, the same state of things will be brought about in New York that we witnessed in Boston.

Another favorable feature in relation to our railroads in progress is the fact, that they supply to a considerable extent, by the increased value of products which they bring to market, the vacuum created in the capital of the country by their cost. Many of our expensive lines will soon pay for themselves in this way.

The means of a large number of our works are furnished by State guarantees. These securities go to Europe for investment, and instead of exhausting our means, such works directly add to our present available capital. What is true of State, is also true of a great many municipal securities, that are well known. A large amount of our best railroad bonds go abroad for investment. It may be a grave question as to the wisdom of contracting so large a foreign debt. We are merely speaking of its effect upon the market.

Such we believe to be a correct view of the effect of our present railroad investments. So long as we confine ourselves to paying lines, and keep clear of speculative schemes, we have little to fear.

This is the limit of safety; and as our roads cannot be built without the aid of our capitalists, it rests with them to say whether our progress shall be a healthy or a speculative one. With them rests the responsibility, not with our companies.

SALES OF STOCK IN NEW YORK.

	March 5. Sales.	February 28. Sales.
U. S '67 Loan.....	115½	115½
Erie R.R.....	81½	82½
Harlem R.R.....	68	69
Stonington.....	41½	42
L.I. R.R.....	23½	23½
Norwich & Wor.....	61	61
Del. & Hudson.....	130	133½
Rochester & Syracuse	110	112½
Reading.....	61½	60
Morris Canal.....	17½	20
Erie income.....	93	93½
Hudson River.....	81½	82
" " Bonds.....	103	104
Utica and Sch'y R.R.	122½	—
Canton.....	53	58
Farmers Loan.....	64½	67½

SALES OF STOCKS IN BOSTON.

	March 4.	Feb. 2.
Old Colony Railroad.....	67	68½
Boston and Maine R.R.....	106	105½
Eastern Railroad.....	103½	103½
Fitchburg Railroad.....	111½	111½
Michigan Central Railroad.....	94½	—
Northern Railroad.....	70½	72
Vermont Central Railroad.....	34½	35
Vermont and Mass. R.R.....	—	30
Western Railroad.....	106½	107
Ogdensburg Railroad.....	38	39½
Rutland Railroad.....	59	58½
Boston and Worcester Railroad.....	104½	105
Rutland Railroad Bonds.....	88	85
Ogdensburg Railroad Bonds.....	99½	99
Vermont Central R.R. Bonds.....	92½	92
Boston and Providence R.R.....	85½	86
Philadelphia, Wilm'gton & Balt.	30½	30
Concord R.R.....	55½	—
Cheshire R.R.....	—	62
Nashua & Lowell.....	—	108½
Manchester and Lawrence.....	90	90
Worcester and Nashua.....	51½	51

Whitney's Railroad.

The last Congress adjourned without even entertaining Mr. Whitney's railroad project. It has gone to the "tomb of the Capulets." Mr. Whitney's only chance of success was on its first introduction into Congress, and before the public had an opportunity of becoming acquainted with its real character.

Grants of Public Lands for Railroads.

Congress has adjourned without passing any of the reported bills in favor of granting portions of the public lands in aid of railroad projects. We expected this result. There is to our mind but little probability that Congress will make any further grants, unless a general system is adopted by which the works of all the States shall fare alike. Hardly any measure can now be carried through Congress upon its own merits. A large portion of the members must be equally interested, or measures must be carried through in *bundles*, in which each have a ticket.

We presume that the Illinois canal bill could not have been carried through unless the tariff men supposed, that by passing it, they were securing votes for their projects. Finding themselves jockeyed in this, they will hardly trust themselves to vote large quantities of land to the Western States, unless they secure something substantial in return.

We were very desirous of seeing some of the more important works in the west aided by the

general government. But we do not expect this to be done under the existing state of things.

Ohio.

Springfield and Mansfield Railroad.—A meeting was held at Mechanicsburgh on the 12th of February, of the stockholders of the Springfield and Mansfield railroad company, at which the following gentlemen were elected directors, viz:

James Turner, Reuben P. Mann, Wm. Gabriel, of Union county; Obed Hor, of Champaign county; and William Whitely and Charles Anthony of Clark county.

Charles Anthony was chosen President. Wm. Whitely was appointed acting director.

The board resolved to proceed as fast as practicable with the work, and a committee was appointed to employ an engineer. The object of this road is understood to be to form an "important link in the direct line from Philadelphia and Pitsburg to Cincinnati."

Junction Railroad—Railroad from Sankusky to Toledo.—An election was held last week to authorize a subscription by the trustees of Portland township of \$50,000 to the Junction railroad, east of Sandusky, and for \$100,000 to the road between Sandusky and the Maumec river.

For the \$50,000 subscription the vote stood as follows:—

For railroad east.....	474
Against it.....	16

Majority.....458

Upon this question all electors were entitled to vote.

On the \$100,000 subscription the vote stood thus:—

For railroad west.....	312
Against it.....	8

Majority.....304

Upon this question none but the owners of real estate were entitled to vote.

This is an extraordinary unanimity on a very important question, from which we anticipate happy consequences.—*Sandusky Clarion.*

European and North American Railway.

The Steamer Europa, it is stated, brings private letters from Mr. Howe, who recently went out to England for the purpose of enlisting the home government in aid of the above work, which leaves no doubt of the complete success of his mission.

The Nicaragua Route.

The route of intercommunication, through Central America, between the Atlantic and Pacific oceans, is found to be much more favorable than was expected. The latest information has been received by the steamer Prometheus, at New York, and is thus stated in the Express:

The route has been changed, we learn, much to the advantage of the company. As now arranged under the surveys of Mr. Childs, the chief engineer of the company, and formerly engineer of the State, the Atlantic starting point will be San Juan, and from thence to Lake Nicaragua, a distance of 84 miles. There will be but 12 miles of canal and two or three locks and dams in the river San Juan.

The Lake is navigable to the river Lagas, on the western shore, and from thence to the Pacific, the distance is but 12 miles and thirty chains, where there are two beautiful harbors and of sufficient size and depth of water to ride a large number of first class ships. The Pacific port selected,

has been San Juan del Sud, (or the San Juan of the south,) as distinguished from the Atlantic port known as San Juan. The lakes and rivers are navigable at all seasons of the year, and the transit route selected makes the distance from ocean to ocean only 130 miles, with no other interruption than the canal of 12 miles.

The new route saves 150 miles of distance and reduces the contemplated canal by the way of Realejo forty miles. The summit elevation is not over forty feet or three times less than on the line first proposed. The saving of expenses of course will be in proportion, and the route will be much more practicable than the one first surveyed. The "Director" is now running on the Lake Nicaragua, where she is doing a most profitable business, her receipts during the month of January being not less than \$8000 a week, or 32,000 during the month. Her communication is between Grenada and the Rapids of Castillo Viejo, a distance of 130 miles. The Director is commanded by Capt. Leighton, and was the first vessel ever taken over the Rapids.

Captain Vanderbilt, who returned in the Prometheus, has examined the harbors on both oceans and completed his plans for opening the line of communication. He reports his plans are nearly completed, and declares that in forty days, three iron boats will be running in connection with the Director. Two of these, the Wilmington and Delaware, are already built, and the other nearly completed. This will make a new and important communication between the two oceans, and greatly increase the business between not only California and New York, but ultimately between the two worlds.

Kanawha Cannel Coal.

We learn from the Kanawha Republican that Howland, Aspinwall & Co., have purchased from Col. Wm. M. Peyton a portion of his coal property on Cole River. It is the intention of the company to supply steamships plying between New York and the Isthmus with coal from this source. The Kanawha river will be improved for this purpose early in the ensuing spring.—*Rich. Whig.*

Alabama.

Alabama and Tennessee Railroad.—We learn that the chief engineer of this road, Mr. Troost, on his recent visit north, purchased 5500 tons of iron, sufficient to complete the road to Montevallo, a distance of 57 miles. The road bed up to this point will be in readiness to receive the iron as soon as it is shipped from England.

The great object of this company is to build their road to Rome, Geo., at which place a junction will be formed with the Georgia railroad, and by means of this with all the roads of the country. The distance from Selma to Rome is about 180 miles. This, the company propose to finish in sections of about 45 miles each year. We presume that they will find no difficulty in doing this. The route is a good one: the county traversed is one of the best in the south, the means of the people ample, and the best feeling prevails in reference to this work.

After the completion of the road to Rome, the company will then, we presume, construct a track to Gunter's, landing on the Tennessee river, and thence to the Memphis and Charleston road, for the purpose of opening a communication in a north-westerly direction. When this shall be formed, as well as the one to Rome, the above road will not only be one of the most, if not the most important in Alabama, but will always occupy a conspicuous position among the railroads of the United States.

New York.

Another Railroad.—The Buffalo Commercial Advertiser of Friday learns that a project is on foot to organize a company to construct a railroad from that city to Dunkirk, there to connect with the Dunkirk and State-line road. The new road to be a wide gauge, and connect at that city with the Hornellsville road.

Tennessee.

Chattanooga, Harrison and Cleveland Railroad.—The commissioners of this road met at Chattanooga on the 19th ult., and organized by the appointment of Col. B. R. Montgomery as President, and Col. James A. Whitesides as Secretary of the board.

John C. Gaut, of Cleveland, and B. R. Montgomery and James A. Whitesides, of this place, were appointed agents of the company to receive subscriptions of stock—to employ an engineer to make a survey and map of the road, and an estimate of the cost of its construction, and to take such other preliminary steps as may be necessary to insure a complete organization of the company, and the early construction of the road.

As the line is a short one and few difficulties of route exist, it is the intention of the agents to provide the means of survey at an early period, in order that all interested may be correctly informed as to the character of the work, its length, route, probable cost, etc.

The importance of this line as part of a system, which will not only give a connection between the eastern and western portions of our State by railroad, but also to the Nashville and Memphis road a direct connection with the line, passing eastwardly through the valleys of East Tennessee and Virginia, (and to the roads of the east a connection in time with them,) will now be fairly set before the public, and we doubt not, such an interest awakened as will carry this, an essential part of a Tennessee system of railroads, to a completion simultaneous with the other improvements.—*Chattanooga Gazette.*

Massachusetts.

Old Colony Railroad.—The following gentlemen constitute the board of directors of this company for the present year, viz:—Francis B. Crowninshield, H. Hollis Hunnewell, Wm. J. Walker, James W. Sever, Nathaniel Whiting, Alexander Holmes.

Vermont and Massachusetts Railroad.—The following are the directors of this company for the year 1851:—Thomas Whittemore, of Cambridge, John W. Swift, of Boston, Henry Chapman, of Greenfield, James Ellison of Boston, Joseph Goodhue.

Western Railroad.—The officers of this company for the ensuing year, are:—Wm. H. Swift, president, Ellis Gray Loring, clerk; Stephen Fairbanks, treasurer, and George W. Warren, auditor—a new officer, with a salary of \$2500 a year.

Wheeling Bridge.

The Pittsburg Gazette publishes a despatch to the effect that Chancellor Walworth has decided that the bridge at Wheeling must be elevated, the cost of which elevation he estimates at two hundred and eight thousand dollars. If this opinion of Commissioner Walworth who was simply appointed to take evidence in the cause, shall be sustained by the Supreme Court, the decision may be considered as involving the destruction of this magnificent work; for the necessary sum for making the proposed alteration can hardly be raised. We

differ totally from the conclusions of the commissioner that the bridge is an obstruction to navigation—except perhaps in a few instances where boats were built in Pittsburg, since the erection of the bridge, expressly with reference to their incapacity to pass under the bridge, in order to get it pulled down—and we trust it may long remain as a monument of art, and an incomparable convenience to the public.—*Winch Rep.*

Pennsylvania.

Norristown, Doylestown, and New Hope Railroad.—The Miners Journal states that preparations are making to push this road through from Norristown to New Hope, where it will connect with the Lambertville and Trenton railroad. It will also connect with the proposed People's railroad near Norristown, and form a continuous railroad from Pottsville to New York, on a much better grade than can be obtained by any other route. It would only require about 25 miles of road to be made to form this connection,—and the interests in New Jersey and in Montgomery and Bucks counties could make it—a single track could be laid down for that distance for less than \$400,000. By this route coal could be transported cheaper to New York, than by any other route of railroad now making or in progress.

Central Railroad.—The mountain section of the Central railroad is soon to be placed under contract to provide funds for this purpose, the city of Philadelphia has authorized a new subscription of thirty thousand shares, (\$1,500,000) whenever the same amount is raised from other sources, individual and corporate subscriptions. This, it is believed can be readily obtained, and will ensure the early completion of this great work.

Gorgia.

Atlanta and West Point Railroad.—This work is progressing very rapidly. The iron is already laid on about 25 miles of road upon the Atlanta portion of the line. The railroad from Montgomery, eastward, is now completed to within about 3 miles of West Point, and will in a short time be in complete running order to that place. In the meantime, the Atlanta and West Point road will be pushed forward towards its ultimate terminus with all possible despatch.

Important Discovery.

We learn from the Honesdale Democrat, that Mr. E. White of that place has succeeded in constructing a furnace by which glass is manufactured with no other fuel than anthracite coal. The result, adds the Democrat, is so completely satisfactory that Mr. J. Brookfield, the proprietor of the glassworks, has dismissed all his wood choppers, intending as soon as the fires are extinguished for the coming season, to rebuild his furnaces upon Mr. White's plan. Anthracite coal has never heretofore been used in any part of the world in the manufacture of glass.

Ohio.

Toledo, Norwalk and Cleveland Railroad Company.—A meeting of the stockholders of this company was held at Norwalk on the 18th inst. It was very generally attended from all parts of the line.

The amendments to the charter, granted by the legislature at its present session, was adopted and a general exposition of the affairs of the company and of the progress of the work, made. The contractors who have taken jobs on the western section of the road, are pushing them forward with vigor, and arrangements are being made to put the remaining part of the line under contract.

The whole distance from Cleveland to Toledo by

the way of Rawson's Mills, Oberlin, Hamford's Crossings, Norwalk, Monroeville, Bellevue and Fremont, is a fraction over one hundred and ten miles, and of this distance only fifty-six miles, not already under contract or finished, remains to be supplied. It will be filled up with all reasonable despatch.

The Michigan Southern railroad company has been protected in its chartered rights from Michigan city to the west line of Indiana, by the legislature of Indiana.

It is understood that they have succeeded, and that their line from Chicago to Toledo will suffer no delay in an early completion from this cause. This road is of great importance to the interests of the Lake Shore road through this State, and when completed, an unbroken stream of travel will pour around the southerly bend of Lake Michigan, and thence along the line of this road and the shores of Lake Erie.

Alabama.

Union Town Railroad.—By the following proceedings it will be seen that our Union Town friends have organized, preparatory to commencing operations on the railroad between there and this place. We know not what amount of stock has been raised; we presume, however, from their organising they think they can see their way clear. It would indeed, be strange, if a railroad so much needed, along a line, settled with so many wealthy planters, should fall through:

At a meeting of the board of directors—together with the stockholders generally, of the Alabama & Mississippi railroad company, held in Union Town on Saturday, the 8th of February, 1851, James L. Price was elected president of said road. A. P. Walke, secretary, and Wm. T. Moore, treasurer.

At the same meeting an executive committee was appointed consisting of R. H. Adams, J. R. John, and Col. Jno. H. Davidson.—*Selma Rep.*

New York.

Erie Railroad.—The receipts of this railroad for the month of February have been as follows:—

For passengers and mail	\$51,743 36
Freight	73,361 84
Total	\$125,105 20
February, 1850	102,212 91
Excess in 1851	\$22,892 29
The receipts in Jan. and Feb. are....	\$270,014 00
Same time, 1850	215,167 00
Excess, 25 per cent	\$54,847 00

Buffalo and Conhocton Valley Railway.—The Steuben Advocate of the 19th states, that ground on the Buffalo and Conhocton Valley railroad, was broke on that day at Bath, and that in a few days operations on the whole line from Bath to Painted Post will be commenced.

Hudson River Railroad.—The following it is stated is the proposed arrangement to connect the Hudson river railroad with the Central line running from Albany to Buffalo. The Hudson river railroad is to unite with the Western railroad in establishing a ferry from the depots on the eastern side of the river, to pier opposite the foot of Maiden-lane, from which place a bridge will be thrown over the canal basin to Maiden-lane. It is calculated that eleven minutes will be sufficient time to take passengers from the cars at Greenbush, to the cars in the Albany and Schenectady depot. In relation to this matter, the Albany Evening Journal says:

To accomplish this, and have the landing of the two ferry boats at the end of this bridge they will be required to purchase and excavate four pier lots, two above and two below the present cut. The cost of the lots and excavating the same is estimated at \$25,000, which sum they ask of the city.

New Railroad from Utica to Syracuse.—The Syracuse Star states that a company of gentlemen,

from Utica, interested in the Mohawk Valley railroad, recently visited Syracuse for the purpose of conferring upon the subject of a new railroad between the above cities, to cut off the circuit at present made by way of Rome. It is stated that the new route will have from 10 to 13 miles over the old one. It is also stated that a sufficient amount of stock has been subscribed to authorize an organization of the company, and that the articles of association have been filed in the Secretary of State's office.

Rutland and Washington Railroad.—The following gentlemen have been elected officers of the Rutland and Washington railroad for the ensuing year:—Merriett Clarke, West Poughkeepsie; D. S. Miller, New York; J. W. Baldwin, Boston; John Bradley and T. F. Strong, Burlington; Horace Clarke, Middletown, and H. N. Graves, Greenville, N. Y., directors. M. Clark, president; J. W. Bradley, vice-president; H. Clark, treasurer and superintendent, and E. S. Sunderline, clerk.

Indiana.

Madison and Indianapolis Railroad.—The following table shows the comparative receipts of this road for 8 weeks of the years 1850-51 commencing from January 1:—

	1850.	1851.
1st week.....	\$4,500	\$7,000
2d ".....	4,221	7,500
3d ".....	4,810	8,100
4th ".....	4,758	8,100
5th ".....	3,507	6,100
6th ".....	3,024	6,450
7th ".....	3,011	6,100
8th ".....	3,144	5,500
Total.....	\$30,975	\$54,850

Excess, over 75 per cent.....\$23,875

Rhode Island.

Providence and Worcester Railroad.—The following statement shows the comparative income of the Providence and Worcester railroad company, for the years 1849 and 1850:

	1849.	1850.
Receipts.....	\$217,253 76	\$202,701 10
Expenses.....	101,231 71	95,180 50
Earnings.....	\$116,022 05	\$107,520 60
De't interest paid on bonds	33,784 62	25,877 33
Net income.....	\$82,237 43	\$81,793 27

The directors say, during the past year, considering the depression of business, the road has been operated, perhaps, with as much success as could reasonably have been anticipated.

Ohio.

Mr. E. Gest, chief engineer of the Ohio and Mississippi railroad, has just returned from a visit to the advance party of engineers and a reconnoissance of the line as far west as the flat lands east of Vincennes, and reports that a far better line has been found than he or the most sanguine friends of the road had reason to suppose. It is now reduced to a certainty, that the road can be built at a reasonable cost, with grades in no case exceeding thirty-five feet per mile, curves of not less radius than twenty-five hundred feet, and that the entire distance between Cincinnati and St. Louis will not exceed three hundred and twenty-five miles. The distance from Cincinnati to Louisville is one hundred and thirty-six miles, via the Jeffersonville road, and that of Indianapolis, via the Madison road, one hundred and thirty-two. And also reports that the barren nobly lands of Jackson and Lawrence counties are in every respect equal if not superior to Warren, Butler and Montgomery counties of our own State, their topographical features being very similar, each having their fertile bottoms and uplands—that the cost of getting their wheat to market is now about 30 cents per bushel,

which accounts for their standing on the Auditor's books at the rates they do.

If under such embarrassments they pay over the average rates of the State tax, what will they do with the great highway, the Ohio and Mississippi railroad passing through them?—*Cincinnati Commercial.*

Tennessee.

Nashville and Chattanooga Railroad.—We have received the third annual report of this important work, submitted at a meeting of the stockholders, held on the tenth of December, 1850. In reference to the condition and progress of the road the President states:—

"On that portion of the road extending from Nashville to the Tennessee river, a distance of 123½ miles, two-thirds of the graduation and masonry have been done. Timbers for superstructure have been delivered on some twenty miles, nearest to Nashville. On some five or six miles the timbers have been laid down and the iron rails are now being laid on the track. You will see from the report of the Chief Engineer, that the grading of about forty-three miles has been completed; and we confidently expect, in all of next year, to get upwards of seventy miles of road done."

The means of this company, as stated in our notice of the preceding annual report of this company, are ample for the completion of the work. They may be stated as follows:—

City of Nashville subscription.....	\$500,000
" Charleston ".....	500,000
Georgia Railroad and Banking Co. subscription.....	250,000
Town of Murfreesboro' subscription.....	30,000
Individual subscription.....	780,765
Bonds with State endorsement.....	500,000
Total.....	\$2,560,765

The total amount already received is as follows:—

Collected on stock.....	\$977,368 57
Charleston city loan.....	248,000 00
Received for interest on cash loaned out, premiums, &c.....	7,963 56
Total.....	\$1,233,332 13

The following shows the amount already expended:—

For iron rails, chairs and spikes....	\$497,887 98
Graduation, masonry, bridges, engineering, depots, &c.....	529,049 43
Total expenditure.....	\$1,026,937 41

The present resources of the company are as follows:—

Cash in the hands of agents.....	\$113,438 15
" bank and cash funds.....	53,631 35
Notes of stockholders.....	39,325 22
Add the amount of individual stock unpaid.....	333,396 43
" yet to be paid by Charleston.....	252,000 00
" Georgia railroad and banking co.....	250,000 00
" company's bonds en'd. by State.....	500,000 00
Total.....	\$1,541,791 15

This work is regarded with great interest by every part of the country as an important one in carrying forward the great southern system of railroads to the Ohio river. In relation to this the report says:—

"Before closing this report, your directors deem it not out of place to offer a few remarks as to the probable prospect for business and profit on your road. The object with the friends of internal improvement in the south—one of vital importance to the whole southern section of the confederacy, inasmuch as it is one means of securing to the south a real permanent independence—is to effect a safe, speedy, certain and uninterrupted communication

between the valley of the Mississippi and the Atlantic. Various fruitless attempts have been made to secure this desirable object; but it was for your road to pierce the hitherto impassable barrier of Cumberland Mountain, and open to the produce of the rich valley of the Mississippi, a free passage to the waters of the Atlantic. In order to illustrate more fully the advantages of a system thus far so happily commenced, we think we cannot do better than to compare the distances between some suitable point on the Mississippi, and various points on the Atlantic coast. Cairo, at the confluence of the Mississippi and Ohio, is the nearest point—it is at the head of perpetual navigation, beyond all interruption either from ice in winter or low water in summer, both of which frequently prevent navigation above that point on the Mississippi and Ohio rivers. It is the great reservoir for all the agricultural products of the north and northwest—the natural point of convergence for all the railroads from New York, Boston, Philadelphia and Baltimore, as well as from Charleston and the southern Atlantic ports. Now, what is the distance, and what would be the cost of construction of lines of railway from these different cities to this point; and what the progress made by the several Atlantic cities in reaching it? Boston and New York both have continuous lines of railway to the northeastern end of Lake Erie; Philadelphia and Baltimore have extended their lines westward, but neither has yet reached the head waters of the Ohio; and it will cost more to extend any one of these lines from its western end to Cairo, than the cost of the whole line from Charleston to Cairo. When our road is done Charleston will be on the Cumberland below obstructions from ice, and if it be desirable to push the road further, there will be but about one hundred and forty miles of road to construct at a cost of about two millions of dollars, (\$2,000,000,) thus completing the entire line from Charleston to Cairo at a cost of less than \$15,000,000, whilst the least cost at which any of the more northern competitors for the trade of the valley can reach the same point, will be three times as great, or \$45,000,000!—besides this difference in cost, Charleston is almost three hundred miles nearer to this desired point. With these advantages, the line to Charleston will command all the trade she chooses, or is able to carry, and the profit accruing to the stock of our road must be great.

Moreover, the improvement of Cumberland river by slackwater navigation would cost but about four hundred thousand dollars; and such improvement would enable the boats from the upper Mississippi and its tributaries, and which now have to tranship their freight at St. Louis, to bring their grain, pork, tobacco, &c., to Nashville, ship them to the seaboard, and in return for the produce thus quickly and economically delivered on the south Atlantic, take back supplies of imported goods to their homes on the upper Mississippi, Missouri, Illinois, and other tributaries of the great river.

It seems, therefore, evident to us, that this line of improvement is destined to produce a radical change in the business transactions of the Union; giving, as it will, to the Southern States the carrying trade of the great valley of the west, which has hitherto been monopolized by the northern lines of improvement. Then if Charleston, as is at present indicated, should assert her proper position as a commercial city, and establish lines of ocean steamers to and from the principal ports of Europe, the merchant or planter of the Mississippi valley need go no farther than the "emporium of the south" to ship his produce or receive his imported cargo."

Below we give a portion of the report of the Mayor of Charleston, S. C., who, in behalf of that city, made a very minute examination of the line, and of the whole work in progress. It presents a very condensed statement of the general characteristics of the route:—

The road commencing at Nashville, in Davidson county, continues through Rutherford county, through Bedford, (in which is the branch to Shelbyville;) then 2½ miles through Coffee county; then Franklin, in State of Tennessee; it then cuts the northeastern corner of Jackson county, in the State of Alabama; thence it returns to Marion

county, in Tennessee; thence it runs twice into Dade county, in the State of Georgia; thence out again into Hamilton county, Tennessee, where it finds its terminus at the junction of the Georgia State railroad, at Chattanooga, formerly known as Ross' Landing. At this place a branch track forks off down to the edge of the Tennessee river, which rolls in front of that town. At the junction of the Georgia road, (Western and Atlantic road) the company own a site of 5½ acres, adjoining that of the Georgia road, and have arranged to use their passenger and freight depots in common; thus establishing a straight track into the Georgia line and securing the utmost dispatch, uninterruptedly, to the Nashville and Chattanooga railroad trains.

Upon examining the alignment of the road, it will be found there is only 16 per cent of curvature, including the mountain location, which is necessarily nearly all curved. If the location, exclusive of the mountain be taken, it shows a line, 90 per cent of which is perfectly straight.

It may at this stage of the description be interesting to you, gentlemen, that the passage of the main chain of the Cumberland Mountains, and the ascent of the first bench of the mountain from the waters of Duck river, controlled the entire location of the road. You may not be aware, that for 300 miles extending from the Cumberland Gap to where the mountain abuts on the Tennessee river, the main crest of the mountain is unbroken, except at Montgomery's Gap, in the 91st section. The mountain maintains an elevation of 2,000 feet above the sea, except at the point above mentioned, where a depression of 700 feet occurs, and at this point, the ridge is narrow enough to admit of a tunnel (2,200 feet long,) at an elevation of little more than 1,100 feet above the sea. This gap, then, of the Cumberland, furnished the only opportunity to concentrate that elevation, (viz., 1,100 feet,) in a short distance, to be surmounted by an assistant locomotive. The two great features of the location at Montgomery's Gap, are, first, that the total elevation is 900 feet less than at any other point, and second that the whole of the extraordinary elevation is concentrated within one and a half miles on the northwestern side, and four and a half miles on the southeastern side of the mountain, where an assistant engine can with facility obviate the difficulty, and the same engine could be employed during the interval of passing the trains in collecting and carrying the coal cars to the central depot, opposite Winchester.

At no other point in the mountain is there a ridge sufficiently narrow to admit of a tunnel; nor is there any depression in the ridge, so that the total rise and fall had to be distributed on each side of the mountain, disjoined by its wide summit.

It is manifest, therefore, that an attempt to cross the mountain at any other point would have prevented—in the 900 feet of elevation to be overcome—in the great amount of curvature to which such a line thrown on the mountain sides, must have been subjected—in the enormous cost at which alone it could be obtained—obstacles which would have rendered it impracticable.

This road will be the first, and I presume, the only one which will run across the Cumberland Mountain, to tap the Mississippi valley. You will have now seen that there is no other practicable passage, except at the tunnel, (or 91st section,) and the company are secured by their charter, from any other railroad "being built, cut or constructed, in any way or manner, or by any authority whatsoever, running laterally within 20 miles of this route, unless by said company, or with the consent of the board of directors thereof, for the time being."

The total length of straight line is 134 miles and 1478 feet.

The total length of curved line is 25 miles and 782 feet.

The total length of straight and curved line is 159 miles and 2260 ft.

The total distance from depot at Nashville to depot at Chattanooga is 151 miles less 1100 feet.

The total length of the Shelbyville branch is 7 miles and 5060 feet.

The gradients on the main line in no instance exceed 50 2-10 feet per mile on straight lines and 44 9-10 feet on curved, except on the subdivision crossing the Cumberland Mountain (in the Charles-

ton division,) there it was necessary to resort to a gradient of 105 6-10 feet per mile, and will occasionally the use of a powerful assistant locomotive engine to enable the company to overcome it without dividing the trains. From a table exhibiting the gradients of each division, viz: the Nashville, the Winchester, the Chattanooga and Shelbyville branch, divisions, I find that the maximum grade on the Nashville and Winchester divisions ascending eastwardly is 50 2-10 feet per mile, while in ascending westwardly it is only 44 9-10 feet per mile, making a difference of 5 3-10 feet per mile in favor of the western bound trains.

Since the commencement of this enterprise, the work has been pressed forward with all the vigor that the most indomitable energy, based by abundant means, could impart. Every part of the line is making the most rapid progress possible, and we may look for the completion of the entire road at an early day.

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ENGINEERS.

Atkinson, T. C.,
Alexandria and Orange Railroad, Alexandria, Va.

Clement, Wm. H.,
Little Miami Railroad, Cincinnati, Ohio.

Cozzens, W. H.,
Engineer and Surveyor, St. Louis, Mo.

Alfred W. Craven,
Chief Engineer Croton Aqueduct, New York.

Floyd-Jones, Charles,
Alton and Sangamon Railroad, Alton, Illinois.

Gay, Edward F.,
Columbia and Philadelphia Railroad, Philadelphia Pa.

Gzowski, Mr.,
St. Lawrence & Atlantic Railroad, Montreal, Canada.

Grant, James H.,
Nashville and Chattanooga R. R., Nashville, Tenn.

S. W. Hill,
Mining Engineer and Surveyor, Eagle River, Lake Superior.

Holcomb, F. P.
Southwestern Railroad, Macon, Ga.

Latrobe, B. H.,
Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,
Buffalo and Conhocton Valley Railroad, Bath, N. Y.

Morris, Elwood,
Schuylkill Navigation, Schuylkill Haven, Pa.

Nott, Samuel,
Lawrence and Manchester Railroad, Boston,

Prichard, M. B.,
East Tennessee and Georgia R. R., Cleveland, Tenn.

W. Milnor Roberts,
Bellefontaine and Indiana Railroad, Marion, Ohio.

Roberts, Solomon W.,
Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Sanford, C. O.,
South Side Railroad, Virginia.

Steele, J. Dutton,
Pottstown, Pa.

Trautwine, John C.,
Civil Engineer and Architect, Philadelphia.

Tinkham, A. W.,
United States Fort, Bucksport, Me.

Troost, Lewis,
Alabama and Tennessee Railroad, Selma, Ala.

Whipple, S.,
Civil Engineer and Bridge Builder, Utica, N. Y.

HOTELS.

Exchange Hotel,
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BUFFALO, N. Y.
BY.....**FISK & SPERRY,**
Late of Delevan House, Albany.

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JOHN P. HALL & CO.,
161 Main st., Buffalo, (Commercial Advertiser Build.)
Are prepared to execute all kinds of Lithography in good style and at reasonable rates. Particular attention will be paid to Engraving Railroad Maps, Engineer's Plans and drafts, etc., and orders in this line are respectfully solicited.

Boston Locomotive Works,

—Late Hinkley & Drury—
No. 38 Harrison Avenue,
BOSTON.

Locomotive and Stationary Steam Engines; Boilers; Iron, Brass, Copper and Composition Castings; Coppersmith's Work.

VAN KURAN RAILROAD WHEELS:
Wheels and Axles fitted, and all kinds of Railroad Machinery furnished at short notice.

Cumberland, (Md.) Coals for Steaming, etc.

ORDERS RECEIVED FOR AND FILLED
by J. COWLES, 27 Wall St., N. Y.

Cumberland Steam Coal,

FROM THE
FROSTBURG MINES, MD.
H. A. TUCKER,
Agent of Frostburg Coal Co.
No. 50 Wall Street, New York.

Henry I. Ibbotson,

IMPORTER of Sheffield and Birmingham Goods.
Also, Agent for the Manufacture of Telegraph Wire.
218 PEARL ST., NEW YORK.

Charles T. Jackson, M. D.,

STATE ASSAYER, late Geologist to Maine, Rhode Island, New Hampshire, and the United States, offers his services to his friends and the public in making any Chemical, Mineralogical or Geological researches that may be required for the improvement of Agriculture and the Manufacturing Arts. Particular attention will be paid to the exploration of mines and to assaying of ores of the metals.

State Assayer's office, 31 Somerset st.
Boston Sept. 3, 1850.

STEEL AND FILES.**R. S. Stenton,**

20 CLIFF STREET, NEW YORK,

AGENT FOR

J. & RILEY CARR,

BAILEY-LANE WORKS, SHEFFIELD,
Manufacturers of Cast, Shear, German, Blister, and
Spring Steel,

Of all descriptions, Warranted Good.

FILES.

Manufacturers of Machinists' Warranted Best Cast Steel Files, expressly for working upon Iron and Steel, made very heavy for recutting.

A full Stock of Steel and Files at all times on hand. 6m4

Walter R. Johnson,

CIVIL AND MINING ENGINEER AND ATTORNEY for Patents. Office and Laboratory, F St., opposite the Patent office, Washington, D. C.

Dudley B. Fuller & Co.,

IRON COMMISSION MERCHANTS,
No. 139 GREENWICH STREET,
NEW YORK.

Manning & Lee,

GENERAL COMMISSION MERCHANTS,
NO. 51 EXCHANGE PLACE,
BALTIMORE.

Agents for Avalon Railroad Iron and Nail Works. Maryland Mining Company's Cumberland Coal 'CED'—'Potomac' and other good brands of Pig Iron.

Samuel Kimber & Co.,

COMMISSION MERCHANTS

WILLOW ST. WHARVES, PHILADELPHIA.

AGENTS for the sale of Charcoal and Anthracite Pig Iron, Hammered Railroad, Car and Locomotive Axles, Force Pumps of the most approved construction for Railroad Water Stations and Hydraulic Rams, etc., etc.

July, 27, 1849.

James Herron, Civil Engineer,

OF THE UNITED STATES NAVY YARD,
PENSACOLA, FLORIDA.

PATENTEE OF THE

HERRON RAILWAY TRACK.

Models of this Track, on the most improved plan may be seen at the Engineer's office of the New York and Erie Railroad.

PLUSHES

FOR

Railway Cars & Omnibuses.**F. S. & S. A. MARTINE,**

112 WILLIAM ST., NEAR JOHN.

ARE now receiving a large and complete assortment of Plain and Figured PLUSHES, of their own importation, which will be sold at the lowest market price, viz: Crimson, Maroon, Scarlet, Green, Blue, Purple, etc.

ALSO—CURLED HAIR, the best manufactured in market.

To Railroad Companies, Machinists, Car Manufacturers, etc., etc.**CHARLES T. GILBERT,**

NO. 80 BROAD ST., NEW YORK,

IS prepared to contract for furnishing at manufacturer's prices—
Railroad iron,
Locomotive Engines,

Passenger and Freight Cars,

Car Wheels and Axles,

Chairs and Spikes.

Orders are invited; and all inquiries in relation to any of the above articles will receive immediate attention.

Manufacture of Patent Wire ROPE AND CABLES,

For Inclined Planes, Suspension Bridges, Standing Rigging, Mines, Cranes, Derrick, Tillers, &c., by
JOHN A. ROEBLING, Civil Engineer,
TRENTON, N. J.

FORGING.**Ranstead, Dearborn & Co.,**

MANUFACTURERS OF

LOCOMOTIVE CRANKS AND CAR AXLES,

ALSO

WROUGHT IRON SHAFTING,

And All Kinds of Hammered Shapes.

Office 25 Foster's Wharf, Boston.

Samuel D. Willmott,

MERCHANT, AND MANUFACTURER OF
CAST STEEL WARRANTED SAWS,
—AND FILES—

IMPORTER OF THE

GENUINE WICKESLY GRINDSTONES

NO. 8 LIBERTY STREET,

NEW YORK.

Railroad Instruments.

THEODOLITES, TRANSIT COMPASSES, and Levels, with Fraunhoffer's Munich Glasses, Surveyor's Compasses, Chains, Drawing Instruments, Barometers, etc., all of the best quality and workmanship, for sale at unusually low prices, by
E. & G. W. BLUNT,

No. 179 Water St., cor. Burling Slip.

New York, May 19, 1849.

IRON.**Iron.**

Pig Iron, Anthracite and Charcoal; Boiler and Flue Iron, Spring and Blistered Steel, Nail Rods, Best Refined Bar Iron, Railroad Iron, Car Axles, Nails, Stove Castings, Cast Iron Pipes of all sizes, Railway Chairs of approved patterns for sale by
COLEMAN, KELTON & CAMPBELL,

109 N. Water St., Philadelphia.

Stickney & Beatty,

DEALERS IN IRON AND IRON MANUFACTURERS.

AGENTS for the Balt. City Rolling Mill, from which establishment they are prepared to furnish Ellicott's round, square, and flat bar iron, puddled and charcoal boiler plates and billet iron—also agents for the sale of the Laurel, Gunpowder and Locust Grove (Balt.) forge pig irons, Locust Grove and Laurel Irons for car wheels, Caledonian boiler blooms made from cold blast iron, Old Colony and anti-Eatam nails, Wm. Jessop & Son's steel, Coleman's blister steel and nail rods, sheet, hoop, band, oval and common English iron.

Nos. 18 and 20 South Charles st., Baltimore.

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. J. F. WINSLOW, President

Troy, N. Y.

ERASTUS CORNING, Albany

WARREN DELANO, Jr., N. Y.

JOHN M. FORBES, Boston.

ENOCH PRATT, Baltimore, Md

November 6, 1848.

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phoenix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehanna river; which two establishments are now turning out upwards of 1800 tons of finished rails per month.

Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.

REEVES, BUCK & CO.

45 North Water St. Philadelphia.

March 15, 1849

LAP—WELDED WROUGHT IRON TUBES

FOR

TUBULAR BOILERS,

FROM ONE AND A QUARTER TO SEVEN INCHES IN DIAMETER.

THE ONLY Tubes of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER & SON, Patentees,
23 Platt street, New York.

Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc., Iron.

THOMAS B. SANDS & CO.,

73 New street,
New York.

February 3, 1849.

Iron Store.

THE Subscribers, having the selling agency of the following named Rolling Mills, viz: Norristown, Rough and Ready, Kensington, Triadelphia, Pottsgrove and Thorndale, can supply Railroad Companies, Merchants and others, at the wholesale mill prices for bars of all sizes, sheets cut to order as large as 58 in. diameter; Railroad Iron, domestic and foreign; Locomotive tire welded to given size; Chairs and Spikes. Iron for shafting, locomotive and general machinery purposes; Cast, Shear, Blister and Spring Steel; Boiler rivets; Copper; Pig iron, etc., etc.

MORRIS, JONES & CO.,

Iron Merchants,

Schuylkill 7th and Market Sts., Philadelphia.

August 16, 1849.

1y33

Glendon Refined Iron.

Round Iron, Band Iron, Hoop Iron,
Square " Flat " Scroll "

Axles, Locomotive Tyres,

Manufactured at the Glendon Mills, East Boston, for sale by

GEORGE GARDNER & CO.,

5 Liberty Square, Boston, Mass.

Sept. 15, 1849.

3m37

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for rail roads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.

JOHN F. WINSLOW, Agent.

Albany Iron and Nail Works, Troy, N. Y.

The above Spikes may be had at factory prices, of Erastus Corning & Co Albany; Merritt & Co., New York; E. Pratt & Brother, Baltimore, Md.

Bowling Iron. Stamped B.O.

Railway Tire Bars Rivet Iron
Locomotive and other Axles Locomotive Frame do
Boiler Plates Bars.
and every other description of this superior Iron.

The subscribers, agents for the sale of Bowling Iron, are prepared to execute orders for importation, especially for railway and machinery uses, with despatch from the manufacturers.

RAYMOND & FULLERTON, 45 Cliff st.

**Ibbotson, Brothers & Co's
CELEBRATED CAST STEEL**

AND

Best Cast Steel Royal Improved Files, well known as better adapted for Engineers' and Machinists' purposes than any now in use in the United States.

Every description of Square, Octagon, Flat and Round Cast Steel, Sheet, Shovel and Railway Spring Steel, etc., and Steel to order for any purposes—manufactured at their works in Sheffield—and universally known by the old stamp "Globe."

HENRY I. IBBOTSON, Agent,
218 Pearl st., New York.

**Railroad Iron.
SPIKES.**

Wrought Iron CHAIRS, New Pattern.

THE Undersigned continues to contract, as usual, for the above articles. The reputation already acquired for their excellent quality is a guarantee that strict attention shall continue to be paid to the wants and interests of purchasers.

CHARLES ILLIUS,
20 Beaver St., New York

**WILLIAM JESSOP & SONS'
CELEBRATED CAST-STEEL.**

The subscribers have on hand, and are constantly receiving from their manufactory,

PARK WORKS, SHEFFIELD,
Double Refined Cast Steel—square, flat and octagon. Best warranted Cast Steel—square, flat and octagon. Best double and single Shear Steel—warranted. Machinery Steel—round.

Best and 2d gy. Sheet Steel—for saws and other purposes.

German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.

Genuine "Sykes," L Blister Steel.

Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by

WM. JESSOP & SONS,

91 John street, New York.

Also by their Agents—

Curtis & Hand, 47 Commerce street, Philadelphia.

Alex'r Fullerton & Co., 119 Milk street, Boston.

Stickney & Beatty, South Charles street, Baltimore.

May 6, 1848.

Railroad Iron.

B. O. Railway Tires, Railway Wheels,
Scotch Pig Iron, Tin Plates and Banca Tin,
Muntz's Patent Metal Sheathing,
Baltimore Copper.

Contracts for Rails made on behalf of the manufacturers, for delivery at any ports in the United States, at fixed prices.

Bowling Tires and Tire Bars and Scotch Pigs imported to order.

Muntz's Ship-sheathing, and a general stock of Tin Plates and Banca Tin in store, and for sale by

RAYMOND & FULLERTON, 45 Cliff st.

**IRONDALE PIG METAL, MANUFACTURED
and for sale by the Bloomsburg Railroad Iron Co.**

LINDLEY FISHER, Treasurer.

75 N. Water St., Philadelphia.

**Faggotted Car and Engine
Axles**

FORGED by RANSTEAD, DEARBORN & Co.,
Boston, Mass.

These Axles enjoy the highest reputation for excellence, and are all warranted.

Railroad Iron.

3,000 TONS C. L. MAKE 63 lbs. per yard,
now landing and to arrive.

Also contracts made for future delivery of above superior make English Iron.

300 Tons Banks Best Iron, Round, Square and Flat.
200 " English Bar " " " "

10 " 9-16 Square Iron for Railroad Spikes.

For sale in lots to suit purchasers by

DAVID W. WETMORE.

New York, March 26, 1850.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

**JOHNSON, CAMMELL & Co's
Celebrated Cast Steel,**

AND

ENGINEERING AND MACHINE FILES,
which for quality and adaptation to mechanical uses, have been proved superior to any in the United States. Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cyclops Steel Works Sheffield.

JOHNSON, CAMMELL & CO.,

100 William St., New York.

November 23 1849.

Bowling Tire Bars.

40 Best Flange Bars 5½x2 inches, 11 feet long.
40 " 5½x2 " 7 feet 8 in. long.
40 " Flat " 6x2 " 11 feet long.
40 " 6x2 " 7 feet 8 in. long.

Now in store and for sale by

RAYMOND & FULLERTON,

45 Cliff street.

**Wheel, Forge and Foundry
Iron.**

LOCUST GROVE Wheel Iron of great strength and superior chilling property.

Balt. Charcoal Forge Iron, from Patuxent, Curtis Creek and Gunpowder furnaces.

Elkridge Foundry Iron, of superior strength and softness. Anthracite and Charcoal Iron from Pennsylvania and Virginia. Gas and Water Pipes, Lamp Posts from Elkridge furnace.

LEMMON & GLENN,

62 Buchanan's Wharf, Baltimore.

**S. S. Keyser & Co.,
IRON WAREHOUSE,**

Corner of South and Pratt Streets,

BALTIMORE, MD.

Selling Agents for the Rough and Ready Bar Iron and Elk Boiler and Flue Iron Rolling Mills, Sarah and Taylor Furnaces, and Wrightsville Hollow Ware Foundry, and Dealers in Bar and Sheet Iron, and Cast, Sheer, German, Blister, Spring and Electrodesed Steel, etc., etc.

Smith & Tyson,

GENERAL COMMISSION MERCHANTS,

No. 25 South Charles St., Baltimore, Md.

AGENTS for the Celebrated Columbia Pig Iron, suitable for Car Wheels and Chilled Rolls.

Columbia refined Charcoal Blooms; Refined Charcoal Juniata Billet Iron for Wire; Refined Iron for Bridging, of great strength; Cut Nails, Spikes, and Brads; Railroad Spikes and Wrought Chairs. 22tf

Tredegar Iron Works.

**ROLLING MILL FOUNDRY AND MACHINE
SHOPS.** The undersigned continues to manufacture at his Works in this city (from best charcoal metal) Bar Iron of every description, embracing—

Rounds and Squares, from ½ to 5 inches diameter. Flats, from ½ to 7 inches, all thicknesses.

Bands and Scrolls, all sizes. Boiler plate and Plough Iron. Railroad and Locomotive Axles and Tires. Locomotive Frames, Spikes and Plates. Hoops, Ovals, Half Ovals, Half Rounds, Angle, T, L, and indeed every description of Iron usually manufactured, all of which he warrants to be equal to any made in this country.

He also manufactures at his Foundry and Machine Shops all descriptions of Railroad Work, say, Locomotives, Railroad Wheels and Axles complete and ready for the road, Railroad Chairs, etc. Also, Marine and Stationary Engines all sizes, Sugar mills and Engines, Horse mills, and every kind of Machinery usually required for the operations of the country.

He has paid particular attention to getting up machinery, etc., for Gold Mine operations, and those in want of such work might find it to their advantage to give him a call.

J. R. ANDERSON.

Richmond, Va., Sept. 10, 1850.

CUT NAILS OF BEST QUALITY, BAR IRON

(including Flat Rails) manufactured and for sale by

FISHER, MORGAN & CO.,

75 N. Water St., Philadelphia.

Car Wheel Iron.

100 Tons "Columbia" No. 2 Cold Blast Charcoal Iron.

300 Tons "Salsbury" No. 1, do. do.
For sale by CHARLES T. GILBERT,

No. 80 Broad st.

New York, Sept. 21, 1850.

Railroad Spikes.

THE subscribers are prepared to make and execute contracts for Railroad Spikes of a superior quality, manufactured by the New Jersey Iron Company, at Boonton.

DUDLEY B. FULLER & CO.

139 Greenwich st. corner of Cedar.

Railroad Iron.

1650 Tons, weighing about 61 lbs. per yard, 40 tons, weighing about 52 lbs. per yard, and 825 tons, weighing about 53½ lbs. per yard, of the latest and most approved patterns of T rail, for sale by

BOORMAN, JOHNSTON & CO.,

119 Greenwich street.

New York, Aug. 26, 1850.

N.B.—B. J. & Co are also prepared to take contracts for English rails, delivered in any of the Atlantic ports of the United States.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract to deliver Rails of superior quality, and of any size or pattern, to any ports of discharge in the United States.

COLLINS, VOSE & CO.,

74 South St.

New York, June 1, 1850.

Spikes, Spikes, Spikes.

ANY person wishing a simple and effective Spikes, Machiae, or a number of them, may be supplied by addressing

J. W. FLACK,

March 6, 1850

Troy, N. Y.

Railroad Iron.

2000 Tons, weighing 58 pounds per lineal yard, of the most approved pattern of T rails, in store and to arrive, for sale by

COLLINS, VOSE & CO.,

74 South St.

New York, June 1, 1850.

Railroad Spikes, Boiler Rivets, etc.

THE Subscribers, Agents for the sale of James S. Spencer's, Jr., Railroad and Boat Spikes, Boiler Rivets, and Wrought Iron Chairs for Railroads, made at his Works near this city, will execute all orders with promptness, despatch, and of the best quality.

ALSO IMPORTERS of English refined and Merchant bar Iron; Extra refined Car and Locomotive Axles (from ¾ to 6½ inches in diameter); B. O. Locomotive Tire (welded by Baldwin). Also, supply Boiler and Flue Iron cut to pattern or otherwise—Spring, Shear, and Cast Steel, etc., etc., etc.

T. & E. GEORGE.

Philadelphia, November 14, 1850.

Railroad Iron.

THE UNDERSIGNED, HAVING made arrangements abroad, are prepared to contract for the delivery of Foreign rails, of approved brands upon the most favorable terms.

They will also make contracts for American rails, made at their Trenton works, from Andover Iron, in whole or in part, as may be agreed upon.

They are prepared to furnish Telegraph, Spring and Market Wire; Braziers and Wire Rods; Rivets and Merchant Bars to order, all made exclusively from Andover Iron. The attention of parties who require iron of the very best quality for special purposes, is respectfully invited.

COOPER & HEWITT,

17 Burling Slip, New York.

February 15, 1850.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract for the delivery of English, Welsh and Scotch Rails, of any pattern and weight, also for every description of English, Welsh, Scotch, and Swedish Iron, Railway Chairs and Spikes, Rivets, Bolts, Nuts, Washers, Chain Cables, Anchors, Tin Plates, German Spelter, Iron Castings, and every description of Machinery.

WILLIAM BIRD & CO.,

Iron and Tin Plate Merchants,

44 Wall st., New York.

And at 5 Martin's Lane, City, London,

and 140 Buchanan st. Glasgow.

July 27th, 1850.

Railway Iron.

THE Subscribers will contract to deliver, in the course of the ensuing Spring and Summer, the best English Rails, made by a particular specification, and of any pattern required.

DAVIS, BROOKS & CO.,
68 Broad st.

On hand for sale, English rails of 58 lbs. to the yard, made by particular specifications.
January 10, 1851. 2m

To Iron Masters.

WANTED—A Person to take charge of a Blast Furnace for Smelting Iron, for further information apply to
COLLINS, VOSE & CO.,
74 South street.

Railroad Iron for Sale.

THE Mansfield and Sandusky City Railroad Co. have on hand from twelve to fifteen hundred tons of American Flat Bar Railroad Iron, weighing 38 lbs. to the lineal yard, which they offer for sale at reasonable rates.

The iron has been in use about four years, and is sound and in good condition. It is $2\frac{1}{2}$ by $\frac{1}{2}$.

It will be ready for delivery at short intervals between the opening of navigation in the spring and the last September next.

For further particulars inquire at the office of the company at Sandusky City, Ohio.

C. G. FORBES, President.

December 21, 1850.

Railroad Iron.

THE "Montour Iron Company" is prepared to execute orders for Rails of the usual patterns and weights, and of any required length not exceeding 30 feet per rail. Apply at the office of the Company,
No. 73 South 4th st., Philadelphia,

Or to the Agents,

CHOUTEAU, MERLE & SANFORD,
No. 51 New st., New York.

September, 1850.

American Railroad Iron.

1000 Tons, weighing 50 lbs. per yard, manufactured by Reeves, Abbott & Co., at the Safe Harbor Iron Works, and now lying in yard at Brooklyn, for sale by

CHOUTEAU, MERLE & SANFORD,
No. 51 New street.

Tubes.

The undersigned are in direct communication with the Birmingham Patent Lap Welded Iron Tube Company, for the sale of their very excellent and superior Boiler and Gas Tubes in large or small quantities.—These Tubes are sold very extensively in England and on the continent of Europe are sold exclusively by

WM. BIRD & CO.,
Iron and Tinplate Merchants,
44 Wall st., New York
5 Martin's Lane, City, London,
and 140 Buchanan st., Glasgow.

Wanted.

WANTED—A Situation in a Civil Engineer's office, by a Young Gentleman from Scotland—has had six years' experience as a practical Draughtsman, Architect, Surveyor, and Leveller in one of the principal civil engineering establishments in Scotland. First rate reference given. Apply to Messrs. Cooper & Hewitt, 17 Burling Slip, or to

JAS. SNEDDON,
23 Harrison st.

Wanted.

A Second-hand Locomotive of 10 to 15 tons weight. A note, giving lowest terms, addressed to A. B., Railroad Journal Office, will receive attention.
January 9, 1850.

India-rubber for Railroad Cos.

RUBBER SPRINGS—Bearing and Puller—Fuller's Patent—Hose from 1 to 12 inch diameter Suction Hose. Steam Packing—Lum 1-16 to 2 in thick. Rubber and Gutta Percha Bands. These articles are all warranted to give satisfaction, made under Tyer & Helm's patent, issued January, 1849. No lead used in the composition. Will stand much higher heat than that called "Goodyear's," and is in all respects better than any in use. Proprietors of rail roads do not be overcharged by pretenders.

HORACE H. DAY,
Warehouse 23 Courtlandt street
New York, May 21, 1849.

Great Work on Bridge Building, etc., etc.

JUST published in medium folio, One Dollar, 75 cts. to subscribers.

Part IV of a "THEORETICAL AND PRACTICAL TREATISE ON THE CONSTRUCTION OF BRIDGES IN STONE, IRON AND WOOD," including the Equilibrium of Arches, the mathematical principles of the Oblique Arch, Suspension Arch, etc., Construction of Foundations in Water, Centering, Oblique Arches, etc., the application of Iron to Railroad Structures, Practical Tunnelling, Suspension Bridges, etc.; illustrated by numerous accurately executed Plans, Elevations, Sections and Details of Stone, Iron and Wood Bridges, Viaducts, Tunnels, Culverts, Machines, etc., constructed by the most eminent Architects and Engineers in Europe and the United States, and numerous Original Designs for Bridges, Viaducts, Culverts, etc. The whole calculated to meet the exigencies of Engineers, and assist Draughtsmen, Bridge Builders, Mechanics and Students. By George Duggan, Architect and Civil Engineer.

The present part contains beautifully executed plans, elevations, sections, and details of the Iron Lattice Bridge 140 feet span over the canal in the suburbs of Dublin on the line of the Dublin and Drogheda R.R., Plans, elevations and sections of the Timber Bridge over the Schuylkill, at Market st., Philadelphia, with Arches 160 and 190 feet span. Plans, elevations and sections of a Timber Bridge with Arches 155 and 200 feet span over the Delaware. Also, plans, elevations, sections and details of Lattice and Frame Wood Bridges, explanatory of Nathaniel Towns and Colonel S. H. Long's methods of constructing Bridges of Wood, with the continuation of the Articles on Cofferdams, Concrete, Limes, Mortars, Cements, etc.

Published by George Duggan, 300 Broadway, New York, to whom all communications should be addressed and subscriptions forwarded.

Parties remitting Mr. Duggan \$5. and the remainder \$4 when they have been supplied with the first six parts of the "Theoretical and Practical Treatise on Bridge Building, etc." shall receive it monthly as published. To those making Mr. Duggan a present remittance of \$9, the work will be forwarded post free to any part of the United States.

Great American Engineering

AND MECHANICAL WORK, just published in medium folio One Dollar, 75 cts. to Subscribers.

Part X. of "Specimens of the Stone, Iron & Wood Bridges, Viaducts, Tunnels, Culverts, &c., &c., of the United States Railroads." By George Duggan, Architect and Civil Engineer.

The present part contains beautifully executed plans, elevations, and sections of the Timber Bridge with Arches 136 feet span, over the Mohawk river, on the line of the Utica and Schenectady R.R. Plans elevations, sections and isometrical views of Timber Piers 100 feet high, a Timber Bridge of 55 feet span, and Ice Breakers, on the line of the Little Schuylkill and Susquehanna R.R.

Also plans, elevations, sections, isometrical views and details of an Iron Bridge 356 feet long, with Arches 81 feet span, erected by the N. York Iron Bridge Co. over Moores Creek, on the line of the Virginia Central R.R., and plans, elevations and sections of an Iron Plank Road Bridge 160 feet span, erected over Buffalo creek by the same company, with a description of Col. Long's method of constructing Bridges in Iron, and an explanation of the causes that led to the failure of the Iron Bridge 60 feet span, near Lackawaxen, on the line of the New York and Erie R.R., at midday, on the 31st July last, by which several lives were lost, and a great amount of property destroyed.

Published by GEORGE DUGGAN,
300 Broadway, New York.
To whom all communications should be addressed and subscriptions forwarded.

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.
August, 16, 1849. 6m33

For Sale.

TWO Locomotive Engines—10½ tons weight, built by Baldwin. Also Four Eight-wheeled Passenger Cars, with side seats, all in good running order. Apply to WM. E. MORRIS,
Office of Philad., Germantown & Norristown Railroad Co., 9th and Green sts., Philadelphia. 3m5

TO RAILROAD COMPANIES, CAR MANUFACTURERS, etc.

THE Undersigned hereby gives public notice, that the Commissioner of Patents, pursuant to his decision in relation thereto, on the 6th day of October, 1850, issued to him a Patent for the sole right to manufacture, and exclusive use of the INDIA RUBBER CAR SPRING, on account of priority of invention of said Spring. F. M. RAY
New York, Oct. 23, 1850.

Iron Trade of Pennsylvania.

DOCUMENTS and Statistics relating to the Manufacture of Iron in the State of Pennsylvania—giving a history of the manufacture from its commencement to this date, illustrated by diagrams. Also tables giving the address and capacity of every establishment in the State. Prepared by direction of the late convention of the trade held in Philadelphia. For sale by

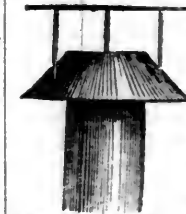
LINDSAY & BLACKISTON, Philadelphia.
FIELDING LUCUS, Jr., Baltimore.

HENRY G. NICHOLS, 79 Water st., N. Y.
or at this office—price \$1 00.

It will be sent by mail to any order enclosing the money, and post paid.

Emerson's Patent Ventilator.

ADAPTED to Cars, Engine houses, Public Halls, Factories, Churches, School Houses, Dwellings, Chimney Flues, etc.



This Ventilator is stationary, and cannot get out of order. It is constructed in such conformity to certain ascertained laws of pneumatics, as to insure a constant draft outward, whatever may be the changing direction of the wind. The Massachusetts Mechanic Association have awarded a gold medal to the inventor, and the Manufacturers have already disposed of over 3,000 of the article. Manufactured and sold by
CHILSON, ALLEN, WALKER & Co.,
351 Broadway, New York.

Providence Tool Co.,

MANUFACTURERS OF

Plane Irons, Tooth Irons, Soft Moulding and Rubber Irons, Cornice Irons, Plow Bits, and Planing Machine Knives:

NUTS, WASHERS AND BOLTS.

—ALSO—

PLATE HINGES AND PICK AXES.

They are prepared to execute orders for all descriptions of Cold Punching and Job Work.

WM. FIELD, Agent. RUFUS WATERMAN, Treas.
PROVIDENCE, R. I.

Lovegrove's Patent Cast Iron Water and Gas Pipes.

THE Subscriber, the Inventor and Patentee of the Centrifugal mode of giving form to metallic substances while in a molten state, is preparing to make Cast Iron Water and Gas Pipes, of any dimensions, at prices much lower than they can be made in the old manner, and the pipes warranted to stand a pressure of three hundred pounds to the square inch, and to be soft enough to drill. Steam Engines and all kinds of machinery. Cast Iron Doors and Frames, and Mill Castings of every description, made to order.

THOMAS J. LOVEGROVE,

Machinist and Founder,

West Falls Avenue, below Pratt st., Baltimore.

Railroad Letting, in Virginia.

PROPOSALS will be received at the office of the chief engineer of the Richmond and Danville railroad, until 9 o'clock A. M., Monday, the 10th of March, to be decided the 13th of the same month, for doing all the grubbing, clearing, grading, ditching and masonry, on the Richmond and Danville railroad, in the counties of Amelia, Nottingham, Prince Edward, Lunenburg and Charlotte, comprehending about 45 miles of road.

Profiles and specifications can now be seen at the office of the company in Richmond; and after the 10th of February, at the offices of the resident engineers, on the line, at Burkeville and Keysville.

By order of the board of directors,

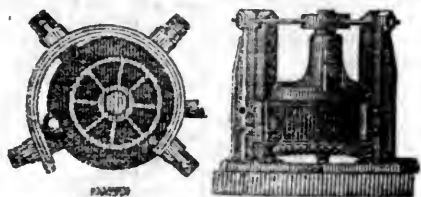
ANDREW TALCOTT,

Chief Engineer R. & D. railroad.

Engineering department R. & D.
R. R. Co., Richmond, Jan. 22, 1851.

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phoenixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll sounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y. P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery for making Spikes, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

CHILLED RAILROAD WHEELS.—THE UNDERSIGNED are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

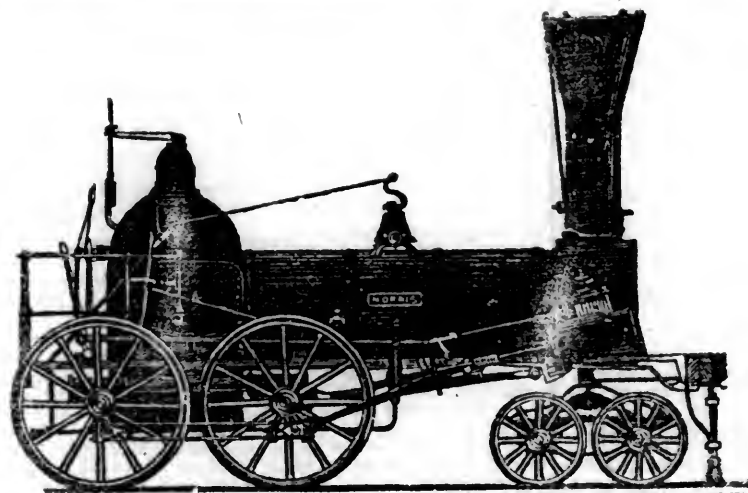
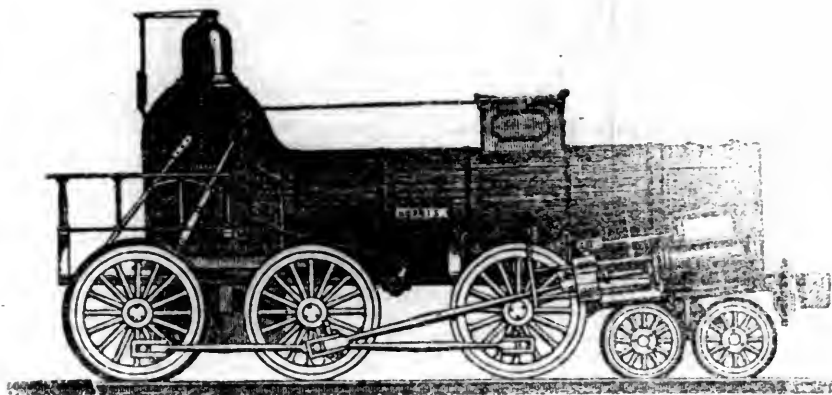
Brown's Old Established SCALE WARE HOUSE,
NO. 234 WATER ST., NEW YORK.

THE Subscriber, Practical Manufacturer of Scales of every description, respectfully asks the attention of Railroad Companies to his Improved Wrought Iron Railroad Track and Depot Scales which for strength, durability, accuracy, convenience in weighing, and beauty of workmanship, are not surpassed by any others in this country.

He is aware that this is rather a bold assertion for him to make, yet he can say with confidence that they have but to be tried to give them precedence over all others.

J. L. BROWN.
Bank Scales made to order, and all Scales of his make Warranted in every particular.

References given if required

NORRIS' LOCOMOTIVE WORKS.
BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,

THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size. Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tyres are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS

PATENT MACHINE MADE HORSE-SHOES.

The Troy Iron and Nail Factory have always on hand a general assortment of Horse Shoes, made from Refined American Iron.

Four sizes being made, it will be well for those ordering to remember that the size of the shoe increases as the numbers—No. 1 being the smallest.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

Etna Safety Fuse.

THIS superior article for igniting the charge in wet or dry blasting, made with DUPONT'S best powder, is kept for sale at the office and depot of

REYNOLDS & BROTHER,

30 & 32 Manufacturers, No. 85 Liberty St.

NEW YORK.

And in the principal cities and towns in the U. States.

The Premium of the AMERICAN INSTITUTE was awarded to the Etna Safety Fuse at the late Fair held in this city.

November 3, 1849.

ly

COLUMBUS, OHIO,
Railroad Car Manufactory.
RIDGWAYS & KIMBALL,

HAVE established at this central point, the manufacture of Passenger, Freight, Gravel and Hand Cars for Railroads, and assure all Western Railroad Companies that it will be their constant aim to procure the best materials and workmen, and to turn out the best kind of work at fair prices. Specimens may be seen on the Columbus and Xenia Railroad. The patronage of Railroad Companies is respectfully solicited.

FOR SALE.

THREE LOCOMOTIVES, Manufactured by M. W. Baldwin, of 10 tons weight, all in complete repair, and now running on the Columbia and Philadelphia Railroad.

For particulars apply to A. L. Roumfort, Supt. of said road, either at Philadelphia, or Parkersburg, Chester county.

A. L. ROUMFORT,
Supt. Motive Power Col. & Philad. R.R.

At present the rail, instead of being continuous, is cut at distances of 15 or 20 feet. When the wheel is at the centre of the bar, it is sustained by its whole length, and by the same extent of road bed. At the end of the rail, this support is narrowed down to a *point*. As a necessary consequence, it here yields under the enormous pressure it is called upon to sustain, and permanent depressions in the road bed are thus formed at every joint. Instead of an uniform, we have a rolling surface with regular depressions and elevations, to overcome which, absorbs a large portion of the motive power. For the reasons stated, it has been found to be impossible to so secure the ends of the rails in use, as to preserve them upon the same plane, or so that they shall always maintain the same relative position towards each other. The consequence is, that in passing from one to the other, the head of the rail in advance, being elevated, receives a violent blow which exerts an injurious effect, both upon the rail and the machinery. One tendency is to knock the rail out of its place. Another is to destroy the ends of the rail much faster than their centres. The injury to the machinery

is just in proportion to the violence of the blow.—We do not propose to go into an examination of the extent of this evil, as the experience of every railroad man will be more satisfactory than anything we can say; but we wish to call the attention of the profession to the importance of avoiding, as far as possible, all concussions in the working of a railroad. It is a well known fact that the structure of iron, the great material used, is essentially changed simply by the impact of heavy blows. Without attempting to account for the fact, we know that *pressure*, and *percussion*, exert an entirely different influence upon iron. A rail will allow millions of tons of pressure to pass over it without changing its structure, or materially wearing away its surface, while a few well directed blows of a hammer upon it, will render it entirely unfit for use. These change the arrangement of its fibre, and destroy its strength. This is one of the reasons why so many unforeseen accidents occur upon railroads. Every blow that the rail, or the rolling stock, receives, in the passage of the trains, acts directly upon all the material in use. The effect of a given number of these, are equal to the resistance of such material; and if we could calculate the amount of the one, we could determine the life of the other.

In the compound rail, and particularly in the Seymour pattern, this concussion is almost entirely obviated. By the system of breaking joints made use of, the ends of the rails are no more injuriously acted upon than are the central portions of it.—The effect of the action of the trains passing over it, is that arising from pressure, not percussion. In the former case, the rail is worn out. In the latter the character of the iron is changed, and its efficiency destroyed, while the form remain unaltered.

What we have thus far said, has reference chiefly to the relative economy of the two kinds of rail, as far as their wear, and that of the track, are concerned. We have seen that in each case different principles are called into action; that in one case the rail is *worn* out, in the other, *destroyed*. But the saving effected here, great as it may be, is only one of the advantages of the continuous rail. It communicates a regular and uniform motion to the trains, and relieves the passenger of that greatest annoyance in travelling, the eternal *clatter* caused by passing from one rail to the other. It saves a greater part of the expense of maintenance of way, an item which eats up so large a portion of the receipts on our roads. The cause of the saving here is perfectly obvious. In the continuous rail, every part of it is equally well supported, and every part of the track is uniformly acted upon. Where the rail extends for miles without being divided, its own weight will keep it in place, even if the road bed should have a tendency to settle unequally; so that in case of a culvert, or an embankment, being washed away, the rail will remain in its position, and sustain of itself the passage of the trains. On curves, the compound rail is particularly applicable, as with it a true curve may be maintained, and the angles, which are almost unavoidable in the use of the common rail, avoided. It is the immense centrifugal force of heavy trains, in passing around a sharp curve, that renders it so difficult to keep the present rail in place, and to avoid the constant recurrence of accidents. In all such cases, as well as in those where the track runs along a high embankment, or side cut, companies should not only be compelled to use the compound rail,

but this should be made of the very best material. The community collectively should enforce this rule, which is equally for the interest of companies, as for the safety of the public.

The saving in the machinery will be equal to that effected in the road bed and superstructure; as the wear of both is attributable to the same cause, and keep almost exact pace with each other. If the track is in bad order, it is impossible to maintain the rolling stock in good condition.

We have referred to this matter, not because we have anything to state that does not come within the ordinary experience of every man employed in the operating of railroads, but rather for the purpose of arousing public attention to this most important subject. In the improvement of the rail, lies the great field for reform in railroad management. This may be effected, and without additional expense, by simply adopting such improvements, the value of which are fairly and fully demonstrated. Our companies are certainly culpable in not having turned their attention to this subject long ago. One great reason of this neglect is, that directors of companies, with all the zeal and ambition which many of them really possess to advance the interests entrusted to their care, have neither the time, nor opportunity, nor are they in a position where they can give personal attention to the examination of anything *new*. They have no means at their command for such objects; and if they had, few have sufficient confidence in their own judgment, to be willing to stand God-father at the christening into practice of a new idea.—Companies, too, are so annoyed by the constant importunities of inventors, to examine and experiment upon what often turns out to be worthless, that most of them have adopted this rule, to make use of nothing new, the value of which is not already well established. This rule may be a very good one to secure the quiet and comfort of railroad directors and officers; but if universally acted upon, all progress would be at an end. If our predecessors had adopted a similar one, we should have been where they were.

It is very easy to see that vastly greater speed is obtained with the same power, on a compound rail, than upon the common form. The extent of this increase is, at present, a matter of conjecture, but we have no doubt but the speed of trains may, by the use of the new rail, be increased at least one-quarter beyond the present rate, with the same amount of fuel. In rival lines, the turning point will certainly be, the use of a compound rail.—We are very glad to learn that this subject is attracting the attention of the New York and Erie railroad company, and that they will probably order a sufficient quantity of the "Seymour" rail, to relay the Delaware division of their road. This, from the grade encountered, and from the exposed position of many parts of this portion of the line, is by far the most dangerous and expensive division on the whole route. The success of this, as a through passenger road, resolves itself into a question of speed. The line which will place the passengers on Lake Erie, one hour in advance of the other, will command the travel. But this company must remember that high speeds are only compatible with a good road and superstructure, and to our minds they should not hesitate for an instant in placing the compound rail upon that portion of the line most liable, for the reasons stated, to accidents. Nothing should be neglected that may be necessary to retain the confidence of the public as to the safety of their road, which has been a little shaken by the accidents that have already occurred.

Troy, March 6, 1851.

H. V. Poor, Esq., Editor American Railroad Journal.

Dear Sir—On the 4th ult. I addressed a note to C. Vibbard, Esq., Superintendent of the Utica and Schenectady railroad, making certain inquiries in relation to the "Patent Compound Railroad Iron" in use upon that road, and which was manufactured at the Mount Savage Iron Works, in Maryland. Herewith I send you for publication a *verbatim* copy of his reply. I think you will agree with me, that Mr. Vibbard's experience with this new form of rail is singularly confirmatory of the advantages claimed for it by you in a series of editorial articles recently published in your Journal, as well as a practical demonstration of the soundness of the views just given to the public in a pamphlet upon the "Defects of Railway Tracks and their Remedy, by the adoption of a new form of Railway Bar," by Benjamin H. Latrobe, Esq., Civil Engineer, and which I am glad to see you are transferring to the columns of the Railroad Journal. Very respectfully,

Yours,

J. F. WINSLOW,
Pres't. Mt. Sav. Iron Co.

Utica and Schenectady Railroad Office,
Schenectady, March 1, 1851.

J. F. WINSLOW, Esq., President Mount Savage Iron Company.

Dear Sir—Yours of the 4th of February, submitting various interrogatories relative to the "Patent Compound Railroad Iron" furnished by your company, and laid down upon this road, was duly received, to which I shall reply in general terms, making the ordinary T rail the standard of comparison. From my own observation, and the experience of locomotive engineers, who are daily running upon the compound, in connection with the T rail, (which is superior of its kind,) I am clearly of the opinion that there is a saving in the wear and tear to the machinery of the road, of at least 25 per cent.

In passing from the T to the compound rail with the trains, a much higher rate of speed is attained with the same power, which can only be attributed to the non-resistance at the joints. There can be no doubt that a less expenditure of motive power is required upon the compound rail in pulling loads of equal weight, but to what extent I am unable to say.

In November, 1849, about one thousand feet of the compound rail, furnished by you, was laid down in connection with the T rail in the main track, over which all trains passing westward from Schenectady were run.

This part of the track has not been repaired or adjusted, *nor has it required to be*, while the T rail which was laid at the same time, and with great care, has required repeated adjustment. The ten miles of your compound rail laid last fall has also kept in admirable adjustment.

The experience on this road in that respect, is the same as upon all others where the T rail is in use.

A very large proportion of the expense of adjusting the track is at the joint or end of the rail, which is caused by the weakness, or break in the track at that point. This defect is entirely obviated by the use of the compound rail which gives an equal and perfect bearing upon all the cross-ties, thereby reducing the expense of keeping the track in adjustment, more than one-half. No part of the com-

pound rail has broken or been thrown out, while a large number of broken and defective bars of the T rail has been removed. Neither has a wheel or shaft broken upon this part of the rail. Higher speed can be maintained with same power, greater safety and comfort to the passengers, the oscillation and noise of the cars being much less than upon the T rail.

No chair is required in laying the compound rail, the saving in expense of which I consider more than equal to the additional cost of rivets and riveting together the bars. Two or three rivets, only, have broken since the rail has been in use, which upon examination proved to have been defective when driven.

Additional experience is wanted to determine the durability of the compound rail, in comparison with the T rail. That the result will be in favor of a compound rail, I see no reason to doubt.

Respectfully,

Your obt. serv't.,

C. VIBBARD, Sup't.

The Compound Rail.

We forward with this to such of our subscribers as did not receive it the past week, the cut illustrating the article of Mr. Latrobe upon the compound rail, which we published in our issue of the 1st and 8th inst. We also give the evidence of a large number of employees of the Baltimore and Ohio railroad company, in relation to the manner in which the new rail has worked since it has been in use. As Mr. Latrobe's article is so full and explicit, and as his observations are the result of a very extended experience, his communication requires nothing from us in elucidation of the subject, even if we felt at liberty to add anything. We commend this subject to the careful attention of the railroad public:

The undersigned, masters of road and supervisors of repairs upon the parts of the Baltimore and Ohio railroad, on which the several sections of the new rail composed of three parts have been laid—unite (each for himself in regard to the part of the track under his own charge) in the following statement of their experience and opinions of the merits of that rail.

There are four different points at which the rail has been laid down; viz. 200 feet in the Mount Clare cut, near Baltimore, laid in May, 1849, and now down ten months—600 feet, a mile west of Avalon Works, laid in May, 1848, and now down twenty-two months—900 feet, at Sykesville, laid in May, 1849, and 4,000 feet, near Cumberland, laid in June, 1849. All of these sections have been laid upon cross ties only, without any sub-sill, excepting the piece near Sykesville, where a sub-sill was used, the embankment being newly made. The weight of the rail is about 50 lbs. per yard. It is riveted together and spiked down upon the cross-ties without chairs, joint plates, or other fastening.

We are enabled to say that the track thus far has given us great satisfaction, and that we are led to consider it a decided improvement upon any form of railway structure of which we have any knowledge. The manner in which the pieces composing the rail break joints with each other, and the simple and permanent mode in which they are connected, equalize the strength of the track, so that it forms, in effect, a continuous rail without joints—while there is an entire freedom from the shock and clatter which invariably takes place at the joining of the bars of other tracks, there is at the same time, a general elastic spring in the new rail, which relieves the passing train of any harshness, or jar, in the movement, and which must diminish, as we suppose, the wear and tear of engines and cars, as much as it does that of the track.

We find that considerably less labor is required to keep the new track in adjustment than the old, under similar circumstances, and we should feel much more safe in leaving it in an imperfect state

of adjustment than the other—the joints of which require constant attention.

We see no reason thus far to think that the top or cap rail will wear more rapidly than the upper surface of any solid rail—the few bars in the section near Avalon, which have shown some wear at the ends, were defective when laid down (the cap being also of the lighter pattern, afterwards made heavier for use in the other sections) nor is there in that section more signs of wear than are to be observed on other similar lengths of the U or T rail in use for the same time.

The rivets appear to hold the rail together well, and of those of the larger size, few or more break when the track is well laid and settled. The expense of renewing rivets must, in any event, we think, be very trifling compared with that of replacing the chairs, plates, and bolts, spikes, or other joint fastenings of other forms of rail. The spikes of the new track will also, we believe, outlast those of the old rails: the spikes of a smaller size will answer the same purpose.

We do not believe there will be any difficulty in promptly rebuilding the track if deranged by the running off of trains, and we think that, connected as it is, from end to end, it will be very difficult, if indeed, possible, that a train should tear it to pieces as it does a track composed of solid bars, depending only upon the ordinary fastenings at the joints to hold them together. The three part rail now laid is of the lightest weight suitable to a rail of any form laid on cross-ties; and we judge that as it has, notwithstanding, succeeded so well, it would show its good properties still more strongly if it were of any heavier weight. There appears to be no difficulty in the accommodation of the rail to the contraction and expansion of the several parts by heat and cold. Although the track may be still regarded as an experimental one, only because it is comparatively new, yet we think it has been long enough in use to remove all the objections we have heard or felt against it, and we are satisfied it embraces principles of construction which distinguish it from all preceding tracks, and which must ensure its ultimate success, as a highly valuable improvement upon the railway structure.

Wendel Bollman, Mast. of R. 2d div. B. & O. R.R.
William D. Burton, Supervisor.

Roseby Carr, Supervisor.
James B. Jordan, Foreman shops, Mt. Clare depot.
S. T. Shipley, Master of R. 1st div., B. & O. R.R.
Robt. Murray, Supervisor.
Thatcher Perkins, Mast. of Mach'y B. & O. R.R.
March, 1850.

The undersigned, employed in various capacities upon the passenger and tonnage trains of the Baltimore and Ohio railroad company, being requested to express their opinions upon the merits of the new form of rail composed of three parts, and of which several short sections have been laid upon the company's road during the past year, unite in the following statement:

The movement of the engine and cars of the train upon this rail is more smooth and free from shocks and jar than upon any other form of track with which they have any acquaintance upon this or any other road. There is also much less noise either from the track itself, or from the train. The solidity of the track is at the same time accompanied by an elasticity and softness of motion which they suppose must diminish greatly the wear and tear of the machinery, and the permanent connection of all the parts of the rail, appears entirely to obviate the risks of accidents from the displacement of the bars. In short, the undersigned best express their views in regard to the track, by saying that they feel safer and more comfortable upon it, than upon any other, over which they have passed.

Signed by a number of the employees of the Co.

Description of the Navy Dry Dock at Brooklyn.

The stone dock at the Brooklyn Navy Yard being so far completed as to be used for the purpose intended, I send you the following description of it:—
Length of dock from cession to head.... 348 feet.
Width of chamber at coping..... 98 "
Depth of water at high tide..... 27 "
Gross amount of stone used, 30,00 cubic yards.
Cost, up to January 1st, 1851, \$1,933,640.

For pumping out the water they have a vertical beam engine, having a cylinder of 50 inches diameter, and 12 feet stroke; the beam is of cast iron, 32 feet long, and at the opposite end from the cylinder there is a connecting rod attached to the crank shaft, on which is a fly-wheel of 24 feet diameter. There are two single acting lifting pumps, [one being worked from each side of the beam.] lined with composition, 63 inches diameter and 8 feet stroke. The quantity of water to be removed is about 600,000 cubic feet, and the time occupied 3 hours; the smallest lift being 24 feet, and the greatest 26 feet. Connected to the engine are three drop flue boilers, so arranged as to be used singly or together, at pleasure. The cut-off valve used on the engine is separate from the steam valves of the engine, and is so arranged that it may be adjusted at pleasure while the engine is in motion. The engine and pumps are a fine specimen of work and were constructed by Mr. Kemble, at the West Point Foundry.—*Journal of the Franklin Institute.*

Steamships building at the port of New York.

The Merchants' Magazine states that the first regular steamships built in New York were the *Lion* and the *Eagle*—launched in the year 1840, by Jacob Bell, for the Spanish government. They are now attached to the Spanish navy, and are known as Congress and Regent. The next was the *Kamschatka*, built by Wm. H. Brown, in 1841 and sold to the Russian government; but the *Washington*, of the New York and Bremen line, launched by Westervelt and Mackay, in January of the year 1847, was the first vessel owned in the United States in connection with a regular line of ocean steamers. The steamships *United States* and *Hermann* followed in 1848. The former was soon after sold to the Germanic Confederation. These three vessels were the pioneers of American adventure in this important branch of national industry.

Ocean Steam Navigation--The Cunard Line.

Below we give from the British Almanac and Companion a brief account of this line of steamers, for the purpose of preserving a record of the history of one of the great enterprises of the day, and one which is now attracting so large a share of the public attention:

A committee of merchants and others was formed at Bristol in 1835, for the purpose of getting up a steamship company, for a mail line to New York; and Captain Claxton was desired to report on the practicability of such an enterprise. He had visited all the principal ports, and made frequent voyages across the Atlantic. He advised that the vessels for such a line should not be less than 1,200 tons. He found that the fine American 'liners' have an average homeward passage of 24 days, and an average outward passage of 36 days; and he anticipated that such steamers as he recommended might make the journey in 13 days and 20 days, respectively. The company was formed; the *Great Western* steam ship was built; and the year 1838 witnessed the first transit of a steamer across the Atlantic. In the meantime an Irish company, the *St. George's* steam packet company, embarked in the same enterprise; and the *Sirius* left Cork in the same month as the *Great Western* left Bristol, both bound for New York, and both reaching the place of destination in safety. Never was a boldly conceived plan more successfully carried out against the predictions of many scientific men. The *Sirius* left Cork on April 4, and arrived at New York April 23, equal to 161 miles per day; on her return voyage she averaged 167 miles per day. The *Great Western* left Bristol April 8, and arrived at New York, April 53; her average speed was 208 miles per day, while the average speed homeward was 213 miles. In eighty-four passages, made between 1838 and 1844, the *Great Western* ran the outward passage in an average time of 154 days, and the homeward route in an average time of 134 days.

The *Great Western* steam ship company received a small postage for all letters conveyed by the *Great Western*; but as this sum was inadequate they memorialized the government, in September 1838, to consent to a new arrangement. In November of the same year, the government ad-
ver-

tised for tenders for the conveyance of the mails from England to Halifax: the steamers to be ready in six months, and the contract to be for one year. The company in making a tender, stated that three large steamers would be necessary for this service; that they would have to be built for the purpose [two new ones as companions to the Great Western]; that they would require 18 to 24 months for building, and that the contract ought to be for 7 years, for which a sum was named. The government declined this offer. From this time the company remained, as they have ever since been, a most luckless one, in a commercial point of view. They have failed to secure any government contract; and their private running of steam boats has not been remunerative. The Great Britain was built with a view to increase the net profits, by carrying larger cargoes of goods and passengers; but she ran upon the sands at Dundrum Bay, and although released a year afterwards, she never since earned a shilling for her proprietors. The President and the British Queen belonged to another company; the former was lost, and the latter was sold to the Belgian government. The Sirius, too, was taken off the Atlantic route. After the proprietors of the Great Western had been running that vessel for four years, they memorialized the government for some contract or other, some remuneration for the services which they had been the first to render to transatlantic communication; but competition had done its work; another contractor had been agreed with, and the government had nothing to give, or would give nothing to the Great Western and its owners. The Great Western, however, continued to run to New York; the contract with other parties extending [in the first instance] only as far as Halifax.

We must now speak of this competitor. Mr. Cunard came to England from America with the view of improving the communication between the two countries; and a tender which he made was accepted by the government. The contract was for three steamers, which would maintain a monthly communication in each direction between Liverpool and Halifax, starting on fixed days from each end. The contract sum was £55,000 per annum; but it was soon found that four ships were necessary, and the terms were increased to £60,000. The tonnage was fixed at 1,200 tons. The contract was signed in May, 1839, the first Cunard steamer ran in July 1840, and the contract was for 7 years. A further change was afterwards made, on account of again increasing the number and tonnage of the steamers, and making fortnightly voyages instead of monthly. The three first built steamers were smaller than those afterwards constructed; they were the *Britania*, the *Acadia*, and the *Caledonia*. The custom has been for the vessels of this company to carry coal enough for 20 days' consumption, to make allowance for detention, and the vessels have thus never run short of coals. Mr. Cunard for some time held the whole property in this contract in his own hands; but he subsequently sold three-fourths to other parties at Glasgow, retaining the chief management himself. Mr. Robt. Napier, of Glasgow, supplied the whole of the engines for this fine fleet of steamers.

When the contract with the Cunard line was about approaching its termination, the American government offered inducements for the establishment of a new line of steamers from New York to Liverpool. This would have seriously damaged the Cunard company, whose American ports were Halifax and Boston, and Mr. Cunard came to England expressly to urge upon the English government the necessity of extending the operations, both as to the frequency and the length of the voyage. A clause had been introduced into the former contract, making provision for some such contingency as this; and the government, on the pressing representations of Mr. Cunard, consented to enter upon new arrangements. The *Great Western*, meantime, had regularly carried on the steam traffic between England and New York, but this new contract startled her proprietors. It was in the autumn of 1845 that the negotiations were going on, and in the spring of next year the new contract was completed, by virtue of which the Cunard company undertake to despatch a mail steamer once a fortnight from Liverpool to Halifax and Boston, and another mail steamer once a fortnight

from Liverpool to New York; the price being £145,000 per annum, and the contract to remain in force till 1858. The American company, with whom an agreement was entered into by the United States government, planned a line from Bremen to New York, calling at Cowes to accommodate English traffic; but this was soon found to be an inefficient mode as far as England is concerned.

The steam vessels belonging to the British and North American Royal Mail Steam Packet Company (Cunard's) on January 1, 1849, were the following:—

Names.	Year built.	Length.	Tonnage
<i>Britania</i>	1840	204 feet.	1155 tons.
<i>Acadia</i>	"	203 "	1136 "
<i>Caledonia</i>	"	203 "	1139 "
<i>Margaret</i>	1842	185 "	600 "
<i>Hibernia</i>	1843	218 "	1422 "
<i>Cambria</i>	1847	218 "	1423 "
<i>America</i>	1848	249 "	1826 "
<i>Niagara</i>	"	249 "	1825 "
<i>Europa</i>	"	249 "	1834 "
<i>Satellite</i>	"	108 "	157 "
<i>Canada</i>	"	249 "	1832 "

Two of the above were subsidiary: the other nine were ocean steamers. One or two have since passed into other hands, [the *Hibernia* has been purchased by the Spanish government, to run between Cadiz and Cuba]; and new ones, of which the *Asia* and *Africa* are fine specimens, have been placed upon the route.

From the Merchant's Magazine. Internal Improvements of the State of New York.

A SKETCH OF THE RISE, PROGRESS, AND PRESENT
CONDITION OF INTERNAL IMPROVEMENTS IN THE
STATE OF NEW YORK.

ENLARGEMENT OF THE ERIE CANAL.

Continued from page 143.

Acts were passed in 1840 for borrowing \$2,750,000 for the canals, and for loaning \$998,000 to railroads. No new canals were authorised, or charters for railroads granted at this session. The 5th section of the act for making loans for the canals, provided that "no new work shall be put under contract during the present year, on the enlargement," except at Black Rock, and some work at Rochester. An act also passed at this session, to purchase the Oneida Lake canal from the company which constructed it, and to issue stock to the amount of fifty thousand dollars therefor. The maintenance of this canal for nine years, has cost the State \$43,513 97—paid for interest on the debt for its construction, \$21,166 09. The amount received for tolls in nine years is \$5,162 26; the expenses exceed the revenue from tolls in nine years, \$59,517 80; besides the original outlay of \$50,000, which the State must pay hereafter.

The commissioners of the canal fund, in their annual report in January, 1841, stated that "from the 10th of February, 1839, to the 1st of January, instant, a period of less than two years, there has been expended on the Erie canal enlargement, and on the Genesee Valley and Black River canals, more than nine millions of dollars; a sum greater, it is believed, than was ever expended, during peace, by any government, upon works of internal improvement."

The report states that the large contracts made in 1838 and 1839, by which obligations for the expenditure of ten millions five hundred thousand dollars were incurred, left no option but to fulfil these engagements. They suggest that much of the work may be postponed, by an arrangement with contractors. "If not, then it will become a question for the legislature to decide, whether the public interest will not require the direction of some delay in a portion of it, in preference to proceeding at a rate which the business of the canal does not require, and which the financial circumstances of the State may not justify." And they add, that the loans for the public works for the present year should not exceed those of the past. This report appears to have been written by Mr. Spencer, and is signed by him, Bates Cooke, Willis Hall, O. L. Holley and Jacob Haight.

The canal commissioners, however, in their annual report, stated that the amount of \$6,550,000 would be required "to continue, at the present rate

of progress, the work now under contract, including such additional portions as should be put under contract in the year 1841." This report appears to have been written by Samuel B. Ruggles, and was signed by Messrs. Hamilton, Whitney, Dexter, Hudson and Boughton.

Mr. Verplanck, chairman of the committee on finance of the senate, brought in a bill for a loan of \$4,000,000, to prosecute the public works. This bill passed the senate by a vote of 16 to 7. The negative votes were given by John Hunter, Robert Denniston, A. C. Paige, J. B. Scott, S. Ely, H. W. Strong, and Avery Skinner. Mr. Hunter made a speech against the bill, in which he told the senate "there were only two ways in which credit could be maintained; the one is, not to use it too freely; the other is, to levy a tax whenever you make a loan, to meet the interest which may accrue thereon." He also stated that if the fund commissioners put into the market the amount of the proposed loan between the time of this discussion in the senate and midsummer, the 5 per cents would be reduced to 80 cents for 100 of stock. This prediction was realised before the close of April.

In the assembly, the majority of the committee on ways and means, reduced the proposed loan to three millions, and in this shape Mr. Holley reported it for the concurrence of the house.

Mr. Hoffman made a minority report, in which he proposed to reduce the loan for the public works to two millions of dollars; to cut off all future loans of state credit to corporations; to levy a mill tax; to provide a sinking fund for the payment of the State debt; and to suspend the prosecution of contracts, except where the public interest required their completion. John W. Lawrence signed this report, with Mr. Hoffman. These propositions were rejected, 64 to 42, and the bill passed for three millions, which was concurred in by the senate.

A loan of \$200,000 was also authorised, to rebuild the locks, and otherwise improve the Chenango canal.

John A. Collier was appointed comptroller by the legislature of 1841, in place of Bates Cooke, who resigned, and was made a bank commissioner.

In the message of Governor Seward, in 1842, he announced the fact that the Ithaca and Owego, and the Catskill and Canajoharie railroads had failed, leaving the State to pay the interest and principal on \$515,100 of State stock loaned to said companies. The total loss to the State, by the payment of principal and interest, in consequence of the loans of its credit to these two roads, is \$1,010,827 87.

The message stated that ten thousand laborers were employed on the public works, and the legislature were urged to complete the enlargement with all convenient diligence, and to aid the Erie railroad and other works, to an aggregate amount of seventeen millions; making the total indebtedness of the State thirty-six and a half millions of dollars.

In the annual report of the canal commissioners, Mr. Ruggles and his associates urged the speedy completion of the enlargement of the Erie canal.

When the message of the governor came under consideration in the house, for reference to the several committees, Mr. Hoffman reviewed the condition of the public works and the finances, and indicated the policy which was subsequently embodied in the act introduced by him "for paying the debt and preserving the credit of the State."

On the 7th of February, Samuel Young was appointed secretary of state, A. C. Flagg comptroller, Thomas Farrington, treasurer, George P. Barker, attorney general, and Nathaniel Jones, surveyor general. Luther Bradish being lieutenant governor, was president of the board of fund commissioners.

Immediate measures were taken to notify the banks which held the fund set apart for the payment of the canal debt, that this money would be drawn upon to pay the interest on the State debt, on the first of April, and to put the canals in repair, being the only resource within the reach of the commissioner of the canal fund. Out of deposits amounting to fourteen hundred thousand dollars, less than two hundred thousand was paid over, after notice of 60 days; barely sufficient to pay the quarterly interest on the canal debt. Arrangements were then made with the banks which re-

ceived the tolls from collectors, to advance sums sufficient to put the canals in repair, and to reimburse themselves out of the first tolls received.—Temporary loans had been made the preceding year to the amount of \$1,613,000, which were payable in the month of March, 1842. The interest on these loans was paid, but the principal was not paid for want of means. On the 14th of March, the comptroller was notified that the Erie railroad company was not in a condition to pay the April interest on the three millions loaned to said company. In this emergency, he sent a circular to the auctioneers in the city of New York, requesting them to deposit in the Manhattan company, to the credit of the treasurer, on the 31st of March, the quarterly payments, which, by the law, were not payable until the 30th day of April. This request was promptly complied with, and the means were thus furnished to pay the interest on the Erie railroad stock.

On the 15th of February, 1842, the comptroller made a special communication to the legislature, (assembly document No. 61,) giving a view of the financial condition of the State, and recommending a mill tax, and concurring generally in the measures suggested in Mr. Hoffman's report of the preceding year.

On the 7th of March, Mr. Hoffman made a report as chairman of the committee on ways and means, and introduced his celebrated bill, entitled "An act to provide for paying the debt and preserving the credit of the State." This bill passed the assembly by a vote of 50 to 27, and the senate by a vote of 13 to 11.*

At the time the suspension act took effect, the unfinished contracts amounted to about three millions of dollars; and the amount due to contractors for work done up to that time, and for land damages, was about three millions more, exclusive of about half a million of dollars subsequently allowed and paid to contractors for breaches of their contracts by the suspension act. The same act which suspended the public works, made provision for borrowing more than five millions of dollars, and an annual tax of more than half a million, to meet the pecuniary obligations of the State; and to this was added loans of a million and a half more, by acts passed in 1843 and 1844; and a new tax of one tenth of a mill in the latter year, to pay interest on a loan of \$900,000. This tax produced \$175,913 in three years, and was then discontinued under a provision of the act for its assessment, (chapter 314 of 1844.) One half of the mill tax was discontinued in 1845, by the operation of the 11th section of chapter 114 of the laws of 1842.

At an extra session of the legislature in August, 1842, "for the purpose of dividing the State into congressional districts," Governor Seward presented a message, in which he recommended that the legislature rescind the law directing the discontinuance of the public works; render aid to the N. York and Erie railroad; and direct the fiscal officers to apply their surplus tolls to the prosecution of the public works." This recommendation was not acted upon. A resolution was passed at this session, directing the comptroller to suspend the sale of the New York and Erie railroad until May, 1843.

Mr. Hoffman, and those who cooperated with him in levying a tax, considered it a matter of justice to those sections of the State which had not shared in the expenditures for internal improvements, but were heavily taxed, that they should be secured, by a constitutional guaranty, against future debts, and consequent taxation. An attempt was made to effect this object by an amendment of the constitution, introduced by Mr. Loomis, of Herkimer, in 1841, called 'the people's resolution.' This effort was persevered in during four or five sessions of the legislature, without success; and, in this state of things, an act was passed in 1845, to submit to the votes of the electors the question of

calling a convention to amend the constitution, which was decided by the people in the affirmative, by a majority of 179,307. The convention met on the 1st of June, 1846, and not only incorporated into the constitution the principles contained in Mr. Loomis' resolution, and Mr. Hoffman's financial act of 1842, but also a provision to pay the debt due from the canal fund to the general fund, as recommended by Mr. Flagg in his annual report as comptroller, in 1834.

After these provisions were engrafted upon the constitution, laws were passed for the resumption and prosecution of the unfinished public works, at the legislative session of 1847. See acts, chapters 259 to 263, and 445, of that year. The appropriations from the funds provided by the constitution for finishing the public works, exceed four millions of dollars for the last four years.

It is now about sixteen years since the act passed for the enlargement of the Erie canal; and for about five years of this time the work was suspended under the act of 1842, except where new structures were brought into use, instead of repairing old ones, for which they were substituted. The expenditures on the enlargement, to the close of 1849, amounted to \$20,516,319 72, of which the sum of \$4,742,661 06, was paid for interest on money borrowed. The completion of the work, it is estimated, will cost eleven millions of dollars more.

A large portion of the locks, aqueducts, and other expensive structures, are completed; but more than two hundred miles of the section work—that is, the excavation necessary to widen and deepen the canal between the locks and aqueducts, remains to be done.

In consequence of the great crowd of boats and lake vessels in the harbor at Buffalo creek in 1847, a committee of the citizens of that city, and the common council, invited the members of the canal board to visit the place, with a view of examining the accommodations for lake vessels and canal boats, and to recommend to the legislature such relief as was demanded by the increase of trade at that point. The canal board complied with this request, which resulted in recommending the excavation of a basin for lake vessels, covering an area of ten acres, about a mile from the lake, and connected with Buffalo creek at the head of navigation; and a ship canal near the mouth of the creek, covering an area of eighteen acres, also for the accommodation of lake vessels. The views of the canal board are given in assembly document No. 205, of 1847. This report was written by A. C. Flagg, and signed by Thomas Farrington, Nathaniel Jones, S. Clark, H. Halsey, John T. Hudson, N. S. Benton and J. VanBuren. The legislature, at the fall session of 1847, appropriated \$150,000 (chapter 445) to carry the recommendations of the canal board into effect.

From the Year Book of Facts. **Great Circle Sailing.**

A voyage has been made to Australia in an unusually short space of time, by adopting the system of great circle sailing, which was brought before the admiralty about two years since by Mr. John Towson. This new feature in navigation is of such obvious truth and decided advantage, that it is only surprising that navigators have waited till this time of day to adopt so self-evident a fact.—The principle is thus popularly explained:

The unprecedentedly short voyage made by the Constance has been acknowledged to have arisen from the application of a simple scientific principle to navigation, by which a month has been saved from the average time occupied by modern voyages. There is nothing visionary or abstract in the principle on which this improvement is founded; but it is one that has obtained the universal consent of civilised mankind—that this earth is a globe. But as a practical principle, this fact has been too much disregarded by the mariner. His chart is a plane, and by it he has been accustomed to navigate the ocean, and we can scarcely persuade him that the positions of distant lands are otherwise than they appear on the chart. This error was of little importance while the Mediterranean Sea was the principal seat of commerce, and the transit of the Atlantic ocean was an event of rare occurrence.—

Then it was that Mercator's chart was received from the hand of its inventor as a most acceptable boon to the navigator. But now a very different order of circumstances exists. The members of the same British family are antipodal to each other, and the chart of half the earth's circumference is more frequently employed than that of the Atlantic had been a few score years since.

Under these circumstances, the Mercator's chart has become inadequate to meet all the requirements of the navigator. He is now called on by the men of science to regard the earth's true form, and when he undertakes voyages to distant lands, to take into consideration the circumstance that the earth is an artificial contrivance, which in many instances may lead him to false conclusions.

To avoid the erroneous conclusions drawn from Mercator's chart, we would refer the mariner to a work published by the British Admiralty two years since, entitled "Tables to facilitate the practice of Great Circle Sailing," constructed by Mr. John Towson. We do this with great confidence, since by its aid the Constance emigrant ship has shortened her voyage at least a month. But he will undervalue these tables if he imagines it will only enable him to follow Capt. Godfrey in his track to Australia, which route his late voyage has demonstrated to be the best practicable track. It is serviceable in all cases of voyages to regions situated at a great distance east or west of each other, both in shaping his track and in choosing his tack when unfavorable winds prevail; for we are convinced that errors in both these particulars are of daily occurrence, arising from his disregarding the globular formation of the earth.

The track pursued by the Constance is denominated by the author of the work alluded to, "Composite Great Circle Sailing," and is usefully employed when the great circle route would lead to impracticable latitudes. In the southern oceans it is peculiarly applicable, since in Capt. Godfrey's maximum latitude, 50°, favorable winds continually prevail for going out by the Cape and coming home by the Horn. To Australia 900 miles is also saved, and in a voyage to New Zealand, 100 miles more. Besides this advantage, the region of storms is avoided. Around the Cape of Good Hope is the only track in which storms prevail which an emigrant ship has to pass after she has crossed the tropic of Capricorn. In future voyages the mariner, by following Capt. Godfrey's track, will, to use a sea term, "give the Cape a wide berth;" so that we may anticipate that voyages on Capt. Godfrey's track will not only be completed in a shorter period than previously, but that this improvement in navigation will confer the additional advantage of greater degree of safety from wreck.

We are assured by scientific men who are peculiarly qualified to give an opinion on this question, that the system of great circle sailing offers immense advantages; and we find America and several Continental States are already adopting Mr. Towson's table.

Discovery of a Lead Mine in California:

California is noted for her resources of every character. Every day brings to view and develops more fully her hidden treasures. The Sacramento Transcript states, on what it deems credible authority, that a large mine of lead, in an almost pure state, exists several miles north east of the emigrant road, about 11 miles above Johnson's rancho. It was discovered by two Irishmen who were emigrating to California, and who had wandered from the road several miles, in pursuit of stock. They at once supposed it to be a silver mine, and that their fortunes were 'made.' They brought a large quantity to Mr. Johnson's rancho; it was examined and found to be very rich lead ore, containing probably 95 per cent of lead. Vast quantities could readily be obtained without the sinking of a shaft, or the driving of a level, since the ore is represented to lie upon the surface of the earth in large boulders. In course of time it is quite probable that the mine will be worked, and as no scientific examination has been made, it is fair to presume that the ore contains a fair proportion of silver, the latter being generally found to a greater or less extent in all lead mines.

* Fifty-one members of the assembly, and 8 members of the senate, were absent when the vote was taken. Of those who were absent from the assembly, 43 were democrats, and 8 whigs. The bill was carried by a party vote in both houses; although whigs in the city of New York, representing a taxable capital of fifty millions of dollars, signed a paper urging the passage of the tax bill.

STATEMENT OF THE SEVERAL ITEMS OF EXPENDITURE OF TRANSPORTATION PER PASSENGER AND PER TON PER MILE ON THE UTICA AND SCHENECTADY RAILROAD.

UTICA AND SCHENECTADY RAILROAD.	Amount.	Allotted to passenger transportat'n	Allotted to freight transportat'n	Per passenger per mile.	Passengers per mile run.	Freight per ton per mile.	Freight per mile run.
<i>Expenses of Maintaining Road.</i>							
Repairs of road bed and railway, excepting cost of iron, (see Law).....	\$44,789 24	31,821 64	12,967 60	cts. 0-142	cts. 13-84	cts. 0-272	cts. 13-856
Depreciation of way.....	819 00	592 10	236 90	0-002	0-25	0-005	0-253
Cost of iron used in repairs:—							
Allotted to passenger transportation, length in feet, weight in lbs. }							
" freight " " " " }							
Repairs of buildings.....	2,671 14	1,898 50	772 64	0-08	0-83	0-016	0-824
Repairs of fences and gates.....	24,470 85	17,392 54	7,078 34	0-78	7-56	0-149	7-563
Taxes on real estate.....							
Totals.....	72,750 26	51,694 78	21,055 48	0-230	22-48	0-442	22-496
<i>Expenses of Repairs of Machinery.</i>							
Repairs of engines and tenders.....	26,188 03	18,612 99	7,575 04	0-083	8-09	0-159	8-094
Depreciation of do.....							
Repairs of passenger and baggage cars.....	22,656 36	22,656 36		0-101	9-85		
Depreciation of do.....							
Repairs of freight cars.....	14,032 23		14,032 23			0-295	14-995
Depreciation of do.....							
Repairs of tools and machinery in shops.....	3,024 48	2,149 94	874 54	0-009	0-94	0-018	0-935
Incidental expenses, including oil, fuel, clerks, watchmen, etc., about shops.	5,406 22	3,842 45	1,563 77	0-017	1-67	0-033	1-670
Totals.....	71,307 32	47,961 74	24,045 58	0-210	20-55	0-505	25-694
<i>Expenses of Operating the Road.</i>							
Office expenses, stationery, etc.....	1,214 56	582 20	632 36	0-002	0-25	0-013	0-675
Agents and clerks.....	12,984 28	6,340 46	6,643 82	0-028	2-76	0-139	7-099
Labor, loading and unloading freight.....	7,806 72		7,806 72	0-000	0-00	0-164	8-342
Porter, watchmen and switch tenders.....	1,483 23	1,483 23		0-007	0-66	0-000	0-000
Wood and water station attendance.....	4,311 37	3,064 59	1,246 78	0-013	1-33	0-026	1-333
Conductors, baggage and brakemen.....	10,273 39	7,697 64	2,575 75	0-034	3-34	0-054	2-752
Enginemen and firemen.....	12,827 00	8,139 00	4,688 00	0-036	3-54	0-098	5-009
Fuel, coal and labor preparing.....	33,887 11	24,085 07	9,802 04	0-107	10-47	0-206	10-464
Oil and waste for engines and tenders.....	3,732 00	2,652 50	1,079 50	0-012	1-15	0-022	1-153
" freight cars.....	2,204 16	1,563 50	640 66	0-007	0-68	0-013	0-685
" passenger and baggage cars.....							
Loss and damage of goods and baggage.....	3,872 61	2,865 19	1,007 42	0-013	1-24	0-032	1-076
Damages for injuries to persons.....	5,587 75	5,587 75		0-026	2-43	0-000	0-000
" to property, including damages by fire and cattle killed on road..	1,983 60	1,983 60		0-009	0-86	0-000	0-000
General superintendence.....	5,986 03	4,254 53	1,731 50	0-018	1-86	0-036	1-850
Contingencies.....	55,962 47	5,872 21	50,090 26	2-027	2-55	1-052	53-526
Totals.....	164,116 28	76,171 47	87,944 81	0-339	33-12	1-845	93-964

Gorgia.

Central Railroad.—A meeting of the stockholders of this company was recently held at Savannah (pursuant to a resolution of a previous meeting held on the 6th of July last) at which the following important measures were adopted.

The committee appointed by the meeting in January, to investigate the affairs of the Muscogee railroad company, and also suggest a plan for building the twenty-one miles of railroad from Fort Valley to connect the South-Western railroad with the Muscogee branch, submitted through their chairman, R. R. Cuyler, Esq., a report, recommending a subscription of \$100,000 to that object, which was unanimously adopted.

Mr. Cuyler then submitted the following resolutions, which after much discussion were adopted by a very large majority.

Whereas, the capital stock of the company now stands at \$3,000,000, which has been appropriated as follows, to wit: \$205,790 to banking, and the residue to road purposes.

And whereas, the road and its appurtenances now stand on the books at \$3,029,154 54—thus making the road debtor for the whole bank capital, and the further sum of \$29,154 54.

And whereas, the enlargement or the depot at Savannah, the junction of the railroads at Macon—the relaying of the unfinished portion of the road with heavy iron, and a further increase of the engines and cars of the company, all imperiously demanded by the great increase of business soon certainly to come to the road, and plainly warranted

by the present earnings of the road and the expectation of that increased business:

Resolved, That it is the true policy of the company to provide at once for the speedy placing of its road and equipments in a condition suitable for the emergency, and to provide for the return of the banking capital.

Resolved, That the board of directors be and they are hereby authorized and directed to dispose of new general stock of the company, to the amount of 5,000 shares, of \$100 each—at such time or times as they may think most suitable, and that they apply the proceeds thereof, (together with such annual surplus, after paying dividends at the rate of 8 per cent per annum, as the board may find properly and safely applicable,) to the purposes above indicated.

And whereas it is reasonably to be expected that the surplus profits of the company (after paying dividends at the rate of 8 per cent per annum to the general stockholders, and the rates of dividend due to holders of guaranteed stock,) safely applicable to these purposes, will, in three years, amount to \$329,154 54; and therefore that, if the course mentioned in the preceding resolutions is strictly pursued, the company will be able, at the end of three years, after expending \$629,154 54 for road purposes, to place its road and equipments in a fit and proper condition for the business it may offer—to keep the cost thereof down to \$3,500,000, and to restore the bank capital to the amount of \$200,000. And it is further believed that the net income of the company thereafter will be at least \$375,000.

Resolved, That if this expectation shall be realized, the company will then be justified in issuing additional stock to the amount of \$300,000 as

a dividend to the then holders of general stock—thus making the capital \$4,000,000—of which the road and its appurtenances will stand for \$3,800, and the residue will be for banking \$200,000.

And Whereas, it is considered just and proper that the present general stockholders should have the privilege of taking the new stock above authorized *at par* if they desire it—

Resolved, That the said new stock be offered first to the persons who hold the present 20,845 shares of old stock, in the ratio or proportion of \$24,000 of new stock for each of the said 20,845 shares—and that the offer be kept open until the 1st day of December next.

And further Resolved, That if any of the present holders of the 20,845 shares, on subscribing for new stock, shall pay one-fourth down in cash and desire time to pay for the remainder, the board of directors be and they are hereby directed to extend the time of payment, on a pledge of stock, at lawful interest, say for one-quarter six months, one-quarter nine months, and the last quarter twelve months.

Major A. Porter, offered a resolution in favor of a subscription by this company, of one hundred thousand dollars, to the stock of the Augusta and Waynesboro' railroad company—when Mr. Cuyler offered the following resolution as a substitute, which was carried:

Resolved, That it is the sense of this meeting, that this company ought to aid the Augusta and Waynesboro' railroad company, by subscribing to the stock of that company the sum of \$95,000 payable in this company's seven per cent bonds whenever it shall appear to the board of directors that this subscription is necessary to finish the road to Augusta.

On the motion of P. L. Wade, Esq., the meeting adjourned.

Indiana.

Business of the New Albany and Salem Railroad.—As an evidence of the business already being done upon this road, we will state the fact, that the train which left this place on Wednesday last took down 30,000 lbs. of freight, the produce of our farmers, several horses and mules, and in addition to this, the passenger car was filled to overflowing. Still more—at the Spurgeon Hill, two large cars filled with hogs were attached. In fact, not a trip from either end of the line has yet been made, which did not pay well, and what is better, the business seems to increase daily. So far, the business on this road has greatly exceeded the expectations of its most sanguine friends.—*Salem (Ia.) News.*

Ohio.

A bill has been introduced into the Ohio Legislature, which authorises the Cleveland, Columbus and Cincinnati railroad company to construct a railroad from Columbus, Ohio, to Aberdeen, opposite Maysville, so as to connect with the Lexington and Maysville railroad. The capital stock of the company is increased to such sum as is necessary to accomplish the work.

Indiana.

Jeffersonville Railroad.—We saw Mr. Marsh one day last week, at Shelbyville. He has made a survey between Columbus and Shelbyville, and says the work is progressing finely between Jeffersonville and Columbus. We hope the company will get their road completed to the latter place during the present year.

We understand that the Shelby company object strongly to the construction of that part of the line between Columbus and Shelbyville, and that they intend to make an effort to enjoin the Jeffersonville company from making it. We apprehend that may be somewhat difficult to do.

The charter for a road from this place to Muncie was so amended as to authorise its construction to Union, on the Bellefontaine road. This amendment was made in order that, if the Jeffersonville company should decline to make the proposed extension from this place, the road may be extended by others. As they have made the preliminary survey, it is desirable that they should occupy the ground, but if they should decline doing so, others will now have the opportunity of carrying the work forward.—*Rushville Repub.*

Vermont.

The directors of the Rutland and Burlington railroad have determined to extend the line of road to Swanton, which will be to the Canadian line.—It will then be only a comparatively short distance to St. John's, where it will connect with the Lake Champlain and St. Lawrence railroad.

The Montreal Herald thus describes an invention for crossing at Rouse's Point for lack of a bridge:—

The engineers have shown the independence of their resources, by a contrivance which, though not a bridge, very nearly approaches one. On the Vermont side, a very extensive pier has been made by driving piles for some thousands of feet from the shore, to such a distance from the bank as to reduce the channel to the width of 400 feet. A large vessel has been built of such dimensions as to exactly correspond with this 400 feet channel, and upon the deck of this vessel iron rails are laid. Thus, when she is swung into the gap, there will be the continuous track required for the carriages, as there would be if there were really a bridge; and when the trains have passed over, there will be again the 400 feet of clear water way for the passage of craft.

Maine.

The Portland, Saco and Portsmouth railroad company, at the adjourned meeting at North Berwick last Wednesday, voted to accept the act of the Legislature authorising them to subscribe to the stock of other roads. The specific object of this act was to empower them to aid the Kennebec and Portland railroad company. That aid is to be rendered upon the following conditions.

A piece of road is to be built by the Kennebec company, connecting their depot at Back Cove with the Portland, Saco and Portsmouth road at a point in Cape Elizabeth, some 2 1-3 miles distant from that depot. The Saco company will deliver to the Kennebec company one thousand shares of the stock in the former, provided the latter shall give their bond to deliver to the Saco company, on demand, one thousand shares in its capital stock, and to pay, until such demand is made, six per cent annually on one hundred thousand dollars; the Saco company retaining, to secure payment of the interest, the portion of the road to be built as above provided, which portion is to be run by the Portland, Saco and Portsmouth company, and the surplus of income over the interest is to be paid to the Kennebec company.—*Advertiser.*

Illinois.

Railroads in Illinois.—The passage of the Central railroad law in such a shape as will ensure the completion within less than four years from this time, of a railroad from the junction of the Ohio and Mississippi rivers to the southern termination of the canal, with branches thence to Chicago and Galena, will alone speedily raise our young State to the first rank in the confederacy.—Added to this, we have assurances that the Alton, Mount Carmel and New Albany road will be built by a grant of land from the general government; and still further, a bill has passed for continuing the Alton and Sangamon road to Bloomington, where it will form a junction with the Central road; and yet again, we have the Illinois town and Vincennes road and the Alton and Terre Haute road—all of which combined will develop the immense resources of Illinois, and, by means of immigration and increased wealth, will, in a few years, affect a liquidation of the State debt.—*Springfield Register.*

New York.

At a recent meeting at Utica, N. Y., of those favorable to the building of a road to run from that place and intersect the New York and Erie railroad, a committee reported in favor of laying the route through the valley of the Unadilla and Susquehanna, cutting the New York and Erie road at Deposit, as a terminus, with a branch from a point four miles north for the purpose of receiving coal. The road will be 84 miles long, and will cost \$1,680,000.

Buffalo and State Line Railroad.—Some changes have been made in the directorship of this road which will add to the efficiency of the company. The executive committee now consists of George Palmer, Dean Richmond, Fred. Whittlesey, Asa Sprague and Joseph Field, all strong men and familiar with railroad matters. The Fredonia Censor states that the work is all under contract, the right of way secured, the grading, bridging and clearing of the track in a tolerable state of forwardness; the iron, etc. for the superstructure bought and locomotives and cars contracted for, and before the first of January next the iron horse will be running the whole distance between Buffalo and Erie.

The Pacific Railroad.

An intelligent gentleman who has been by way of the overland route to California, thus speaks of this enterprise:—

"A railroad along that route is a stupendous humbug. There is not sufficient timber between the Missouri river and the Sierra Nevada mountains to build one mile of the road. But the greatest objection is, there is no paying country—no productive land. Excepting the Salt Lake valley, Carson's valley, east of the Sierra Nevada, and a small district about Fort Bridger, east of the Salt Lake, none of it can be called habitable, after passing one hundred miles west of the Missouri river. This is nature's interdict. A railroad can never pay over a vast desert. Mountains present no obstacle that genius and industry may not surmount; but here is a ruinous space—a dead void—that totally negatives the idea of a railroad."

Pennsylvania.

Leggett's Gap Railroad.—A correspondent writing from Providence, Luzerne county, Pa., says:

"The Leggett's Gap railroad company have commenced laying a new track from Scranton (Lackawanna Iron Works) with heavy T rail of the best quality, and have several miles ready for the cars. The company have commenced mining coal preparatory to stocking the road, which will be finished in a few months, forming a connection with the New York and Erie railroad at Great Bend. This road will be the medium for supplying Western New York with coal.

The stock of the Codd's Gap and Delaware railroad, from Scranton to the Delaware Water Gap, is all subscribed for, and we may reasonably expect, within eight months from this time to breakfast at home and dine in New York city. Real estate is advancing rapidly."

Hanover Branch Railroad.—The Hanover (Pa.) Spectator says that Mr. Gonder, the enterprising railroad contractor, and Mr. Sicles, Chief Engineer, have arrived in that borough, and conferences have been held with the board of directors. It is now expected that this road will be commenced within a very early period.

The Erie Observer states that the Franklin canal company, "authorised to construct a railroad to Lake Erie," has purchased iron sufficient to lay the entire track of the Erie and Ohio section of the road. The iron was bought on very reasonable terms, and is of best quality—fifty-six and one-half pounds to the yard, and of the same pattern used on the New Haven road. A portion of the iron is to be delivered on the 13th of June next, and the balance as fast as wanted. This line between Erie and the Ohio State-line is an important one, and it is in a fair way of being completed as early as those portions which lie in New York and Ohio.

Railroad Traffic.

The earnings of the Macon and Western road for February were.....\$19,588 92
February, 1850..... 19,657 63

Decrease..... \$70 71

New York and New Haven Railroad.—The receipts of the New York and New Haven road continues to show a very large increase over the same period of last year. The earnings for February were, after paying off all connecting roads:

1851.....\$50,726 48
1850..... 30,300 11

Excess 66½ per cent..... \$20,426 37

The aggregate traffic of January and February was—

1851.....\$106,722
1850..... 60,523

Increase in two months over 75 per cent..... \$46,199

To Contractors.

OHIO AND PENNSYLVANIA RAILROAD.
Sealed proposals will be received at the office of the Ohio and Pennsylvania Railroad Company, in Pittsburgh, until Thursday, the 20th day of March next, for laying the Track from Pittsburgh to Massillon, a distance of 107 miles. Specifications and forms of proposals may be obtained at the office in Pittsburgh, for two weeks previous to the letting, on application to Solomon W. Roberts, Chief Engineer. The proposals must be in accordance with the printed forms, and addressed to the President of the Company.

WM. ROBINSON, Jr., President.
Pittsburgh, Feb. 6th, 1851.

AMERICAN RAILROAD JOURNAL.

Saturday, March 15, 1851.

The Stock and Money Market.

Since our last the aspect of the money market has not materially changed, though the tendency of stocks have been downward. Money for all legitimate purposes is still abundant, and is likely to continue so. The decline in stocks is the natural reaction of the speculative feeling which has so long prevailed, and which carried many of the fancies beyond their value. This reaction affects by sympathy all branches of business, and gives a general dullness to operations of all kinds. But as the business of the country is sound, and as most of our railroad enterprises are confined to legitimate objects, we may soon expect to witness an improvement. We have no doubt but money will continue to be had at fair rates for all proper objects during the season.

Since our last paper was made up, the great sale of the Erie railroad bonds to the amount of \$3,500,000 has taken place. The prices averaged something over 90, and the sale is regarded by all parties a very favorable one for the company. The time selected for the sale turned out to be very unfortunate. The present reaction was at its height, and several large failures, and rumors of others, had thrown the public mind into a very excited state, and created a feeling of distrust for all securities. But in face of all this, and in spite of the most determined efforts to break down the sale, the company has been most triumphantly sustained. We never before had any idea of the strong hold which this great work has upon the good will of our citizens, till we witnessed the immense crowd which the sale called together, and the enthusiastic manner in which the bids were crowded upon the auctioneer. We have no doubt but the company could obtain an additional loan of an equal amount, at the same rate, if it could show a good reason for asking it. This work has the confidence of the New Yorkers, and they determined to sustain it. This confidence is founded upon the able management of its affairs; but the directors must remember that the most critical period in the success of this great work will not occur, until after it is opened for business. Such is the experience of all similar works.

But little has been done during the past week in the negotiations of bonds of new works. The feeling in the market has given a temporary check to operations. The price of rails remain about at last quotations. A large amount of orders have recently gone abroad, and we shall soon see what effect they will have upon the price.

In the meantime, no check seems to have been given to the number of new projects which are constantly coming forward. Every settled portion

of the country is determined, not only to have railroads, but to have them at once. It cannot brook delay; and we may set it down as a fixed fact, that railroads will be built till almost every farmer in the country shall be within convenient distance of one. In this state of things it is fortunate that the means of most of our leading lines are secured.—These, as soon as they are completed, will be able to render essential aid to collateral lines branching from, or connecting with them.

SALES OF STOCK IN NEW YORK.

	March 5. Sales.	March 12. Sales.
U. S '67 Loan.....	115½	116
Erie R.R.....	81½	80½
Harlem R.R.....	68	67½
Stonington.....	41½	42
L.I. R.R.....	23½	23½
Norwich & Wor....	61	63
Del. & Hudson.....	130	133½
Reading.....	61½	60½
Morris Canal.....	17½	18
Erie income.....	93	91½
" " Bonds.....	103	104
Canton.....	53	55
Farmers Loan.....	64½	67½

SALES OF STOCKS IN BOSTON.

	March 4.	Mar. 11.
Old Colony Railroad.....	67	68½
Boston and Maine R.R.....	106	105½
Eastern Railroad.....	103½	103½
Fitchburg Railroad.....	111½	111½
Michigan Central Railroad.....	94½	92
Northern Railroad.....	70½	68½
Vermont Central Railroad.....	34½	34½
Vermont and Mass. R.R.....	—	28½
Western Railroad.....	106½	105½
Ogdensburg Railroad.....	38	39½
Rutland Railroad.....	59	58½
Boston and Worcester Railroad.....	104½	104
Rutland Railroad Bonds.....	88	85
Ogdensburg Railroad Bonds.....	99½	99
Vermont Central R.R. Bonds.....	92½	92
Boston and Providence R.R.....	85½	83½
Philadelphia, Wilm'gton & Balt.....	30½	29½
Concord R.R.....	55½	55½
Manchester and Lawrence.....	90	90
Worcester and Nashua.....	51½	51

Baltimore and Ohio Canal.

The Cumberland Civilian states that at a meeting of the board of directors of the Chesapeake and Ohio Canal, on the 28th ult., in Washington, a resolution was passed to reduce the present rates of toll on coal transported on the canal to 2½ mills per mile per ton, which will amount to about 45 cents per ton from Cumberland to Georgetown.

Ohio.

Railroad to Cleveland.—This road is in better condition than we supposed it would be, under the circumstances. A considerable portion of the rail has been laid this winter, and the grade being newly thrown up and not yet graveled, it could not be otherwise than that the road would be somewhat uneven. The work appears to be remarkably well done. It is the intention to put the planking down on a bed of gravel all the way, so as to make it entirely solid and reliable for any speed that may be required. It is a great enterprise, most nobly pushed to completion by the energy of Alfred Kelly. It must have been gratifying to him to see this glorious result of his labors, and to hear the praises of his name that were on every tongue at Cleveland. We cannot doubt that the road will be eminently prosperous, and will form a very important link in the great line of travel from west to east. Its easy grades and vast stretches of straight lines will make it one of the fastest travelled lines in the Union.—*State Journal.*

New York.

The Genesee Valley railroad has been organized at Rochester. The road will cost \$800,000. The directors are:—James Faulkner, Dansville; Charles H. Garroll, Groveland; James S. Wadsworth, Genesee; John Venum, Mt. Morris; D. H. Fitzhugh, Groveland; Allen Ayrault, Genesee; Elijah F. Smith, Wm. Fitkin, Azariah Boedy, Amon Bronson, Levi A. Ward, Freeman Clarke, Rochester. The directors subsequently elected James S. Wadsworth, Esq., president of the board, and Freeman Clarke, Esq. secretary and treasurer. The southern terminus of the road is to be in the town of North Dansville.

Railroad from Canandaigua to Niagara Falls.
—A company has been organized with a strong board of directors to build a road from Canandaigua to Niagara Falls, being an extension of the Corning and Canandaigua road, now nearly completed. The road is to be of the six feet gauge, corresponding with the Corning and Canandaigua and Erie roads, and will form a complete line of wide track from New York to Niagara Falls. Sufficient stock has been subscribed to authorize the formation of the company.

Shipments of Gold from California.

We are indebted to Messrs. Winter & Latimer, of San Francisco, for the annexed authentic statement of the amount of gold shipped from California, from its first discovery in 1849 to the present time:

Gold dust shipped by steamers, from 1st April, 1849, to 31st December, 1850.....	\$34,570,265
Estimated to have been taken by passengers.....	4,571,500
Shipped to foreign Pacific ports and Europe, coined, manufactured into jewelry in California, and forwarded per sailing vessels, as per Custom House reports.....	4,576,042
Carried overland and coastwise by miners from Mexico, Chili and Oregon, shipped by merchants without manifest entry, and amount at present in possession of miners, merchants, &c.....	19,000,000

In the above estimates the value of gold dust has been computed at \$16 per ounce troy. To this amount should be added \$1.50 the mint value, say.....

Total..... \$68,587,591

[Baltimore American.]

Louisville and Nashville Railroad.

We observe with much pleasure that the citizens of Nashville, Tennessee, and Louisville, Kentucky, as well as the people in the intermediate country along the contemplated line of railroad, are becoming quite in earnest on the subject of building a railroad from Nashville to Louisville.

Meetings have been held in Louisville and in several counties along the line, and spirited resolutions adopted expressive of their approbation of the project; and we now observe that Nashville has also moved in the matter, and has at a public meeting appointed the following delegates to attend a convention at Elizabethtown on the 11th inst.; the object of which is to devise the ways and means to construct the road by the most useful and practicable route, viz:—Eugene Underwood, Esq; Col. V. K. Stevenson, W. N. Bilbo, Esq; Dr. C. K. Winston; Dr. W. K. Bowling; Dr. W. P. Jones; Jno. E. Gleaves, Esq; D. F. Carter; E. P. Connel; S. D. Morgan, and A. W. Johnson.

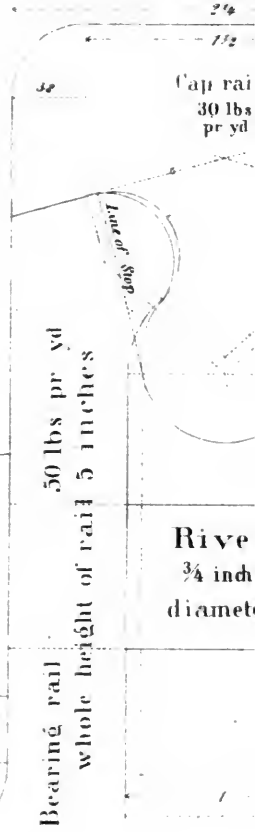
Full sized Sections OF THREE-PART-RAILS.

Fig 1 shows a rail of 150 lbs per yard intended for a track entirely of iron.
Fig 2 shows a rail of about 65 lbs per yard to be laid on wooden Cross-ties.

The rivets holding the bearing rails to be about 2 feet apart, with an extra one at each joint of those rails.

The rivet holes and stop notches to be oblong.

The stops to be an inch long and at every 4 or 5 feet along the Cap rail.



whole breadth of

Iron Cross-tie at every Joint of bearing rails.
Say every 10 feet.

4 rivets (1/2 inch) at each joint making 8 rivets in each cross-tie

Width and depth of Cross-tie each 5 1/2 inches

End of Cross tie on outer line of rail.

The dotted lines show the Cross Section of the tie.

Fig. 1.

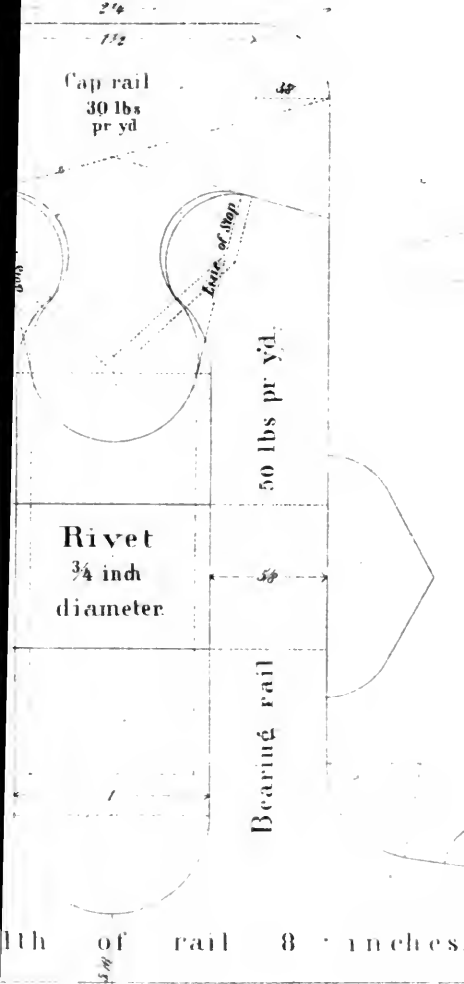
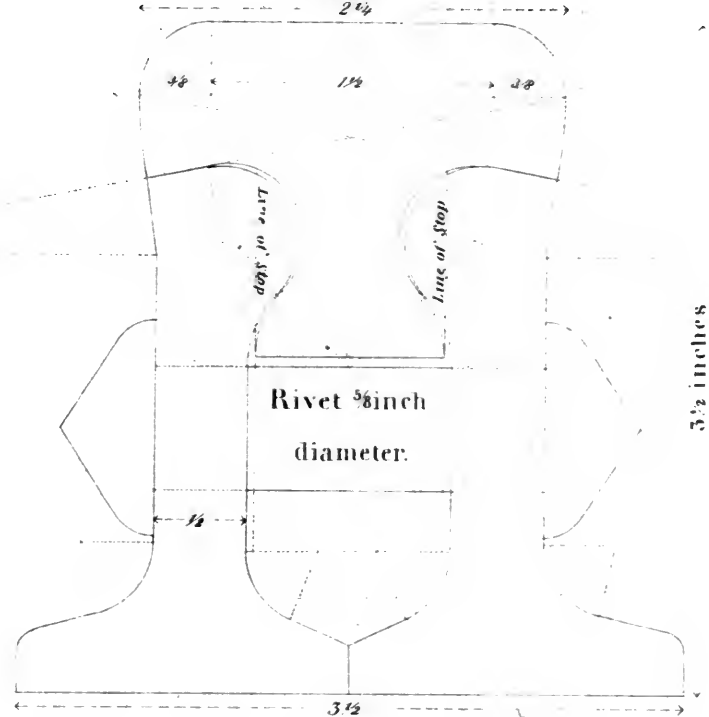


Fig. 2.



The dotted lines shew the Cross Section of the tie.

It is manifest that the Shape and proportional weights of the Cap rail and bearing rails may be considerably varied retaining the principle of the Combination. The Stem of the Cap rail may be extended downwards, as far as desired into the Space between the bearing rails and if it is carried below the rivets and punched, to permit them to pass through, the Stops and their notches will be dispensed with. Thus if the Stem of the Cap were run down as shown by the dotted lines in Figs 1 and 2 the weight of the rail would be increased about 17 lbs in the first and 10 lbs per yard in the second case.

From the subjoined resolution of Col. Stevenson, which was unanimously adopted by the meeting, we infer that the citizens of Nashville are thoroughly aroused to the necessity and importance of a well digested system of internal improvements:—

Resolved, That a public meeting be called thro' the newspapers, to be held at the Court House, in Nashville, on Thursday, 20th of March next, to take into consideration the subject of internal improvements in Middle Tennessee.

European and North American Railway.

In the Massachusetts Legislature, on Friday last, Mr. Paine, of Melrose, presented the petition of John A. Poor, Elijah L. Hamlin, and Anson G. Chandler, executive committee for the State of Maine, to promote the construction of the European and North American railway; for an appropriation of the proceeds of the public lands lying in the State of Maine, in aid of the same.

The matter was referred to a special committee.

On the 8th of March, the speaker announced the special committee on the petition for aid to the European and North American railway, as follows:—Messrs. Cushing, of Newbury, Curtis, of Boston, Paine of Melrose, J. M. Earle, of Worcester, Wood, of Fitchburg, Barstow, of Somerville, Branning, of Monterey, and Trask, of Salem.—*Advertiser.*

Memphis and Charleston Railroad.

Gov. James C. Jones, President of this company, recently visited New Orleans for the purpose of securing subscriptions to this work. At the close of the first evenings' address, subscriptions to the amount of \$60,000 were received. We give below a portion of the Governor's speech:—

"Massachusetts (he said) has invested 50 millions in railroads. He spoke of the New York canals and roads. Pennsylvania was tapping the Ohio, and would soon communicate with St. Louis. Virginia also would reach the Ohio and Guyandotte. South Carolina and Georgia would come to the mouth of the Ohio. Georgia had 860 miles of railroad in operation, and 500 more in construction. Mobile was making a determined effort for a part of the trade. New Orleans must not rely to confidently on the Mississippi. By degrees it was losing portions of its trade. The road from Cairo to Chicago would draw off largely. Then the road from Sandusky to Cincinnati; from Cleveland to Sandusky; the Wheeling and Philadelphia road; the Baltimore and Ohio road; the roads of Virginia, Carolina and Georgia, were all tapping the commerce of the Mississippi, and diverting it from New Orleans. This year New Orleans had lost 40,000 bales, which now went to Charleston. When the Mobile road reaches Holly Springs, there will be another loss of 125,000 bales, which maintains at the least calculation 10,000 or 12,000 persons. Memphis has a trade of 125,000 bales, its principal business, and a population of 12,000. It is 290 miles from Mobile to Lagrange, and it will cost \$2 50 per bale to deliver cotton in Mobile. It costs now \$2 50 to \$5 to deliver the same cotton in Memphis by teams. It is apparent that Memphis and New Orleans must lose all of this trade, unless they can find a cheaper means of transport. He thought the railroad from Memphis to Charleston would furnish this mode. From Decatur, on the Tennessee river, to Charleston is 565 miles, and it costs \$4 32 freight per bale. From Decatur to Memphis is one hundred and ninety miles. This can be delivered in New Orleans for \$2 92, if the railroad is made from Decatur to Memphis. This would restore to New Orleans the 40,000 bales already lost, and retain the still larger amount about to be lost, by the continuation of the Chatanooga road below the bad navigation of the Tennessee. From Mobile to Holly Springs is two hundred and ninety miles, and the freight is \$2 25. From Holly Springs to Memphis is fifty miles. The expense

of freight to New Orleans would be one-half of the expense to Mobile.

"He went into calculations to show that every hundred thousand bales led to the direct profit of New Orleans of at least \$1,000,000. All this would be lost unless the road from Memphis was built.—But this was only a link in the chain. New Orleans must aid in building the road to Jackson and connecting with New York. The road from New Orleans to New York, via Memphis, was four hundred and seven miles nearer than any other.—When the roads shall be completed, it would take only three days to travel from New Orleans to New York. In speaking of the advantage to New Orleans of the passengers, he said that Boston receives in mere portorage \$1,500,000 more than the trade of Nashville."

He instanced Massachusetts and Georgia as striking examples of the success and great advantages of railroads. In the latter State there are already six hundred and sixty miles of this sort of road; and these, he said, within two years would be increased to a thousand. Its progress, (as we have already stated) has been in population greater than any other State in the Union, (some 45 per cent within the past ten years,) and this vast increase is doubtless owing almost entirely to her railroads and manufactories. Lands within her borders which a few years ago would fetch only two dollars an acre, are now selling at twenty-five dollars.

In Massachusetts the progress in wealth, notwithstanding its sterile soil and the fact that it was so little improvable before has been almost equal to that of Georgia. In Boston alone, since the completion of the various roads that lead from her, with giant arms, to all the surrounding States, the value of property has increased from forty-nine to one hundred millions.

Maine.

Atlantic and St. Lawrence Railroad.—This railroad was opened for traffic to Bethel on the 10th instant, making 70 miles in all in running order. A section of 21 miles more will probably be opened in July next. This will carry the road to Gorham, New Hampshire, where a large hotel is in process of erection, which will be in readiness for the accommodation of travellers to the White Mountains and elsewhere, as soon as the road is opened to that place.

A meeting of the stockholders of this road was held in Portland on the 6th inst., for the purpose of taking into consideration the proposition of Messrs. Wood & Black, the contractors, to complete the whole line in July, 1852, instead of January 1, 1853, the time stipulated in the present contract. To secure the completion of the work in July, nothing is wanting but that the payments should be made within that time to correspond with the progress of the work. After a full discussion of the subject, it was unanimously voted to raise the further sum of \$800,000 upon a mortgage of the road, making the whole loan for which the road is to be pledged, \$1,500,000. As we presume there will be no difficulty in negotiating these bonds, we may set it down as a fixed fact that the Portland and Montreal railroad will be in operation in one year from July next!

At the same meeting it was voted to authorise the directors of the Atlantic and St. Lawrence railroad to unite with the Androscoggin and Kennebec railroad, with or without other parties, in taking a lease of the Penobscot and Kennebec railroad, on such terms as may be agreed upon by the directors provided the required authority to make such lease shall be granted by the legislature.

This will secure the completion of the Penobscot and Kennebec railroad, and will probably be the means of extending the broad gauge to Bangor, and ultimately through the State into the British Provinces.

Blake's Patent Fire-proof Paint.

A long and most satisfactory experience has given to the above named composition, the character of a standard article, and takes it entirely out of the class of novelties and quackeries which are so common at the present day. We believe it to be the best protection against fire, of anything in the shape of paint. It is equally valuable in protecting every kind of material from the action of the atmosphere.

This paint, when first taken from the mine, can be easily reduced to a paste, by the thumb and finger; but it very soon hardens into stone on exposure to the atmosphere. In the preparation of it, before it has time to harden, it is reduced to a fine powder. This, on being mixed with oil, and applied as paint, assumes in a few months the consistency of stone. It so thoroughly incorporates itself into the grain of the wood, that as soon as the paint becomes hard, it is almost impossible to separate the two. It has no tendency to scale, to fly off, or to chap. It fastens itself to whatever it is applied, and soon encases it in a covering of stone. The thickness of the covering of course may be made to depend upon the number of coatings applied.

These are facts attested by the use of this article for six or seven years. The absorption or evaporation of the oil has no effect upon the body of the paint, as its cohesive qualities are entirely independent of this; the use of the oil being necessary only for the purpose of applying it. Such being the case, it is easy to see that this article must be invaluable for the covering of the wood work of the inside of depots exposed to fire, as well as to all other buildings. It costs only about one-half as much as paints of which lead is the base, and in durability, for aught that can be seen at present, is vastly greater.

This article has received the highest premiums awarded at the State Fairs of Ohio, New York and Massachusetts, and has been analyzed by some of our most eminent chemists, among whom may be named Prof. C. T. Jackson, of Boston, Dr. Chilton, of this city, and Dr. Locke, of Ohio, all of whom concur in pronouncing it admirably adapted for use as a paint.

It is now used by a number of railroad companies, among which may be named the Philadelphia, Wilmington and Baltimore, Cumberland Valley, Camden and Amboy, the Michigan Central, besides a large number of other roads. The superintendents of these roads, we understand, speak in the highest terms of this article, and use it almost exclusively in all cases where paint is required.

Very large quantities of a spurious article has been thrown in the market, from the currency obtained for the *genuine*, which is sold by Mr. Blake and his agents only. Mr. Blake's reputation as a man, and a person of large property, is a full guarantee that purchasers will get a good article, or that if any mistake should arise in this respect, they will have their money refunded, which is of no small importance in this age of imposition.—From the above source our readers can rely upon getting what they contract for.

We have thus called particular attention to this article, because we believed that in doing so, we should confer a much greater favor upon the public than upon the patentee, though the latter we think is well deserving of a liberal patronage.

Depot for Blake's Patent Fire-proof Paint, 84 Pearl Street, New York.

New York.

Utica and Schenectady Railroad.—The following is the way fare rates adopted by the Schenectady and Utica railroad:—

From Schenectady to		
Hoffman's Ferry.....	9½ miles,	20
Crane's Valley.....	12½ "	30
Amsterdam.....	15½ "	35
Tribe's Hill.....	21½ "	45
Fonda.....	26½ "	55
Spraker's.....	35 "	70
Palatine Bridge.....	38 "	80
Fort Plain.....	41½ "	85
Garoga Creek.....	43½ "	90
St. Johnsville.....	46½ "	95
East C. Creek.....	49½ "	100
Rockton.....	56½ "	115
Herkimer.....	63½ "	130
Frankfort.....	66½ "	150
Utica.....	77½ "	156

And the same in returning.

Indiana.

The Evansville and Illinois Railroad Co., and the Wabash Railroad Co.—By an act of the general assembly of the State of Indiana, passed in Jan. 1851, the charter of the Evansville and Illinois railroad company was amended, increasing the amount of their capital stock, and authorizing the company to extend their road to Indianapolis, the capital of Indiana.

By another act, passed at the same session, the Wabash railroad company was incorporated. This company is authorized to construct a road from Vincennes, in Knox county, to Terre Haute, in Vigo county, with the power to extend the same to Crawfordsville, in Montgomery county, where it will connect with the Crawfordsville and Lafayette railroad, a work nearly ready for use. From Lafayette a road will be extended north to Lake Michigan, and east to the city of Sandusky, on Lake Erie. When these roads shall be finished, there will be a continuous railroad from this city, [Evansville,] the terminus of the Wabash and Erie canal, up the fertile valley of the Wabash and Lafayette, a distance of about two hundred miles. In its progress this road will be placed in connection with the Ohio and Mississippi railroad at Vincennes, and the Terre Haute and Indianapolis railroad, at Terre Haute.

There is a provision in the charter of the Wabash railroad co., authorizing the amalgamation of that company with the Evansville and Illinois railroad company. This, no doubt will be done.

That portion of the Evansville and Illinois railroad lying between this city and Princeton, a distance of 27 miles, will be ready for the iron the approaching summer. Arrangements are making to have a few miles finished by the 4th of July next, and it is expected it will all be completed in the course of a year.

A survey is being made of that portion of the road lying between Princeton and Vincennes which will probably be placed under contract next summer. Nature has nearly prepared the ground for a railroad between Vincennes and Terre Haute—and also between Vincennes and Point Commerce. But little labor will be required to prepare this portion of these roads for the superstructure.

The iron for the road from Evansville to Princeton has partly arrived at New Orleans, and it will all reach that place in a short time.

The financial affairs of this company are in a most favorable condition. The company does not owe a dollar beyond their present means to meet at a moment's warning. The grading, bridging and superstructure of the road is provided for by indi-

vidual subscription. The iron is paid for. There remains yet to be provided for, the furniture and equipments for the road, with a suitable number of depot buildings. The debt that may be incurred to pay for these, will be the only debt the company will owe, when the road to Princeton shall be completed.

Ohio.

Columbus and Xenia Railroad.—This road extends from Columbus the capital of the State, to the Little Miami railroad, at Xenia, a distance of 54 58-100 miles. From the report of the directors submitted at a meeting of the stockholders, held at Columbus on the 15th of Feb. ult. We learn that the total cost of construction has been \$1019,170 61. Of the whole line, about twelve and three-fourths miles was constructed by the Little Miami railroad company, under an agreement between the two companies, by which the former stipulated to construct this portion of the road. Upon the completion of the whole road, the Little Miami company were to give up the part constructed by them to the Columbus and Xenia, and take stock in the latter to the amount of the cost of this section. This has been done, and a certificate for 4000 shares of stock amounting to \$200,000 has been issued to that company in part payment. The total cost of the balance of the road, inclusive of right of way, depot grounds and buildings, discount on bonds sold to purchase iron, &c., amounts to \$824,011 95. Deduct for net earnings of road, applicable to payment of interest \$37,449 56, and we have as the cost to Jan. 1, 1851, \$786,562 19; adding \$232,608 62, as the cost of that part of the road constructed by the Little Miami railroad company, and we have \$1,019,170 61 total as the cost of the road. The report also states that the net earnings for the last two months have been at the rate of \$67,000 a year—upwards of 6 per cent per annum upon its cost including expenses for additional machinery, &c., necessarily incurred to do business as it should be done.

The road, 54.58 miles in length, was completed in February 1849, and the first passage from Columbus to Xenia was made on the 22nd of the same month in 1850. There are 51 miles of straight line.

Of the whole distance 10.77 miles are level. Upon 7.82 miles the grade is 10 feet to the mile; upon 8.65 miles 20 feet; upon 12.56 miles from 20 to 30 feet; upon 9.72 miles from 30 to 39.60 feet; upon 4.70 miles 39.60 feet—which is the maximum grade.

The amount expended on the road is as follows, for graduation, masonry and ballasting \$186,595 85; for superstructure [exclusive of iron] \$47,611 16; for iron for superstructure \$269,234 90; for bridges \$34,900; and \$793,34 for sundry items. The engineering department's expense amounts to \$16,729 65. The total cost, therefore, of the road, including incidental expenses to the amount of \$8,495,51 and \$6858 75 for expenses under first organization, is \$571,309 18. The cost per mile is then \$13,720 20. The average total cost from Columbus to Xenia will amount to \$15,500 per mile. The expenses of right of way, water stations and fixtures, buildings and for locomotives and cars, are \$82,880 23. By adding to this amount \$571,309 18 the cost of construction as above the total cost east of Greene county is \$663,999 41. The Little Miami company expended on Green county \$232,608 42. The whole cost then, by this addition is \$886,607 83.

The receipts of the company for ten months, for carrying passengers and freight, amounted to \$66,

365 67. The expenses for the same time were £28,916 11. The company run 4 locomotives only, but anticipate this spring's business will demand as many more.

Mississippi and Atlantic Railroad.

Some misconception has prevailed relative to the present situation and prospects of the Mississippi and Atlantic railroad, the route of which takes the originally projected line of the great Cumberland road from Terre Haute to Illinoistown opposite to St. Louis; thus completing the last and most direct link in the great system of railway communication now so nearly accomplished between the Atlantic cities, and the emporium of the west.

My duty to the stockholders engaged in this enterprise may justify a concise statement of the facts necessary to a correct apprehension of the case.

In conformity with an act passed by the general assembly of Illinois, under the title of "An act to provide for a general system of railroad corporation," articles of association were entered into for the purpose of "constructing, owning, and maintaining a railroad" as set forth in said articles, a copy of which is filed, according to law in the office of the secretary of State.

Having fully complied with the requisitions of the law, the act constitutes the association of a corporate body for the term of fifty years, from the 12th day of October 1840, which is the date of entering said copy on file.

The 22d section of the general law, which is somewhat prolix and ambiguous, proposes to reserve to the legislature the right in certain cases to fix the route and termini of roads, which shall not be constructed without its express sanction by a law to be passed thereafter.

Although well assured not only by our own judgment, but by the opinion of eminent and distinguished jurists, that this reserved power could not be exercised to our prejudice, it was deemed advisable by a majority of the board of directors, that, in order to prevent a possible misconception on the subject, which might in some degree prejudice the sale of stock, we should request of the legislature their "express sanction" to our route and termini.

In our application to that body we remark:—That "having complied with all the requisitions of the law which invites the citizen to bestow his time and his means upon those works of permanent utility which are calculated to promote the general welfare; having, with much labor and expense, completed an accurate and scientific survey of the route, over a great portion of which, the right of way has been secured, we now request that express sanction on the part of the legislature of the State which the terms of the act indicate, and which is desirable to give character and efficiency to our enterprise, by relieving us from all misconception relative to the legitimate construction of the general law under which we are incorporated."

This application was rejected, in the several forms in which it was presented, and had it been in the power of the legislature to destroy our corporate existence, and deprive us of our property and our rights, the result might have been disastrous to both.

Fortunately however for the safety of the people, they possessed no such power.

It gives me much satisfaction to assure the friends of this great and useful enterprise, that its prospect of entire success and early accomplishment is in

the highest degree flattering, and that no effort shall be wanting on the part of the directors to meet the just expectation of the stockholders, and of the public at large.

WM. S. WAIT, President.
Greenville, Ill. Feb. 24, 1851.

Illinois.

Mississippi and Atlantic Railroad.—In another part of our paper we give a statement of the president of this company in reference to the condition and prospects of this road. Below we give the substance of the report of an experimental survey of this line recently made.

The commencement of the road is to be at some convenient point on the State line, and connecting with the Terre Haute and Richmond railroad is to run through the counties of Clark and Cumberland and through the north west corner of Jasper county, and through the county Effingham, and to Vandalia, in Fayette county, and thence through Bond and Madison counties, and through or near the north west corner of St. Clair county, terminating on the Mississippi river at or near Illinoistown, so as to touch as near as can be, a point opposite the eastern termination of the contemplated Pacific railroad. The whole distance is one hundred and sixty miles. According to survey the road will commence about three miles west of Terre Haute, and one mile north of the National road. It will terminate on the west, at a short distance north of Illinoistown, and opposite Bloody Island: to which latter place it is to be ultimately extended.

The maximum grade is 40 feet per mile, with no curves having a less radius than 5930 feet. There are to be five divisions in construction of the road; the first extending from the State line to Greenup; the second, from the latter place to Errington; the third from Errington to Vandalia; the fourth from Vandalia to Pocahontas; and the fifth from Pocahontas to the Mississippi river; The estimated cost for grubbing, grading, and bridging and average length of each, are as follows: of the first division \$308,504, and length 36.83 miles; of the second division \$185,210, length 25.44 miles; of the third division \$100,477, length 28.52 miles; of the fourth division \$140,808, length 24.83 miles; of the fifth division \$272,100, length 38.69 miles. The average cost per mile of each is, of the first, \$8,360 57; of the second, \$7,139 22; of the third, \$3,523 04; of the fourth, \$5,670 88; of the fifth, \$7,032 83. The total cost for grubbing, grading and bridging is \$1,008,091, and the average cost per mile is \$6,522 09. The whole line is to be 154.4 miles in length. In the superstructure of the road the rail proposed to be used is the T rail—60 lbs. to the yard. The estimated cost in the superstructure per mile is: for timber, ballasting, &c., \$1,880, chairs and spikes \$500, 105½ tons of iron, at forty-nine dollars, \$5,169 50, making a total of \$7,549 50. The total cost of the whole road will be, for grubbing, grading and bridging \$1,008,091, superstructure for 154.4 miles \$1,165,642 80:—Probable cost of depots, locomotives, cars, &c. for the first year's business \$185,000,—making a total of \$2,358,733 80; with an average cost per mile of \$15,276 77. The report concludes with a reference to the prospects of the road for business, and advising of the use of a late invention of George E. Sellers, for working 'grades,' by the adoption of which the surveyor of the road anticipates a great saving of expense and a more ready completion of the work.

European and North American Railway.

The *British Almanac and Companion* for 1851, under the head of Chronicle of Occurrences for 1850, has the following in regard to the European and North American railway, viz:

"July 31.—At a convention of delegates from Nova Scotia, New Brunswick, Newfoundland, Canada, and the New England States, held in Portland, United States, under the Presidency of the Governor of the State of Maine, a plan for shortening the transit between Great Britain and the United States was considered and sanctioned. The plan proposes the construction of a railway to be called the European and North American railway, which should pass through Maine and New Brunswick, connecting the great centres of industry and commerce in the United States with some convenient port on the Atlantic coast of Nova Scotia. The harbor of White Haven, near Cape Canso, was named, whence to Galway the distance is but 2,000 miles, which may be traversed by powerful steamers in five days. A bill for incorporating the European and North American railway was subsequently passed unanimously by the Legislature of Maine."

At the time of the assembling of the Portland Convention, the railroad had been extended East, as far as Waterville on the Kennebec river. The convention proposed to extend a line of railway from the valley of the Kennebec through New Brunswick to the eastern coast of Nova Scotia.—We learn that the road is to be forthwith extended to Bangor, fifty miles further east, and that the means for the accomplishment of the same, in two years time, have been secured. The mode in which this has been effected is this, the Atlantic and St. Lawrence railroad, and the Androscoggin and Kennebec railroad, both of them on the broad gauge, or rather the medium broad gauge of 5½ feet—have entered into agreement to take that portion of the road from Waterville to Bangor, on a lease of 20 years, paying 6 per cent per annum on the cost. This secures the necessary means, and the road is to be put under contract and completed in two years. From Bangor to St. John the survey has been completed, and the Legislature of New Brunswick, now in session, have under consideration the subject of a grant for a charter thro' that province, and a similar law is under consideration in Nova Scotia. As soon as the charters are obtained, giving concurrent powers to the same company in Maine, New Brunswick and Nova Scotia books of subscriptions are to be opened for the whole line. It is proposed in each province to adopt a law similar to the Canadian Facility bill, guaranteeing one half the amount of line in each province.

Scarcity of Silver Coin.

A correspondent of the Journal of Commerce, alluding to the uneasiness that prevails, in business circles, lest we should be left without a sufficient supply of silver coin, says:

"It is clear that the price of silver must be lower than it is in Europe; otherwise shippers would not export it; it costs, I presume, at least 5 per cent, (say 3 per cent premium, and 2 per cent charges and profit,) to place it where it is wanted. It seems curious that the continental powers should insist on their people using for currency, silver, which is so much dearer in proportion than gold; and much more inconvenient. But as they will do so, the silver will go there, until they have the necessary supply, I look on it in the same light,

as if they should compel those who are fond of poultry, to eat woodcock or pheasant, instead of barn door fowl. But probably before a great while the powers of Europe will find out their mistake; and then the tide will run the other way. If a demand should spring up for flour, we should think it wrong, if laws should be passed to prevent its export; even if we were afraid the export would advance the price."

State Debt of Ohio.

The Cincinnati Gazette gives the following statement of the State debt, from the canal fund commissioners' report:—

On the 1st day of January, 1851, the foreign debt of the State was \$16,566,773 69, and the domestic debt \$449,001 70—making the total debt of the State, January 1, 1851, \$17,015,775 39. The total debt of the State on the 1st of July, 1845, amounted to \$18,563,391 89, so that there has been a reduction of the debt in five years of \$1,547,616 50.—During 1850, Ohio stocks to the amount of \$2,845,910 33 were redeemed by the issue of new stocks to the amount of \$2,600,000. Thus 5 per cents of 1850, to the amount of \$374,000, and 6 per cents to the amount of \$2,469,190 33 were redeemed by the issue of \$1,000,000 of 5 per cents payable after 1855, and \$1,600,000, payable at 1875—the stock issued by \$244,190 53. This excess was paid with the premiums received on the exchange of stocks, which ranged from 2 to 16 per cent and amounted with interest to \$364,264 96.

The difference in value between the 5 per cents issued and the 6 per cents redeemed is \$136,000, so that the total gain to the State by this exchange of stocks is half a million of dollars. The total receipts from tolls and the general revenue from March 15, 1845, to November 15, 1850, were \$10,030,423 89, and the total receipts from all other sources were \$4,791,703 34, and the excess of receipts over expenditures during that period are \$1,093,600 76.

There is \$1,429,981 52 of 7 per cent State stocks falling due this year, and the commissioners say that of the above excess or balance the sum of \$976,257 78 is applicable to its redemption, and that the resources applicable to the redemption of the State debt during the current year, will much exceed the balance to be provided for, and they say that "the ordinary revenues of this department will, therefore, be sufficient for the entire redemption of this State stock."

The report states that the State will not require to borrow any money to pay off its liabilities due in 1856. The following table, taken from the last report, exhibits the probable accumulation of the sinking fund:

	Amount of sinking fund.	Reducing debt to
1856.....	\$1,046,296	\$14,782,274
1860.....	930,832	13,851,492
1865.....	1,514,277	12,337,175
1870.....	2,026,443	10,310,032
1875.....	2,711,838	7,598,894
1880.....	3,629,041	3,959,813
1885.....	3,969,843	.....

The above calculation contemplates the complete payment of the State debt in thirty-five years.

Canal Tonnage and Tolls.

In our annual statement of the commerce of the canals, which was published soon after the close of navigation, we gave a detailed account of the receipts and shipments of property, together with the gross tonnage for several years previous; but the annexed will exhibit more clearly the effect of the reduction of tolls on some of the leading articles.

The total tonnage of the canal for 1850 was 3,076,617 tons; in 1849 it was 2,894,732 tons, showing an excess in 1850 over 1849 of 181,885 tons.—The tolls for the same period were \$3,273,899 23;

and in 1849, \$3,268,226 03. Excess over 1849, \$5,673 20. This exhibit shows that the excess of tonnage in 1850 is comparatively greater than the excess of tolls. This can be accounted for by the reduction of the rate of tolls upon certain articles in 1850. The same proportion of tonnage to tolls in 1850, that existed in 1849, would produce \$3,473,578 82, an excess above the actual receipts of \$199,679 59.

The increase of the tonnage on merchandise is supposed to have been made up mostly of articles on which the tolls were reduced. Under the head of merchandise take the following:—

1850, total tonnage.....	269,370 tons.
1849 " " " " " "	255,455 tons.

Excess in 1850.....	13,915 tons.
1850, total tolls.....	\$756,877
1849, " " " " " "	769,036

Decrease, 1850..... \$13,036

The same proportion of tonnage to tolls on merchandise in 1850 that existed in 1849, would produce \$811,843, being an excess over the actual receipts of \$54,966.

The following gives a comparative view of the business of the canal, in a few other articles, in which the tolls were reduced *one mill*:—

	1849.	1850.
Pork, tons.....	18,183	11,996
Bacon " " " " " "	4,684	5,482
Lard " " " " " "	4,940	4,977
Dom Spirits, tons.....	12,399	9,606

Total tons.....40,206 32,061

	1849.	1850.
Pork, tolls.....	\$31,575	\$15,686
Bacon " " " " " "	10,397	9,560
Lard " " " " " "	10,911	8,234
Dom spirits, tolls	20,708	12,146

Total tolls....\$73,591 \$45,026

This exhibit shows a falling off in tonnage of 8,145 tons, and \$27,965 loss in tolls, and \$15,209 less than they would have been in the rates of 1849.

It will be recollected that the west strenuously advocated a greater reduction than what was made, and if an error was then made, it was not in the reduction of one mill, but it was in not fixing the rates at a figure that would command this trade.

The diversion of western trade from Buffalo to Oswego has also considerably affected the revenue of the canals. While there has been 36,475 tons less of this trade entered the canal at Buffalo in 1850 than in 1849, the western tonnage coming to Oswego has increased 41,664 tons.

Another reason which is given for the diminished proportion of tolls to tonnage, compared with the previous year, is that the increase of tonnage has been much greater, comparatively, on the Champlain than on the Erie, and this increase is mostly on articles paying a low rate of toll.

The tons of property arriving at tide water, by the Erie and Champlain canal, with the amount and per cent of increase, was as follows:—

	1849.	1850.	Inc.	Per ct.
Erie.....	1,266,724	1,554,675	287,951	22.73
Champlain.	313,222	479,188	165,966	53

Of this increase on the Champlain canal, 120,430 tons was lumber and timber.

In connection with this subject, we would state that by the way of the Oneida river improvement, and the Oneida Lake canal, some 24 miles of the toll-paying distance on the canal is also saved to the shippers, although we believe that only a small amount of property was taken by this route last year.

The estimated value of property shipped on the canal in 1850 was, \$156,397,929; and the same in 1849 was, \$144,732,285; showing a balance in favor of 1850 of \$11,665,644.

The annexed exhibits the tons of property shipped, and the amount of tolls paid, by the several railroad corporations, during the years named:—

1850, tons.....	113,812; tolls.....	\$150,214 84
1849, tons.....	81,676; tolls.....	142,463 59

Excess, 1850. 32,136; Increase 1850.. \$7,751 25

The tonnage account shows a very handsome increase, it being nearly 30 per cent.

The season which will soon be opened will be marked in the era of our inland improvements.—With a large reduction in tolls on many of the leading articles of export or consumption, a spirited competition will be carried on at the west for a portion of that trade which had previously been carried on in other directions. As to the amount of property awaiting the opening of the canal and the lakes, in the Western States, there is some diversity of opinion. The following is the latest information we have seen:—

"We learn, from a correspondent in the west, that the whole of Indiana teems with surplus produce, which the farmers are keeping back in order to nurse the market. The prosperity of last year has placed them in a position to do so. In Wisconsin, we are sorry to learn, the crops last year have all proved a failure, and scarcely a bushel of any kind of grain will come forward."—*Albany Journal.*

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Alfred W. Craven,
Chief Engineer Croton Aqueduct, New York.

Floyd-Jones, Charles,
Alton and Sangamon Railroad, Alton, Illinois.

Gay, Edward F.,
Columbia and Philadelphia Railroad, Philadelphia Pa.

Gzowski, Mr.,
St. Lawrence & Atlantic Railroad, Montreal, Canada.

Grant, James H.,
Nashville and Chattanooga R. R., Nashville, Tenn.

S. W. Hill,
Mining Engineer and Surveyor, Eagle River,
Lake Superior.

Holcomb, F. P.
Southwestern Railroad, Macon, Ga.

Latrobe, B. H.,
Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,
Buffalo and Conhocton Valley Railroad, Bath, N. Y.

Morris, Elwood,
Schuylkill Navigation, Schuylkill Haven, Pa.

Nott, Samuel,
Lawrence and Manchester Railroad, Boston,

Prichard, M. B.,
East Tennessee and Georgia R. R., Cleveland, Tenn.

W. Milnor Roberts,
Bellefontaine and Indiana Railroad, Marion, Ohio.

Roberts, Solomon W.,
Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Sanford, C. O.,
South Side Railroad, Virginia.

Steele, J. Dutton,
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Trautwine, John C.,
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TRENTON, N. J.

FORGING.

Ranstead, Dearborn & Co.,

MANUFACTURERS OF
LOCOMOTIVE CRANKS AND CAR AXLES,

ALSO

WROUGHT IRON SHAFTING,

And All Kinds of Hammered Shapes.
Office 25 Foster's Wharf, Boston.

Samuel D. Willmott,

MERCHANT, AND MANUFACTURER OF
CAST STEEL WARRANTED SAWS,

—AND FILES—

IMPORTER OF THE
GENUINE WICKESLY GRINDSTONES

NO. 8 LIBERTY STREET,
NEW YORK.

Railroad Instruments.

THEODOLITES, TRANSIT COMPASSES, and Levels, with Fraunhoefers Munich Glasses, Surveyor's Compasses, Chains, Drawing Instruments, Barometers, etc., all of the best quality and workmanship, for sale at unusually low prices, by
E. & G. W. BLUNT,

No. 179 Water St., cor. Burling Slip.
New York, May 19, 1849.

IRON.**Iron.**

Pig Iron, Anthracite and Charcoal; Boiler and Flue Iron, Spring and Blistered Steel, Nail Rods, Best Refined Bar Iron, Railroad Iron, Car Axles, Nails, Stove Castings, Cast Iron Pipes of all sizes, Railway Chairs of approved patterns for sale by
COLEMAN, KELTON & CAMPBELL,

109 N. Water St., Philadelphia.

Stickney & Beatty,

DEALERS IN IRON AND IRON MANUFACTURERS.

AGENTS for the Balt. City Rolling Mill, from which establishment they are prepared to furnish Ellicott's round, square, and flat bar iron, puddled and charcoal boiler plates and billet iron—also agents for the sale of the Laurel, Gunpowder and Locust Grove (Balt.) forge pig irons, Locust Grove and Laurel Irons for car wheels, Caledonian boiler blooms made from cold blast iron, Old Colony and anti-Eatam nails, Wm. Jessop & Son's steel, Coleman's blister steel and nail rods, sheet, hoop, band, oval and common English iron.

No. 18 and 20 South Charles st., Baltimore.

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. J. F. WINSLOW, President

Troy, N.Y.

ERASTUS CORNING, Albany!

WARREN DELANO, Jr., N.Y.

JOHN M. FORBES, Boston.

ENOCH PRATT, Baltimore, Md

November 6, 1848.

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phoenix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehanna river; which two establishments are now turning out upwards of 1800 tons of finished rails per month.

Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.

REEVES, BUCK & CO.

45 North Water St. Philadelphia.

March 18 1849

LAP—WELDED WROUGHT IRON TUBES

FOR

TUBULAR BOILERS,

FROM ONE AND A QUARTER TO SEVEN INCHES IN DIAMETER.

THE ONLY Tubes of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER & SON, Patentees,
28 Platt street, New York.

Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron.

THOMAS B. SANDS & CO.,

73 New street,
February 3, 1849. New York.

Iron Store.

THE Subscribers, having the selling agency of the following named Rolling Mills, viz: Norristown, Rough and Ready, Kensington, Triadelphia, Pottsgrove and Thorndale, can supply Railroad Companies, Merchants and others, at the wholesale mill prices for bars of all sizes, sheets cut to order as large as 58 in. diameter; Railroad Iron, domestic and foreign; Locomotive tire welded to given size; Chairs and Spikes; Iron for shafting, locomotive and general machinery purposes; Cast, Shear, Blister and Spring Steel; Boiler rivets; Copper; Pig iron, etc., etc.

MORRIS, JONES & CO.,

Iron Merchants,

Schuylkill 7th and Market Sts., Philadelphia.
August 16, 1849. 1y33

Glendon Refined Iron.

Round Iron, Band Iron, Hoop Iron,
Square " Flat " Scroll "

Axles, Locomotive Tyres,
Manufactured at the Glendon Mills, East Boston, for sale by
GEORGE GARDNER & CO.,

5 Liberty Square, Boston, Mass.

Sept. 15, 1849. 3m37

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for rail roads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.

JOHN F. WINSLOW, Agent.

Albany Iron and Nail Works, Troy, N. Y.
The above Spikes may be had at factories: Erastus Corning & Co Albany; Merritt & Co., New York; E. Pratt & Brother, Baltimore, Md.

Bowling Iron. Stamped B.O.

Railway Tire Bars Rivet Iron
Locomotive and other Axles Locomotive Frame do
Boiler Plates Bars,
and every other description of this superior Iron.

The subscribers, agents for the sale of Bowling Iron, are prepared to execute orders for importation, especially for railway and machinery uses, with despatch from the manufacturers.

RAYMOND & FULLERTON, 45 Cliff st.

**Ibbotson, Brothers & Co's
CELEBRATED CAST STEEL**

AND

Best Cast Steel Royal Improved Files, well known as better adapted for Engineers' and Machinists' purposes than any now in use in the United States.

Every description of Square, Octagon, Flat and Round Cast Steel, Sheet, Shovel and Railway Spring Steel, etc., and Steel to order for any purposes—manufactured at their works in Sheffield—and universally known by the old stamp "Globe."

HENRY I. IBBOTSON, Agent.,
218 Pearl st., New York.

**Railroad Iron.
SPIKES.**

Wrought Iron CHAIRS, New Pattern.

THE Undersigned continues to contract, as usual, for the above articles. The reputation already acquired for their excellent quality is a guarantee that strict attention shall continue to be paid to the wants and interests of purchasers.

CHARLES ILLIUS,
20 Beaver St., New York

**WILLIAM JESSOP & SONS'
CELEBRATED CAST-STEEL.**

The subscribers have on hand, and are constantly receiving from their manufactory,

PARK WORKS, SHEFFIELD,

Double Refined Cast Steel—square, flat and octagon. Best warranted Cast Steel—square, flat and octagon. Best double and single Shear Steel—warranted. Machinery Steel—round.

Best and 2d gy. Sheet Steel—for saws and other purposes.

German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.

Genuine "Sykes," L Blister Steel.

Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by

WM. JESSOP & SONS,
91 John street, New York.

Also by their Agents—

Curtus & Hand, 47 Commerce street, Philadelphia.

Alex'r Fullerton & Co., 119 Milk street, Boston.

Stickney & Beatty, South Charles street, Baltimore.

May 6, 1848.

Railroad Iron.

B. O. Railway Tires, Railway Wheels,
Scotch Pig Iron, Tin Plates and Banca Tin,
Muntz's Patent Metal Sheathing,
Baltimore Copper.

Contracts for Rails made on behalf of the manufacturers, for delivery at any ports in the United States, at fixed prices.

Bowling Tires and Tire Bars and Scotch Pigs imported to order.

Muntz's Ship-sheathing, and a general stock of Tin Plates and Banca Tin in store, and for sale by

RAYMOND & FULLERTON, 45 Cliff st.

IRONDALE PIG METAL, MANUFACTURED
and for sale by the Bloomsburg Railroad Iron Co.

LINDLEY FISHER, Treasurer.
75 N. Water St., Philadelphia.

**Faggotted Car and Engine
Axles**

FORGED by RANSTEAD, DEARBORN & Co.,
Boston, Mass.

These Axles enjoy the highest reputation for excellence, and are all warranted.

Railroad Iron.

3,000 TONS C. L. MAKE 63 lbs. per yard,
now landing and to arrive.

Also contracts made for future delivery of above superior make English Iron.

300 Tons Banks Best Iron, Round, Square and Flat.
200 " English Bar " " " "

10 " 9-16 Square Iron for Railroad Spikes.
For sale in lots to suit purchasers by

DAVID W. WETMORE.

New York, March 26, 1850.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

**JOHNSON, CAMMELL & Co's
Celebrated Cast Steel,**

AND

ENGINEERING AND MACHINE FILES, which for quality and adaptation to mechanical uses, have been proved superior to any in the United States. Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cyclops Steel Works Sheffield.

JOHNSON, CAMMELL & CO.,
100 William St., New York.

November 23 1849.

Bowling Tire Bars.

40 Best Flange Bars 5½x2 inches, 11 feet long.
40 " " 5½x2 " 7 feet 8 in. long.
40 " Flat " 6x2 " 11 feet long.
40 " " 6x2 " 7 feet 8 in. long.

Now in store and for sale by

RAYMOND & FULLERTON,
45 Cliff street.

**Wheel, Forge and Foundry
Iron.**

LOCUST GROVE Wheel Iron of great strength
L and superior chilling property.

Balt. Charcoal Forge Iron, from Patuxent, Curtis Creek and Gunpowder furnaces.

Elkridge Foundry Iron, of superior strength and softness. Anthracite and Charcoal Iron from Pennsylvania and Virginia. Gas and Water Pipes, Lamp Posts from Elkridge furnace.

LEMMON & GLENN,
62 Buchanan's Wharf, Baltimore.

\$m9

**S. S. Keyser & Co.,
IRON WAREHOUSE,**

Corner of South and Pratt Streets,
BALTIMORE, MD.

Selling Agents for the Rough and Ready Bar Iron and Elk Boiler and Flue Iron Rolling Mills, Sarah and Taylor Furnaces, and Wrightsville Hollow Ware Foundry, and Dealers in Bar and Sheet Iron, and Cast, Sheer, German, Blister, Spring and Electroplated Steel, etc., etc.

Smith & Tyson,

GENERAL COMMISSION MERCHANTS,
No. 25 South Charles St., Baltimore, Md.

AGENTS for the Celebrated Columbia Pig Iron, suitable for Car Wheels and Chilled Rolls.

Columbia refined Charcoal Blooms; Refined Charcoal Juniata Billet Iron for Wire; Refined Iron for Bridging, of great strength; Cut Nails, Spikes, and Brads; Railroad Spikes and Wrought Chairs. 22tf

Tredegar Iron Works.

ROLLING MILL FOUNDRY AND MACHINE
R SHOPS. The undersigned continues to manufacture at his Works in this city (from best charcoal metal) Bar Iron of every description, embracing—

Rounds and Squares, from ½ to 5 inches diameter. Flats, from ½ to 7 inches, all thicknesses.

Bands and Scrolls, all sizes. Boiler plate and Plough Iron. Railroad and Locomotive Axles and Tires. Locomotive Frames, Spikes and Plates. Hoops, Ovals, Half Ovals, Half Rounds, Angle, T, L, and indeed every description of Iron usually manufactured, all of which he warrants to be equal to any made in this country.

He also manufactures at his Foundry and Machine Shops all descriptions of Railroad Work, say, Locomotives, Railroad Wheels and Axles complete and ready for the road, Railroad Chairs, etc. Also, Marine and Stationary Engines all sizes, Sugar mills and Engines, Horse mills, and every kind of Machinery usually required for the operations of the country.

He has paid particular attention to getting up machinery, etc., for Gold Mine operations, and those in want of such work might find it to their advantage to give him a call.

J. R. ANDERSON.

Richmond, Va., Sept. 10, 1850.

CUT NAILS OF BEST QUALITY, BAR IRON
(including Flat Rails) manufactured and for sale by

FISHER, MORGAN & CO.,
75 N. Water St., Philadelphia.

Car Wheel Iron.

100 Tons "Columbia" No. 2 Cold Blast Charcoal Iron.

300 Tons "Salsbury" No. 1, do. do.

For sale by CHARLES T. GILBERT,
No. 80 Broad st.

New York, Sept. 21, 1850.

Railroad Spikes.

THE subscribers are prepared to make and execute contracts for Railroad Spikes of a superior quality, manufactured by the New Jersey Iron Company, at Boonton. DUDLEY B. FULLER & CO.,
139 Greenwich st. corner of Cedar.

Railroad Iron.

1650 Tons, weighing about 61 lbs. per yard, 40 tons, weighing about 52 lbs. per yard, and 825 tons, weighing about 53½ lbs. per yard, of the latest and most approved patterns of T rail, for sale by

BOORMAN, JOHNSTON & CO.,
119 Greenwich street.

New York, Aug. 26, 1850.

N.B.—B. J. & Co are also prepared to take contracts for English rails, delivered in any of the Atlantic ports of the United States.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract to deliver Rails of superior quality, and of any size or pattern, to any ports of discharge in the United States.

COLLINS, VOSE & CO.,
74 South St.

New York, June 1, 1850.

Spikes, Spikes, Spikes.

ANY person wishing a simple and effective Spike Machine, or a number of them, may be supplied by addressing
J. W. FLACK,
March 6, 1850. Prov. N. V.

Railroad Iron.

2000 Tons, weighing 58 pounds per lineal yard, of the most approved pattern of T rails, in store and to arrive, for sale by

COLLINS, VOSE & CO.,
74 South St.

New York, June 1, 1850.

Railroad Spikes, Boiler Rivets, etc.

THE Subscribers, Agents for the sale of James S. Spencer's, Jr., Railroad and Boat Spikes, Boiler Rivets, and Wrought Iron Chairs for Railroads, made at his Works near this city, will execute all orders with promptness, despatch, and of the best quality.

ALSO IMPORTERS of English refined and Merchant bar Iron; Extra refined Car and Locomotive Axles (from 3½ to 6½ inches in diameter); B. O. Locomotive Tire (welded by Baldwin). Also, supply Boiler and Flue Iron cut to pattern or otherwise.—Spring, Shear, and Cast Steel, etc., etc., etc.

T. & E. GEORGE.
Philadelphia, November 14, 1850.

Railroad Iron.

THE UNDERSIGNED, HAVING made arrangements abroad, are prepared to contract for the delivery of Foreign rails, of approved brands upon the most favorable terms.

They will also make contracts for American rails, made at their Trenton works, from Andover Iron, in whole or in part, as may be agreed upon.

They are prepared to furnish Telegraph, Spring and Market Wire; Braziers and Wire Rods; Rivets and Merchant Bars to order, all made exclusively from Andover Iron. The attention of parties who require iron of the very best quality for special purposes, is respectfully invited.

COOPER & HEWITT,
17 Burling Slip, New York.

February 15, 1850.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract for the delivery of English, Welsh and Scotch Rails, of any pattern and weight, also for every description of English, Welsh, Scotch, and Swedish Iron, Railway Chairs and Spikes, Rivets, Bolts, Nuts, Washers, Chain Cables, Anchors, Tin Plates, German Spelter, Iron Castings, and every description of Machinery.

WILLIAM BIRD & CO.,
Iron and Tin Plate Merchants,
44 Wall st., New York.

And at 5 Martin's Lane, City, London,
and 140 Buchanan st. Glasgow.

July 27th, 1850.

Railway Iron.

THE Subscribers will contract to deliver, in the course of the ensuing Spring and Summer, the best English Rails, made by a particular specification, and of any pattern required.

DAVIS, BROOKS & CO.,
68 Broad st.

On hand for sale, English rails of 58 lbs. to the yard, made by particular specifications.
January 10, 1851. 2m

To Iron Masters.

WANTED—A Person to take charge of a Blast Furnace for Smelting Iron, for further information apply to
COLLINS, VOSE & CO.,
74 South street.

Railroad Iron for Sale.

THE Mansfield and Sandusky City Railroad Co. have on hand from twelve to fifteen hundred tons of American Flat Bar Railroad Iron, weighing 38 lbs. to the lineal yard, which they offer for sale at reasonable rates.

The iron has been in use about four years, and is sound and in good condition. It is 2½ by ½.

It will be ready for delivery at short intervals between the opening of navigation in the spring and the 1st September next.

For further particulars inquire at the office of the company at Sandusky City, Ohio.

C. G. FORBES, President.

December 24, 1850.

Railroad Iron.

THE "Montour Iron Company" is prepared to execute orders for Rails of the usual patterns and weights, and of any required length not exceeding 30 feet per rail. Apply at the office of the Company,
No. 73 South 4th st., Philadelphia,

Or to the Agents,

CHOUTEAU, MERLE & SANFORD,
NO. 51 New st., New York.

September, 1850.

American Railroad Iron.

1000 Tons, weighing 50 lbs. per yard, manufactured by Reeves, Abbott & Co., at the Safe Harbor Iron Works, and now lying in yard at Brooklyn, for sale by

CHOUTEAU, MERLE & SANFORD,
No. 51 New street.

Tubes.

The undersigned are in direct communication with the Birmingham Patent Lap Welded Iron Tube Company, for the sale of their very excellent and superior Boiler and Gas Tubes in large or small quantities.—These Tubes are sold very extensively in England and on the continent of Europe are sold exclusively by

WM. BIRD & CO.,
Iron and Tinplate Merchants,
44 Wall st., New York
5 Martin's Lane, City, London,
and 140 Buchanan st., Glasgow.

Wanted.

WANTED—A Situation in a Civil Engineer's office, by a Young Gentleman from Scotland—has had six years' experience as a practical Draughtsman, Architect, Surveyor, and Leveller in one of the principal civil engineering establishments in Scotland. First rate reference given. Apply to Messrs. Cooper & Hewitt, 17 Burling Slip, or to

JAS. SNEDDON,
23 Harrison st.

Wanted.

A Second-hand Locomotive of 10 to 15 tons weight. A note, giving lowest terms, addressed to A. B., Railroad Journal Office, will receive attention.
January 9, 1850.

India-rubber for Railroad Cos.

RUBBER SPRINGS—Bearing and Puller—Fuller's Patent—Hose from 1 to 12" diameter Suction Hose. Steam Packing—Rods 1-16 to 2 in thick. Rubber and Gutta Percha Bands. These articles are all warranted to give satisfaction, made under Tyer & Helm's patent, issued January, 1849. No lead used in the composition. Will stand much higher heat than that called "Goodyear's," and is in all respects better than any in use. Proprietors of rail roads do not be overcharged by pretenders.

HORACE H. DAY,
Warehouse 23 Courtlandt street
New York, May 21, 1849.

Great Work on Bridge Building, etc., etc.

JUST published in medium folio, One Dollar, 75 cts. to subscribers.

Part IV of a "THEORETICAL AND PRACTICAL TREATISE ON THE CONSTRUCTION OF BRIDGES IN STONE, IRON AND WOOD," including the Equilibrium of Arches, the mathematical principles of the Oblique Arch, Suspension Arch, etc., Construction of Foundations in Water, Centering, Oblique Arches, etc., the application of Iron to Railroad Structures, Practical Tunnelling, Suspension Bridges, etc.; illustrated by numerous accurately executed Plans, Elevations, Sections and Details of Stone, Iron and Wood Bridges, Viaducts, Tunnels, Culverts, Machines, etc., constructed by the most eminent Architects and Engineers in Europe and the United States, and numerous Original Designs for Bridges, Viaducts, Culverts, etc. The whole calculated to meet the exigencies of Engineers, and assist Draughtsmen, Bridge Builders, Mechanics and Students. By George Duggan, Architect and Civil Engineer.

The present part contains beautifully executed plans, elevations, sections, and details of the Iron Lattice Bridge 140 feet span over the canal in the suburbs of Dublin on the line of the Dublin and Drogheda R.R., Plans, elevations and sections of the Timber Bridge over the Schuylkill, at Market st., Philadelphia, with Arches 160 and 190 feet span. Plans, elevations and sections of a Timber Bridge with Arches 155 and 200 feet span over the Delaware. Also, plans, elevations, sections and details of Lattice and Frame Wood Bridges, explanatory of Nathaniel Towns and Colonel S. H. Long's methods of constructing Bridges of Wood, with the continuation of the Articles on Cofferdams, Concrete, Limes, Mortars, Cements, etc.

Published by George Duggan, 300 Broadway, New York, to whom all communications should be addressed and subscriptions forwarded.

Parties remitting Mr. Duggan \$5. and the remainder \$4 when they have been supplied with the first six parts of the "Theoretical and Practical Treatise on Bridge Building, etc." shall receive it monthly as published. To those making Mr. Duggan a present remittance of \$9, the work will be forwarded post free to any part of the United States.

Great American Engineering

AND MECHANICAL WORK, just published in a medium folio One Dollar, 75 cts. to Subscribers.

Part X. of "Specimens of the Stone, Iron & Wood Bridges, Viaducts, Tunnels, Culverts, &c., &c., of the United States Railroads." By George Duggan, Architect and Civil Engineer.

The present part contains beautifully executed plans, elevations, and sections of the Timber Bridge with Arches 136 feet span, over the Mohawk river, on the line of the Utica and Schenectady R.R. Plans, elevations, sections and isometrical views of Timber Piers 100 feet high. A Timber Bridge of 55 feet span, and Ice Breakers, on the line of the Little Schuylkill and Susquehanna R.R.

Also plans, elevations, sections, isometrical views and details of an Iron Bridge 355 feet long, with Arches 81 feet span, erected by the N. York Iron Bridge Co. over Moores Creek, on the line of the Virginia Central R.R., and plans, elevations and sections of an Iron Plank Road Bridge 160 feet span, erected over Buffalo creek by the same company, with a description of Col. Long's method of constructing Bridges in Iron, and an explanation of the causes that led to the failure of the Iron Bridge 60 feet span, near Lackawaxen, on the line of the New York and Erie R. R., at midday, on the 31st July last, by which several lives were lost, and a great amount of property destroyed.

Published by GEORGE DUGGAN,
300 Broadway, New York.
To whom all communications should be addressed and subscriptions forwarded.

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.
August, 16, 1849. 6m33

For Sale.

TWO Locomotive Engines—10½ tons weight, built by Baldwin. Also Four Eight-wheeled Passenger Cars, with side seats, all in good running order. Apply to WM. E. MORRIS,
Office of Philad., Germantown & Norristown Railroad Co., 9th and Green sts., Philadelphia. 3m5

TO RAILROAD COMPANIES, CAR MANUFACTURERS, etc.

THE Undersigned hereby gives public notice, that the Commissioner of Patents, pursuant to his decision in relation thereto, on the 8th day of October, 1850, issued to him a Patent for the sole right to manufacture, and exclusive use of the INDIA RUBBER CAR SPRING, on account of priority of invention of said Spring.

F. M. RAY
New York, Oct. 23, 1850.

Iron Trade of Pennsylvania.

DOCUMENTS and Statistics relating to the Manufacture of Iron in the State of Pennsylvania—giving a history of the manufacture from its commencement to this date, illustrated by diagrams. Also tables giving the address and capacity of every establishment in the State. Prepared by direction of the late convention of the trade held in Philadelphia.

For sale by
LINDSAY & BLACKISTON, Philadelphia.
FIELDING LUCUS, Jr., Baltimore.

HENRY G. NICHOLS, 79 Water st., N. Y.
or at this office—price \$1 00.

It will be sent by mail to any order enclosing the money, and post paid.

Ulster Iron.

THE ULSTER IRON WORKS, Saugerties, N. Y., continue in full operation. Orders for round, square, flat, band, hoop and scroll iron, will be received and promptly executed by

J. & L. TUCKERMAN,
69 West St., New York.

Patent Machine Picket Fence

SIX DIFFERENT STYLES of this fence are now made by patent machinery; and is by far the most economical fence for Railroads, Farms, Yards, etc., ever yet offered to the public, costing only from 4 to 30 cents per foot, according to pattern; and is so put up as to be shipped at a trifling expense. Full particulars will be furnished, by addressing the subscriber, to whom all orders should be sent.

N. STRATTON, Troy, N. Y.

Providence Tool Co.,

MANUFACTURERS OF

Plane Irons, Tooth Irons, Soft Moulding and Rabbet Irons, Cornice Irons, Plow Bits, and Planing Machine Knives:

NUTS, WASHERS AND BOLTS.

—ALSO—

PLATE HINGES AND PICK AXES.

They are prepared to execute orders for all descriptions of Cold Punching and Job Work.

WM. FIELD, Agent. RUFUS WATERMAN, Treas.
PROVIDENCE, R. I.

Lovegrove's Patent Cast Iron Water and Gas Pipes.

THE Subscriber, the Inventor and Patentee of the Centrifugal mode of giving form to metallic substances while in a molten state, is preparing to make Cast Iron Water and Gas Pipes, of any dimensions, at prices much lower than they can be made in the old manner, and the pipes warranted to stand a pressure of three hundred pounds to the square inch, and to be soft enough to drill. Steam Engines and all kinds of machinery. Cast Iron Doors and Frames, and Mill Castings of every description, made to order.

THOMAS J. LOVEGROVE,
Machinist and Founder,
West Falls Avenue, below Pratt st., Baltimore.

Railroad Letting, in Virginia.

PROPOSALS will be received at the office of the chief engineer of the Richmond and Danville railroad, until 9 o'clock A. M., Monday, the 10th of March, to be decided the 13th of the same month, for doing all the grubbing, clearing, grading, ditching and masonry, on the Richmond and Danville railroad, in the counties of Amelia, Nottingham, Prince Edward, Lunenburg and Charlotte, comprehending about 45 miles of road.

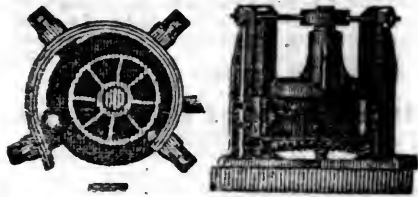
Profiles and specifications can now be seen at the office of the company in Richmond; and after the 10th of February, at the offices of the resident engineers, on the line, at Burkeville and Keysville.

By order of the board of directors,

ANDREW TALCOTT,
Chief Engineer R. & D. railroad.
Engineering department R. & D.
R. R. Co., Richmond, Jan. 22, 1851. }

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phoenixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous; considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll sounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y. P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery for making Spikes, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

CHILLED RAILROAD WHEELS.—THE UNDERSIGNED are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
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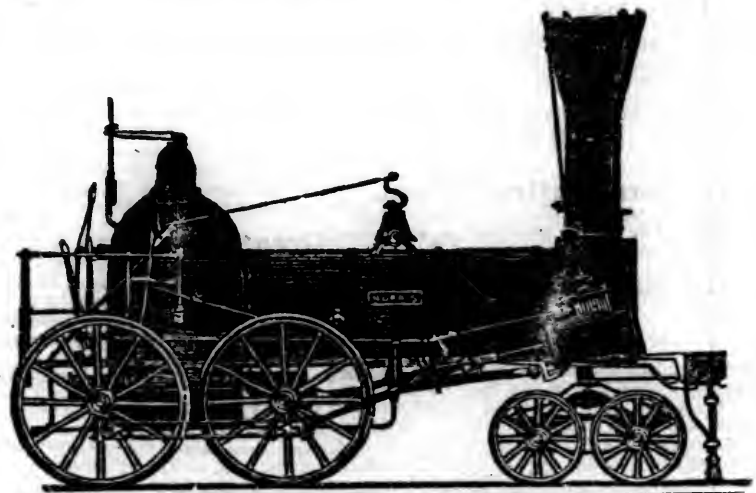
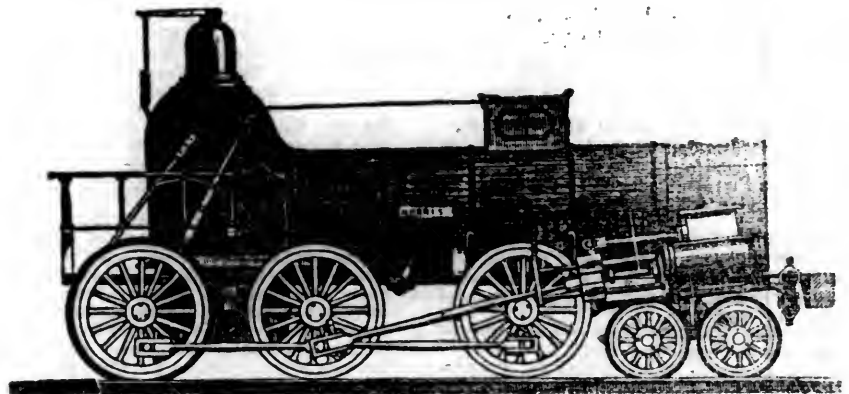
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Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

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November 3, 1849.

17

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AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

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SATURDAY, MARCH 22, 1851.

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ASSISTANT EDITORS,

J. T. HODGE, *For Mining and Metallurgy.*
GEN. CHAS. T. JAMES, *For Manufactures and the
Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & Co., 136 NASSAU ST.

Saturday, March 22, 1851.

Indiana.

New Albany and Salem Railroad.—The company to construct this road was organised in the year 1847. During that and the following year the Legislature of the State granted to the company the right to extend the road to any place in the State the company might select. After this it was resolved to extend the road through Salem, (to which point it has been finished and is in operation,) Bedford, Bloomington, Gosport, Crawfordsville, to Lafayette and Michigan City, at the south end of Lake Michigan, and thence to Chicago with a branch from Gosport to Indianapolis. The length of the road, from New Albany, its starting point, to Chicago, will be 315 miles; and 360 miles, including the branch from Gosport to Indianapolis. It crosses the Cincinnati and St. Louis road some 67 miles from New Albany, and will connect by the branch to Indianapolis, with the Bellefontaine road,

leading east through Ohio. About 130 miles from New Albany it crosses the Terre Haute road, and at Lafayette, the Wabash and Erie Canal. It will connect with the Michigan Central and Michigan Southern railroads, at Michigan City, and with the Upper Mississippi, through the Chicago and Galena roads. As yet books have only been opened for taking the stock to construct the road to Gosport, a distance of 112 71-100 miles. The second division of the work, between Salem and the east fork of White river, about 31 miles in length, will probably be completed by the first of next October. The third division from the east fork of White river to Gosport, 47 miles, was let in December, 1849; but not progressing as fast as was desired, it is intended by the directors, unless the work goes on more rapidly, to take it out of the hands of the present contractors and relet it, in order, if possible, to have it completed by next year.

As much of the road as is completed is laid with a heavy flat bar 2½ by ½. With the exception of ten miles, intended to be laid as above, the remainder will be laid with a T rail of about 60 pounds to the yard. The cost of the entire road from New Albany to Gosport, 112 71-100 miles, is estimated at \$1,136,975 40. The expense of equipments, such as locomotives, cars, depots, etc., is estimated at \$215,544 60; which would make the total cost of the road, ready for business, \$1,352,520; or, \$12,000 per mile. The estimated net receipts for the carriage of freight, passengers and mails, etc., after deducting 59 per cent for expenses, are \$172, 125; or, 12.72 per cent on the cost of road and equipments. As to "ways and means," \$760,000 can be put down as the amount of subscriptions, and what is taken by contractors; to which may be added \$500,000 to be raised by sale of bonds at par. This will leave \$92,520 to be raised by further subscription. To secure the payment of the \$500,000, it is proposed to mortgage the entire line to that amount. Upwards of \$400,000 of the subscriptions (\$760,000) have been paid in. After the first of July, 1853, it is proposed to reserve 20 per cent of the net earnings of the road as a sinking fund for the payment of the bonds, which will be issued, payable from the first day of April, 1851, at an average of ten years. Not more than \$100,000, however, will fall due in any one year. That amount will fall due annually, from 1859 to 1863, inclusive; and as concerns security under the mortgage, all the bonds will be upon a par.

Indianapolis and Bellefontaine Railroad.

The organization of the company to construct this road took place on the 3d of July, 1848. The length of the road is about 83 miles. It starts from Indianapolis and runs to the Ohio line, north east of Winchester, in Randolph county, where it connects with the Bellefontaine and Indiana road. It is expected to be completed and in running order, as far as Muncie, by next fall, and, by the fall of the following year, to Union, at the State-line. At the latter time, in all probability, the entire lines from Pittsburgh, Cleveland and Sandusky, thro' Bellefontaine and Sidney, from Wheeling thro' Columbus, Urbana, and Piqua, and from Cincinnati through Dayton and Greenville, will be completed to the eastern terminus of this road. It connects, at Indianapolis, with the Madison line, and intersects the Jeffersonville, New Albany, Lawrenceburgh, Evansville, Terre Haute, Lafayette, Richmond and Peru roads. Its maximum grade is 30 feet to the mile, with 76 miles of straight line.—It has no curves of a less radius than 5730 feet. In the construction of the work, the T rail of 60 lbs. is used. It will cost about \$10,000 per mile. The work, pursuant to provisions of charter, is divided into three divisions of about equal length. The first extends from Indianapolis to Pendleton, the second from the latter place to Muncie, and the third from Muncie to Union. The first twenty-eight miles have been completed, at a cost of \$9,359 per mile, inclusive of some equipments, but not of motive power. Of the second section, about eight miles will be laid with iron when the ground will permit in the spring. Eighteen miles more will be ready for the iron by the first of June, and will be finished and in readiness for business by next fall. The clearing and grubbing of the third division is nearly completed, and about one-third of the grading is in progress. On this road, the depot buildings are situated on "turnouts," leaving the main track free. Since the 11th of last December a daily train has been run on the first section, and the receipts to the first of the present month, inclusive of the sums received from irregular trips made since the 10th of October, amount to \$3,830.91.—The charges for running during that time were \$1,645 38, leaving a balance of proceeds of \$2,185 53; or, about 5½ per cent on the cost of the section. Since the last report, the number of subscribers to the stock of the company has increased 467. Of the subscriptions \$57,454 are payable in land, \$27,

022 in cash, and \$5,825 in labor and materials, making a total of \$90,301. The land subscriptions now amount to \$232,454, the cash subscriptions to \$206,149, and the labor and material subscriptions to \$41,550, being a total of \$480,153. The whole number of subscribers is 2,648. Excluding the expense of iron, chairs and spikes, the cost of the whole road, 83 miles, is estimated at \$3,382 per mile, making an aggregate cost of \$280,706, leaving a surplus of \$199,447 applicable to superstructure. The amount received into the treasury, exclusive of lands, is \$174,241 52. The expenditures have been \$170,674 39; leaving a balance of \$3,567 13.

The officers of the company for the present year are:—

DIRECTORS.

O. H. Smith, Marion County.
 Alfred Harrison, "
 Thomas R. Noel, Hancock and Hamilton Cos.
 William Sparks, Madison Co.
 Allen Makepeace, "
 Madison G. Walker, "
 David Kilgore, Delaware Co.
 Samuel P. Anthony, "
 James Truitt, "
 Jeremiah Smith, Randolph Co.
 William M. Way, "
 David Heaston, "
 Joseph McClellan, Johnson Co.
 William A. Rifner, Henry Co.
 R. H. Winslow, New York City.

President,

O. H. SMITH.

Secretary,

JAMES G. JORDAN.

Treasurer,

AUSTIN W. MORRIS.

Engineer,

THOMAS A. MORRIS,

Assistant Engineer,

ROBERT M. PATTERSON.

From Appleton's Mechanics' Magazine.
The Application of Iron to Railway Structures.

Continued from page 148.

Longitudinal Compression and extension of Cast and Wrought Iron.—The commissioners made many experiments "for the purpose of supplying data for completing the mechanical theory of elastic beams. If a beam be in any manner bent, its concave side will be compressed, and its convex side extended, and an exact knowledge of the laws which govern its compression and extension must precede any accurate general theory of its deflections, vibrations, and ruptures." The law usually assumed—viz., that the longitudinal compressions and extensions are, within certain limits, proportional to the forces by which they are produced, "although very nearly true in some bodies, is not, perhaps, accurately true for any material. Experiments have therefore been made to determine with precision the direct longitudinal extension and compression of long bars of cast and wrought iron.—The extensions were determined by attaching a bar 50 feet in length and 1 inch square, to the roof of a lofty building, and suspending weights to its lower extremity. The compressions were ascertained by inclosing a bar 10 feet long and 1 inch square in a groove, placed in a cast iron frame, which allowed the bar to slide freely without friction, and yet permitted no lateral flexure. The bar was then compressed by means of a lever loaded with various weights. Every possible precaution was taken to insure accuracy. The following formulæ were then deduced for expressing the relation between the extension and compression of a bar of cast iron 10 feet long and 1 inch square, and the weights producing them respectively:—

Extension, $w = 116,117 e - 201,905 e^2$
 Compression, $w = 107,763 d - 36,318 d^2$

where w is the weight in pounds acting upon the bar; e the extension, and d the compression in inches. And the formulæ deduced from these, for a bar one inch square, and of any length, are—

For extension,

$$w = 12,903,040 \frac{e}{l} - 2,907,432,000 \frac{e^2}{l^2}$$

For compression,

$$w = 12,931,570 \frac{d}{l} - 522,089,200 \frac{d^2}{l^2}$$

where l is the length of the bar in inches. These formulæ were obtained from the mean results of four kinds of cast iron.—The mere tensile strength of cast iron, derived from these experiments, is 15,711 pounds per square inch, and the ultimate extension 1/600 of its length, and this weight would compress a bar of iron of the same section 1/775 of its length. It must be observed that the usual law is very nearly true for wrought iron."

"Experiments have also been made upon the transverse strength and resistance of bars of wrought and cast iron, acted upon by horizontal as well as vertical forces. These experiments will be found to exhibit very fully the deflections and sets of cast iron, and the defect of its elasticity. The bars which were experimented upon by transverse pressure were of sections varying from one inch square to three inches square, and of various other sections, and the actual breaking weights show that the strength of a bar one inch square should not be taken as the unit for calculating the strength of a larger casting of similar metal, although the practice of doing so has been a prevalent one; for it appears that the crystals in the portion of the bar which cools first are small and close, whilst the central portion of bars two inches square, and three inches square, is composed of comparatively large crystals, and bars of three inches square in section, planed down on all sides alike to three quarters of an inch square, are found to be very weak to resist both transverse and crushing pressure. Hence it appears desirable, in seeking for a unit for the strength of iron of which a large casting is to be made, that the bar used should equal in thickness the thickest part of the proposed casting."

In the remaining portion of the report, the commissioners refer to the information they have collected respecting the qualities of various kinds of cast iron, and the respective properties of the hot blast and cold blast iron. They mention, with approval, a recommendation—

"That engineers, in contracting for a number of girders, should stipulate that they should not break with less than a certain weight (leaving the mixture to the founder) and cause one more than the required number to be cast. The engineer may then select one to be broken, and if it break with less weight than that agreed upon, the whole may be rejected."

A general description of the several kinds of iron bridges for railways follows, and the commissioners report, in conclusion, that—

"Considering the attention of engineers has been sufficiently awakened to the necessity of providing a superabundant strength in railway structures, and also considering the great importance of leaving the genius of scientific men unfettered for the development of a subject as yet so novel and so rapidly progressive as the construction of railways, we are of opinion that any legislative enactments with respect to the forms and proportions of the iron structures employed therein would be highly inexpedient."

"We would, however, direct attention to the general conclusions we have arrived at from our own experiments, and from the information supplied to us, namely:—

"That it appears advisable for engineers, in contracting for castings, to stipulate for iron to bear a certain weight, instead of endeavoring to procure a specified mixture."

"That to calculate the strength of a particular iron for large castings, the bars used as a unit should be equal in thickness to the thickest part of the proposed casting."

"That, as it has been shown that to resist the effects of reiterated flexure iron should scarcely be allowed to suffer a deflection equal to one-third of its ultimate deflection, and since the deflection produced by a given load is increased by the effects of percussion, it is advisable that the greatest load in railway bridges should in no case exceed one-sixth of the weight which would break the beam when laid at rest in the centre."

"That, as it has appeared that the effect of velocity communicated to a load is to increase the deflection that it would produce if set at rest upon the bridge; also that the dynamical increase in bridges of less than 40 feet in length is of sufficient importance to demand attention, and may, even for lengths of 20 feet, become more than one-half of the statical deflection at high velocities, but can be diminished by increasing the stiffness of the bridge—it is advisable that, for short bridges especially, the increased deflection should be calculated from the greatest load and highest velocity to which the bridge may be liable; and that a weight which would statically produce the same deflection should, in estimating the strength of the structure, be considered as the greatest load to which the bridge is subject. For the method of calculating this increased deflection, we beg to refer to appendix B."

"Lastly, the power of a beam to resist impact varies with the mass of the beam, the striking body being the same; and by inertia of the beam without adding to its strength, the power to resist impact is, within certain limits, also increased.—Hence it follows that weight is an important consideration in structures exposed to concussions."

"Whilst, however, we lament that the limited means which have been placed at our disposal, and the great time required for such investigation, have compelled us to leave in an imperfect state, and even to neglect altogether, many interesting and important branches of experimental inquiry, we trust that the facts and opinions which we have been enabled to collect will serve to illustrate the action which takes place under varying circumstances in iron railway bridges, and enable the engineer and mechanic to apply the metal with more confidence than heretofore."

Tensile Strength of Cast Iron from various parts of the United Kingdom.—Seventeen kinds of iron used. Specific gravity ranging from 6.906 to 7.181. Form of transverse section of specimens, cruciform. Breaking weight per square inch of section, from 5.602 tons to 7.949 tons, except the Clyde iron No. 3, of which the breaking weight per square inch of section reached 10.477 tons.—Mr. Morris Sterling's iron, hot blast, mixed and melted with about 20 per cent of malleable iron scrap, had a breaking weight of 11.502 tons per square inch of section. Another quality, composed of hot blast, Staffordshire iron, mixed and melted with about 15 per cent of common malleable iron scrap, had a breaking weight of 10.474 tons.

Tensile Strength of Cast Iron of Different Forms of Section.—Forms of section used—cruciform, extreme breadth four inches and depth three inches; uniform thickness of arms 64 inches; rectangular, 2.3 inches \times 1.75 inches; and circular, 2.26 inches diameter: the intended area in all the forms being equal to four square inches. Mean breaking weight per square inch of the cruciform section varied from 6.253 tons to 6.784 tons; of the rectangular, from 6.115 tons; and of the circular from 6.614 tons to 6.983 tons. From these results it may be inferred that little or no difference in the tensile strength of cast iron arises essentially from the form of its section.

Strength of Cast Iron in Various Sectional Forms to Resist Crushing.—The first set of experiments were upon cylinders, the specimens being in two proportions—viz., having diameter of section equal to height, and having a height equal to double the diameter of section. In the first cases, the mean crushing weight per square inch of section varied from 27.512 tons to 28.810 tons. In the second cases, it varied from 24.988 tons to 29.779 tons.—The second set of experiments were upon triangular prisms, of which the bases were intended to be

equilateral triangles, with sides one inch in length; with a height of specimen of one inch, the mean crushing weight per square inch of section was 29 905 tons, and with a height equal to two inches it was 31 045 tons. The third set of experiments were upon rectangular prisms. The base of each prism was intended to be one square inch, with a height of one inch, the mean crushing weight per square inch of section was 28 112 tons; and with a height of two inches, 26 437 tons.

Comparative Power to Resist Crushing of Cast Iron from Different Parts of the Kingdom.—The specimens were cylinders three-quarters of an inch in diameter, and three-quarters of an inch and one inch and a half in height. The general mean crushing weight per square inch of section varied from 27 004 tons to 40 109 tons. Mr. Stirling's irons required crushing weights of 54 640 tons and 64 403 tons respectively, the third quality showing the greater resistance.

Ratio of Tensile to Crushing Resistance in Cast Iron.—The torn specimens being of a cruciform section, and those crushed of a circular section and cylindrical form. The resistances being reduced to those due to a square inch of section, the ratio is seen to vary from 1:4 518 to 1:6 735. The average ratio of the whole (omitting Mr. Stirling's as being a compound iron) is 1:5 6603.

To be continued.

Royal Scottish Society of Arts.

Chimney of the Edinburgh Gas Works.

The present session was opened on the 11th November, by a valuable address from Mr. Grainger, the president; after which, Mr. Buchanan read an elaborate paper on "The Chimney of the Edinburgh Gas Works." The length of the paper renders it impossible for us to find room for it at present, but we shall return to it next month, giving, meanwhile, a subsidiary paper by M. Taylor, Esq., the engineer of the works, being a "detailed description of the works."

In this paper, Mr. Taylor gave a minute detail of the dimensions and structure of every part of the work. The foundation was on hard shale or clay; the masonry 40 feet 6 inches square at the bottom, 12 feet below the surface of the ground; 32 feet 6 inches at the surface of the ground; and brought up by steps in hard foundation courses of Craigleith stone, dressed and square-jointed. Mason work of the most substantial description, with four eyes for connecting the main flues to the stalk. Square pedestal 65 feet high from surface of ground to top of base of brick shaft; 30 feet 10 inches square at base course; 30 feet square above base, and 27 feet 9 inches under moulding of top. Body of pedestal of neatly-covered rubble work of the strongest kind, the stone chiefly from Hailes Quarry of the best rock. The cope mouldings and base of brick; shaft of Craigleith. Within the pedestal, and rising 20 feet above it, is an inner chimney or brick shaft standing quite detached, having a space from 18 inches to 2 feet clear in every part; but this space covered over at the top to keep out soot deposit, but yet left free of the outer pedestal and chimney. The inner chimney is 90 feet high, 13 feet diameter inside, carried up at four different thicknesses, beginning at 3½ bricks thick, and ending at 2 bricks, including a lining of fire brick, carried up the whole way at two thicknesses—20 feet at 10 inches thick, and 70 feet at 5 inches. The brickwork of the best well burnt circular stock brick, with a course of headers in reeled order for every four courses of stretchers. The main brick shaft is 264 feet high above the stone pedestal;—making, with the pedestal, 65 feet, and foundation 12 feet 6 inches—in all 341 feet 6 inches. The shaft is 26 feet 3 inches diameter at bottom externally, tapers to 13 feet 10 inches at the height of 243 feet, at the first belt under coping 11 feet 10 in. below the top. The shaft is carried up at five different thicknesses, beginning at 35 inches, or 3½ bricks, for 35 feet up, and ending with 15 inches, or 1½ brick, for 58 feet at the top, all built with hard circular composition brick, referred to in the experiments on the strength of bricks. Brickwork put together in the strongest manner with headers, as already described, and best band all laid in the best lime from Burdiehouse, with sharp sand, sifted and made up in the mill. The beds are kept as thin as possible, and neatly pointed in with the

edge of the trowel. All the vertical joints inside of wall, grouted up with thin lime. As a farther security, the shaft is bound with six malleable iron hoops, at intervals of 35 feet up, built into the brick work, one brick on bed from the outside, and kept ¼ inch clear all round off the outside lining of brick work, so as to allow the hoops to expand with heat without injury to the work. They are all 3 inches broad; the under three 1 inch thick, the upper 4 inch each, made in three lengths, clamped together and made fast with 3 in. or ½ in. rivets on each side. The projecting cope at the top is of cast iron, 19 feet 6 inches diameter over all, and in sixteen pieces about ¼ inch thick, screwed together with bolts through the flanges. The cope being all fitted and bound together in a mass on the top of the stalk, the brick work was continued up, and finished with a cope or plate of cast iron, composed of eight pieces of ¼-inch thick, and about 2½ feet broad, with a round belt going 9 inches down on the brick work, and forming a strong hoop round it. The chimney is furnished with an endless chain going up the inside of the main shaft, giving the means of ascending at any time to the top. The electric conductor stands 6 feet above the top-plate, ½-inch round copper made fast to stone and brick work, with 7½-inch copper holdfasts let 4 inches into the masonry or brick work, with a head on the inside and an eye on the outside to receive the rod as it was carried up. By these holdfasts an ascent can easily be made to the top by a small tackle suspended to the holdfasts. The conductor is metallically connected to all the iron work on the stalk—the plate on the top, projecting cope, malleable iron hoops, bolts on the top of stone pedestal, and also the ascending chain. The rod descends into a well about 10 feet from the foundation, and is immersed about 8 feet deep in water, and the end turned up 2 feet in a horizontal direction and flattened.—*Prac. Mechanics' Journal.*

English Railways.

Progress of Railway Traffic.

We copy from the British Almanac the following in relation to the progress of railroad traffic in England, which possesses much interest for railroad companies in this country:—

It is one of the features of the railway system, consequent on the enlargements which have marked that system, that the average receipts per mile per week have gradually lessened. So long as the lines open were main lines, terminating at both ends in important towns, they were fed by lateral traffic which tended to swell the receipts; but when branch lines were made, they could not bring other than mere branch traffic; and when competing lines were made, they diverted some of the traffic which originally belonged to the main lines. The length of railway open for passenger traffic on July 1, 1849, in the United Kingdom, was 5,447 miles; and on December 31 in the same year it amounted to 6,032 miles. In the first half of that year they were carried 28,767,867 passengers; and in the second half, 35,073,673; making a total of 63,841,539 in the year. The receipts for carrying these passengers amounted to £1,927,767 for 1st class, £2,530,968 for 2d class, and £1,819,156 for 3d class, giving a total of £6,277,931; or an average of about 2s. each passenger. In 1848 (see *Companion* for 1850, p. 67) the average payment per passenger per journey was 2s. 1d., showing a remarkably near approximation in two successive years. The goods traffic during 1849 amounted to £5,528,606, making, with the passenger traffic, a fraction under one million sterling per calendar month.

In the half-year ending June 30, 1850, the traffic for goods and passengers realized £6,130,200; of which the expenses absorbed £2,861,240; leaving for profit the sum of £3,268,960 to pay interest on debentures, and divided on shares. The total sum expended down to the above date was about £220,000,000 on about 6,000 miles of railway then opened, and on many hundred (perhaps as many as two thousand) miles in various stages of progress.—The average expenditure on all the railroads in the United Kingdom considerably exceeds £30,000 per mile.

When the time shall arrive for making up the railway accounts for the whole of the year 1850, it

will probably be found that the number of passengers has largely increased, but that the average rate of payment has lessened, owing to the vast numbers who have travelled at very low fares by the excursion trains. The average receipts per mile per week have gradually lessened, but it is probable that the immense holiday traffic of the autumn of 1850 may prevent the average of the whole year from falling below that (per mile) of 1849. Instead of comparing the whole year (which we cannot yet do for 1850) we may take the first 39 weeks of each year, from January 1 to September 30; and we find the following results:—

Years.	Receipts.	Miles open.	Per mile per week.
(Jan. 1 to Sept. 30.)			
1844.....	£4 215,440	1770	£64
1845.....	4 960,320	2033	67
1846.....	5 758,600	2498	64
1847.....	6 685,880	3375	56
1848.....	7 500,680	4178	50
1849.....	8 275,679	4963	45
1850.....	9 525,707	6075	44

As the number of miles open refers to the date of Sept. 30 in each year, and as in the early part of each year the number is, of course, less, the real average per mile per week is somewhat higher than that given above, though it cannot be stated accurately.

The holiday or excursion traffic just alluded to, is worthy of a little attention. There has been for many years a great difference of opinion among leading authorities in the railway world, whether high fares, moderate fares, or low fares, will bring the greater amount of net profit to the companies; or, in other words, to what extent will lowering the fares tend to increase the number of travellers. It is admitted on all hands that very high fares would not bring the greatest aggregate net profit; but it is also admitted, that nothing but experience will determine what degree of cheapness is the most profitable. The probability of an immense influx of visitors to London in 1851 renders the decision of this question an object of much importance, and the excursion trains of 1850 afford interesting information bearing on this point. These trains have met with a success never before equalled; the fares have been lower than were ever before ventured; and yet the directors of the various companies seem well satisfied with the result. The Brighton railway company was perhaps the first to commence the system. Until 1850 the third class excursion trains from London to Brighton and back were usually charged 5s. per ticket; but in this year the charge has been reduced to 3s. 6d. The South Eastern company followed, and made their 6s. tickets available not only to Dover but to Margate and Ramsgate; while their Reading branch was made available to a 3s. 6d. ticket.—The South Western then astonished railway travellers by their 3s. tickets to Southampton and back, and equally cheap tickets elsewhere. The Great Western company, who have hitherto hung back from excursion trains, next entered the field, and placed Windsor, Oxford, Bath, Bristol, and Cheltenham, within the limits of excursions. Late in the season the Eastern Counties company followed in the same track; while the northern companies have not been slow to develop the system. The ingenuity which the companies have exhibited in finding out new objects for pleasure excursions, shows that the results are deemed satisfactory; that the abstraction from ordinary traffic is not equal to the addition by holiday traffic.

The Wheeling Bridge Case.

Chancellor Walworth's report to the Supreme Court, on the Wheeling bridge case, is, in substance, as follows:—

"I have arrived at the conclusion, and do accordingly decide and report, that the Wheeling suspension bridge is an obstruction to the free navigation of the Ohio river, by the vessels propelled by steam, which are now engaged in the commerce and navigation of that river, and by such vessels as will undoubtedly be engaged in the navigation and commerce of that river hereafter. And I further decide and report that the change or alteration which can or should be made in the construction of the existing conditions of the bridge, to remove

the obstruction which now exists to the free navigation of the river by steamboats, is to raise the suspension cables and the flooring of the bridge, in such a manner as to give a level headway of at least 300 feet, inside, over a convenient part of the channel, and not less than 128 feet above the level of zero, on the Wheeling water gauge.

"This elevation is 28 feet above the highest point of the present bridge, and 60 feet above the elevation of the bridge at the western abutment.—It will give 80 feet headway on the usual high floods of the Ohio, and its estimated cost is \$208,600."

Hot Air Engine.

A paper has been read to the Institution of Civil Engineers, descriptive of Sir G. Cayley's hot air engine, by Mr. W. W. Poingdestre. After entering briefly into the theoretical considerations of the expansion of heated aeriform bodies, and detailing the attempts made by Lieut. Ericsson for employing hot air, instead of steam, as a prime mover, the author proceeded to state, that in 1837 Sir G. Cayley applied the products of combustion from close furnaces so that they should act at once upon a piston, in a cylinder, similar in every respect to that of a single acting steam engine. The engine consisted of a generator of heat, a working cylinder, and an air pump or blower—the air pump being half the size of the cylinder, and blowing air into and through a fire perfectly inclosed within the generator. The doors of the furnace were made perfectly air tight as soon as the fire was well got up; the first impulse being given to the engine by throwing a few jets of water upon the fire, which caused the air pump to work immediately, and continued so for hours, the fire being replenished by stopping off the blast from the furnace, and opening the upper bonnet. After the air had passed through the fire, the gaseous products of combustion, generally at a temperature of 600° Fahrenheit, passed laterally through a chamber, used for separating them from any ashes or cinders, into the working cylinder before alluded to. The difficulty attending this description of engine was, the liability of the working parts to be deranged by the great sensible heat destroying the valves, pistons, and cylinders, and carbonizing the lubricating oil. It was stated, that Mr. A. Gordon had made a successful experiment on the application of the heated products of combustion for propelling a boat, without the intervention of any machinery between the furnace and the water to be acted on.

Britannia Bridge.

We give below from an English publication, a description, the most complete which we have seen, of this great work, the wonder of modern engineering.

First, then, for the Britannia tower. The Britannia rock is formed of Chlorite schist, a very hard stone, difficult of working; and as the rock is dry only for a few hours at a time, the labor and difficulty of forming the foundation of the stupendous tower were very great. The tower is built of hard carboniferous limestone, obtained from the Penmon quarries on Anglesea island; the stones were quarried with iron wedges, and worked into form with heavy steel picks; some of the stones are 20 feet in length, and others weigh from 12 to 14 tons. The stones are all left with a rough or quarry face, except at the angles, the recesses and the entablature. A great portion of the interior masonry of the tower is formed of Cheshire red sandstone. The total height of the tower from the foundation is 230 feet, nearly 30 feet higher than the monument on Fish street hill, and 200 feet above high water. Its width and depth at the base are 62 feet by 52; but at the height where the tubes rest on, or rather enter the tower, these dimensions diminish to 55 by 45. The tower contains 148,625 cubic feet of limestone, and 144,625 of sandstone, weighing together nearly 20,000 tons; while 387 tons of cast iron are built into it in the form of beams and girders.

The east and west, or Caernarvonshire and Anglesea towers, are similar in general construction to the vast Britannia tower, but somewhat smaller; they stand at a clear distance of 460 feet from the Britannia tower. Each tower measures 62 feet by

52 at the base, tapering to 55 feet by 32 at the level of the bottom of the tubes. The height is 190 feet above high water. There are 210 tons of cast iron beams and girders worked into each tower.

The east and west, or Caernarvonshire and Anglesea abutments, are situated inland, at a distance of 230 feet from the east and west towers respectively, and are constructed of massive masonry.—They are ornamented by colossal figures of lions, in the Egyptian couchant style; these lions are each composed of 11 pieces of limestone; they are 25 feet long, 12 feet high, and weigh about 30 tons each. They were sculptured by Mr. Thomas, who is employed on the stone carving for the new houses of parliament. It was part of the gigantic plan to have a colossal figure of Britannia, 60 feet high, on the central tower; but this has not yet been executed, and the company have no funds to bestow upon it.

But the tubes are the most remarkable feature in the bridge. Each portion of tube, between two adjacent towers, is in fact a hollow girder, strong enough to bear its own weight, and to bear a laden railway train in addition; and it was a necessary condition of its construction, that it should be either constructed in its ultimate position on a suspended scaffolding, or else lifted *entire* into its place, after having been put together elsewhere.—Each tube is a girder, too, in this respect—that it derives no strength from any transmission of horizontal pressure to the abutments, such as is derived by the arch; nor from any mode of suspension, such as in a chain bridge; but it resists incumbent pressure in the same way as any rigid plank, beam or girder. These girders or tubes are quadrangular in section; they are hollow from end to end; and their roofs and floors are each formed of a row of smaller square tubes; for it has been found that greater strength is attained by this arrangement, than by forming the same weight of metal into a solid sheet or plate. Each line of tube, the up and the down, is upwards of a quarter of a mile in length; the ends rest in the abutments, and the intermediate portions rest on the three towers, or rather pass through square openings in them. Although they thus form two continuous tubes, they consist in fact of eight pieces, four to each tube, which are joined end to end at the piers. The height of the tubes is 30 feet at the Britannia tower, and diminishes to about 23 feet at the abutments; the upper surface being slightly arched, but the lower horizontal. The clear internal height varies from about 19 feet to 26. The external width is nearly 15 feet, and the internal about 14. The sides, top and bottom are all formed of wrought iron plates, varying from 6 to 12 feet in length, from 21 to 28 inches in width, and from $\frac{1}{4}$ ths to $\frac{1}{2}$ ths of an inch in thickness. The plates, (some of which weigh nearly 7 cwt. each) are laid lengthwise in the top and bottom, but vertically in the sides of the tube. The largest plates are in the bottom, where they are arranged in a double layer. The plates are joined together by rivets; and are stiffened and strengthened at the joints by T shaped iron, both inside and out, which form vertical bars up the sides, at distances of two feet apart. The connection of the top and bottom with the sides is made more substantial by triangular "gusset pieces," rivetted in at the corners. The rivets in the entire structure are almost incredibly numerous; they are placed four inches apart in the top and bottom, and three inches apart in the sides. They are rather more than an inch in diameter, and were driven red hot into the rivet holes, which holes were made by a powerful machine that punched out forty holes in a minute. The whole bridge contains nearly two millions of these rivets. The square cells, tubes, or flues, which form the top and bottom, are 14 in number, viz: 8 in the top, measuring 21 inches high by 21 wide; and 6 in the bottom, 21 inches high by 28 wide. The vertical sides of these cells are strongly connected to the plates of the top and bottom with L shaped bars of wrought iron. The two tubes contain 65 miles in length of T and L iron. The whole weight of wrought iron in the tubes is about 3200 tons.

The mode of constructing these tubes was not the least remarkable part of the operations. The short tubes (those between the abutments and the side towers) were constructed on platforms at their

ultimate level; but the long tubes (those between the side towers and the Britannia tower) were constructed on floating platforms on the Caernarvonshire beach. The scaffolding for building the towers and the short tubes was among the finest ever yet formed. It consisted of whole "balks" of timber, logs from 12 to 16 inches square, and some of them as much as 60 feet long; they were fastened together without nails, so as to be afterwards available without injury for other purposes. This beautifully formed scaffolding beneath the short tubes was about 100 feet in height; and around the Britannia tower it rose to a height of 250 feet. The span between the abutments and the side towers is 230 feet; but the short tubes are each 242 feet long, to allow space for resting on their supports. In like manner the span between the Britannia tower and the side towers is 460 feet; but the long tubes are 472 feet, to furnish supports at the ends.

The long tubes, it has been stated, were constructed on the Caernarvonshire beach. The platforms for this purpose were made of whole balks of timber, and extended nearly half a mile along the beach; each of the four long tubes having a platform to itself. When the tubes were finished, their transport from the platforms to the towers was, like all else in the enterprise, cleverly managed. Each tube was conveyed on eight huge pontoons, or close barges; each pontoon being capable of floating a weight of 400 tons. These pontoons were brought beneath the ends of the tube; and by taking advantage of variation of tide, they lifted the tube off the platform, and supported its whole weight. They were then navigated, by enormous hawsers, cables, and capstans, to the Britannia rock, where the tube was brought as nearly as could be to its proper position. All the four long tubes were, one by one, as fast as they were finished, floated in a similar way to the Britannia tower, and placed across the river at the proper spot, where arrangements were made for supporting them until they were raised into their place.

The lifting of these tubes is regarded, we believe, as the most gigantic operation of the kind of which the history of engineering has any record. Each one of the four large tubes, with the apparatus attached to it for aiding the lift, weighed 1800 tons; and this unparalleled weight had to be raised to a height of about 100 feet! It was effected through the medium of hydraulic pressure. Chains of enormous strength were fastened to the ends of the tubes; and the upper ends of these chains were connected with hydraulic presses constructed on the tops of the towers; these presses, like many other parts of the apparatus, were larger and more powerful than any before constructed for any purpose. Two steam engines, of 40 horse power each worked the presses; these presses gradually drew up the chains; and the chains carried up the tube; and so extraordinary was the precision of the arrangements, that a long day of about eighteen hours was sufficient to raise a tube to its full height.

From the Year Book of Facts.

Application of Electro-Magnetism as a Motive Power.

BY MR. ROBERT HUNT.

In this paper (read to the Society of Arts, London,) the author called attention, in the first place, to the numerous attempts which have been made to apply electro-magnetism as a power for moving machines, and particularly described the apparatus employed by Jacobi, Dal Negro, M'Gauley, Wheatstone and others, noticing incidentally the machines recently constructed by Mr. Hjorth. Since, notwithstanding the talent which has been devoted to this interesting subject, and the large amount of money which has been spent in the construction of machines, the public are not in possession of any electro-magnetic machine which is capable of exerting any power economically; and finding that, notwithstanding the aid given to Jacobi by the Russian government, that able experimentalist has abandoned his experimental trials—the author has been induced to devote much attention to the examination of the first principles by which the power is regulated, with the hope of being able to set the entire question on a satisfactory basis.

The phenomenon of electro-magnetic induction was explained, and illustrations given of the magnetisation of soft iron by means of a voltaic cur-

rent made to circle around it. The power of electro-magnets was given, and the author stated his belief that this power could be increased without limitation.

A voltaic current produced by the chemical disturbance of the elements of any battery, no matter what its form may be, is capable of producing by induction a magnetic force, *this magnetic force being always in an exact ratio to the amount of matter (zinc, iron, or otherwise) consumed in the battery.*

Several forms of the voltaic battery were explained, particularly those of Daniell, Grove, Bunsen, and Reinsch; the latter being constructed without metals, depending entirely on the action between two dissimilar fluids, slowly combining.

The author had, however, proved, by an extensive series of experiments, that the greatest amount of magnetic power is produced when the chemical action is the most rapid. Hence, in all magnetic machines, it is more economical to employ a battery under an intense action, than one in which the chemical action is slow. It has been proved by Mr. Joule, and most satisfactorily confirmed by the author, that one horse power is obtainable in an electro-magnetic engine, the most favorably constructed to prevent loss of power, at the cost of 45 pounds of zinc, in a Grove's battery, in 24 hours; while 75 pounds are consumed in the same time to produce the same power in a battery of Daniell's construction. The cause of this was referred to the necessity of producing a high degree of excitement to overcome the resistance which the molecular forces offer to the electrical perturbations, on which the magnetic force depends.

It was contended that, although we have not perhaps arrived at the best form of voltaic battery, yet that we have learned sufficient of the law of electro-magnetic forces to declare that, under any conditions, the amount of magnetic power would depend on the change of state—consumption of an element—in the battery, and that the question resolved itself into this:

What amount of magnetic power can be obtained from an equivalent of any material consumed?

The following were regarded as the most satisfactory results yet obtained:

1. The force of voltaic current being equal to 678, the number of grains of zinc destroyed per hour was 151, which raised 9000 pounds one foot high in that time.

2. The force of current being, relatively, 1300, the zinc destroyed in an hour was 291 grains, which raised 10,030 pounds through the space of one foot.

3. The force being 1000, the zinc consumed was 223 grains; the weight lifted one foot 12,672 lbs.

The estimations made by Messrs. Scoresby and Joule, and the results obtained by Oersted, and more recently by Mr. Hunt, very nearly agree; and it was stated that one grain of coal consumed in the furnace of a Cornish engine lifted 143 pounds one foot high, whereas one grain of zinc consumed in the battery lifted only 80 pounds. The cost of one hundredweight of coal is under 9 pence, and the cost of one hundredweight of zinc is above 216 pence. Therefore, under the most perfect conditions, magnetic power must be nearly 25 times more expensive than steam power.

But the author proceeded to show that it was almost proved to be an utter impossibility ever to reach even this condition, owing, in the first place, to the rate with which the force diminishes through space. As the mean of a great many experiments on a large variety of magnets, of different forms and modes of construction, the following result was given:—

Magnet and armature in contact lifting force	220 pounds.
" distant 1-250 of an inch	90.6 "
" " 1-125 "	50.7 "
" " 1-63 "	50.1 "
" " 1-50 "	40.5 "

Thus, at one-fiftieth of an inch distance, four-fifths of the power are lost.

This great reduction of power takes place when the magnets are stationary.

The author then proceeded to show that the moment they were set in motion a great reduction of the original power took place; that, indeed, any disturbance produced near the poles of a magnet, diminished, during the continuance of the motion, its attractive force.

The attractive force of a magnet being 150 pounds when free of disturbance, fell to one-half, by occasioning the armature to revolve near its poles.

Therefore, when a system of magnets, which had been constructed to produce a given power is set in revolution, every magnet at once suffers an immense loss of power, and consequently their combined action falls into practice very far short of their estimated power. This fact has not been before distinctly stated, although the author is informed that Jacobi observed it.

And not merely does each magnet thus sustain an actual loss of power, but the power thus lost is converted into a new form of force, or rather becomes a current of electricity, acting in opposition to the primary current by which the magnetism is induced.

From an examination of all these results, Mr. Hunt is disposed to regard electro-magnetic power as impracticable on account of its cost, which must necessarily be, he conceives, under the best conditions, 50 times more expensive than steam power.

The Chairman (Mr. W. F. Cooke) agreed with Mr. Hunt in his conclusion of the improbability of any result being obtained from electro-magnetism which could enable it to compete with steam as a motive power. At any rate, the point to which the attention of engineers and experimentalists should be turned at present was, not the contriving of perfect machines for applying electro-magnetic power, but the discovery of the most effectual means of disengaging the power itself from the conditions in which it existed stored up in nature. Mr. Faraday assured us that in a single drop of water is contained as much electricity as is developed in a thunder-storm. The portion of this which we can liberate by any existing battery is very small; so small that, as shown by Mr. Hunt's paper, its practical use cannot be profitable. The study of electro-chemistry, he thought, was a more promising field, and one from which might at a future time be developed a power which should supercede even steam.

Banks in the United States.

The February number of the Bankers' Magazine, has the following statement respecting the banks of the several States, and their aggregate capital at the close of the year 1850:—

States	No. of Banks.	Capital.
Maine.....	35	\$3,548,000
New Hampshire.....	22	2,205,000
Vermont.....	27	2,225,000
Massachusetts.....	130	38,260,005
Rhode Island.....	63	11,179,872
Connecticut.....	42	10,073,101
New York.....	195	48,976,868
Delaware.....	9	1,440,000
Louisiana.....	5	16,600,000
New Jersey.....	26	3,754,900
Pennsylvania.....	53	16,609,781
Georgia.....	17	5,329,215
Maryland.....	24	9,073,873
Virginia.....	35	9,713,100
North Carolina.....	19	3,650,000
South Carolina.....	14	11,431,183
District of Columbia.....	4	1,182,300
Mississippi.....	1	100,000
Ohio.....	57	7,427,171
Kentucky.....	26	10,180,000
Alabama.....	2	2,000,000
Indiana.....	13	2,082,910
Tennessee.....	21	8,165,197
Missouri.....	6	1,208,751
Wisconsin.....	1	225,000
Iowa.....	1	200,000
Texas.....	1	300,000
Michigan.....	6	762,000
	855	\$226,902,222

From this table, it appears that we have in the Union eight hundred and fifty-five banks, the aggregate capital of which is two hundred and twenty-six millions, nine hundred and two thousand, two hundred and twenty-two dollars, and that Massachusetts possesses nearly one-sixth part of the banking capital of the United States, and yet we learn from the Boston papers that applications for an increase of banking capital there are more nu-

merous and more urgent than in any other State in the Union, though the population does not amount to one-twentieth part of that of the country. Massachusetts has more than three-fourths as much banking capital as the State of New York, and more than double that of the State of Pennsylvania.

A Fine of Flues.

In course of operations in the Tamar Silver Lead Mines, on the borders of Devon and Cornwall, it became latterly essential either to erect a powerful steam engine at the foot of a subterranean inclined plane, 2000 feet in length, and running right below the river which runs right over the mine, to a perpendicular depth of 800 feet below its bed; or, failing that, to shut up the mine and throw 1500 people out of employment. It was, therefore, determined to adopt the former alternative, and a 20-horse steam engine, one of the patent combined hydraulic engines from Walker's manufactory at Oliver's yard, City-road, was accordingly fitted up at that depth. Flues were, of course, requisite, and it was found advisable to conduct these across to the furthest bank of the river, and in a series of horizontal levels united by perpendicular shafts, so that the flue in sections rises like a flight of stairs to the surface. The flue is no less than two miles long and upwards, probably the longest flue in the world. The result was quite successful, as will appear from the following statement:—"We drew through Spurgin's shaft in October month 2988 kibbles of stuff with Walker's new underground engine; this machine is well constructed, and I have every reason to believe she will pump the shaft 150 fathoms deeper than it is at the present time. We have in these mines six steam engines at work at the surface, but the draft of the underground engine exceeds the whole. The consumption of coals is 5 cwt. in the twenty-four hours.—*London Builder.*

Pennsylvania.

Reading Railroad.—The following is the estimated income of this road for the coming year by the friends of this company:

Tolls on 1,500,000 tons of coal, at 1 50.	\$2,225,000
Passengers and freight, same as Dec. and Jan.....	390,000
U. S. Mail.....	9,400
Miscellaneous receipts same as last year	8,600
Total.....	\$2,633,000

EXPENSES.

On coal, 62½ cts per ton.....	\$931,650
On passengers.....	65,000
On merchandise.....	75,000
Missing coal and sundries.....	55,000
Dumpage, &c. 6½ cts. per ton.	97,500—1,224,150

Net profits for the year.....	\$1,408,850
Interest on bonds.....	\$613,266
Renewal fund.....	81,734—695,000

Dividend fund.....	713,850
Interest on \$1,600,000 preferred.	112,656
Sinking fund.....	100,000
State tax on dividends.....	5,600 217,656

Balance of dividend fund.....	\$496,194
Dividend on common stock, \$4,159,832 at 7 per cent.....	\$291,188 24

	205,005 76
Deduct State Tax, 5 per cent.....	10,250 00

Surplus.....	\$194,755 76
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The net receipts of the road in December, January and February were \$270,000. The stock on the 1st of March, present, was thus divided:

Whole number of shares.....	83,196
Held permanently in England.....	21,000
" " Philadelphia.....	8,100
" " by brokers in Philadelphia.....	17,900
" " Boston.....	3,700
" " New York.....	14,510
" " permanently in New York.....	8,000
" " Boston.....	9,986

STATEMENT OF THE SEVERAL ITEMS OF EXPENDITURE OF TRANSPORTATION PER PASSENGER AND PER TON PER MILE ON THE HUDSON RIVER RAILROAD.

	Amount.	Allotted to passenger transportation	Allotted to freight transportation	Per passenger per mile.	Passengers per mile run.	Freight per ton per mile.	Freight per ton per mile run.
<i>Expenses of Maintaining Road.</i>							
Repairs of road bed and railway, excepting cost of iron, (see Law).....				cts.	cts.	cts.	cts.
Depreciation of way.....	\$14,338 55	13,826 55	512 00	0-077	8-726	0-223	0-020
Cost of iron used in repairs:—							
Allotted to passenger transportation, length in feet, weight in lbs. }							
“ freight “ “ “ }							
Repairs of buildings.....	53 62	53 62		0-0003	0-034		
Repairs of fences and gates.....	4 02	4 02		0-00002	0-002		
Taxes on real estate.....	4,269 11	3,794 11	475 00	0-021	2-395	0-207	1-594
Totals.....	19,665 30	17,678 30	987 00	0-09832	11-157	0-430	1-914
<i>Expenses of Repairs of Machinery.</i>							
Repairs of engines and tenders.....	7,848 43	7,568 13	280 30	0-042	4 713	0-122	1-117
Depreciation of do.....							
Repairs of passenger and baggage cars.....	7,920 49	7,920 49		0-044	5-000		
Depreciation of do.....							
Repairs of freight cars.....	405 90		405 90			0-177	1-618
Depreciation of do.....							
Repairs of tools and machinery in shops.....	482 67	465 43	17 24	0-003	0-294	0-007	0-068
Incidental expenses, including oil, fuel, clerks, watchmen, etc, about shops.	193 17	186 07	7 10	0-001	0-117	0-003	0-028
Totals.....	16,850 66	16,140 12	710 54	0-090	10-124	0-309	2-831
<i>Expenses of Operating the Road.</i>							
Office expenses, stationery, etc.....	1,901 08	1,742 56	158 50	0-009	1-099	0-069	0-639
Agents and clerks.....	7,138 04	6,328 04	810 00	0-035	3-994	0-352	3-230
Labor, loading and unloading freight.....	840 92		840 92			0-366	3-353
Porter, watchmen and switch tenders.....	31,610 29	29,597 29	2,013 00	0-166	18-681	0-876	8-036
Wood and water station attendance.....	985 52	950 32	35 20	0-005	0-600	0-015	0-140
Conductors, baggage and brakemen.....	9,213 66	8,473 66	740 00	0-047	5-348	0-322	2-950
Enginemen and firemen.....	7,648 93	7,375 76	273 17	0-041	4-655	0-119	1-089
Fuel, cost and labor preparing.....	24,380 34	23,309 59	1,070 75	0-131	14-712	0-466	4-269
Oil and waste for engines and tenders.....	3,982 40	3,739 90	242 50	0-021	2-361	0-106	0-967
“ freight cars.....	274 06		274 06			0 119	1-092
“ passenger and baggage cars.....	2,306 55	2,306 55		0-013	1-456		
Loss and damage of goods and baggage.....	381 76	287 06	94 70	0-001	0-181	0-041	0-380
Damages for injuries to persons.....	200 25	200 25		0-001	0-126		
“ to property, including damages by fire and cattle killed on road..	305 26	305 26		0-002	0-192		
General superintendence.....	3,498 70	3,373 10	125 60	0-019	2-129	0-054	0-500
Contingencies.....	23,699 75	22,839 75	860 00	0-128	14-416	0-374	3-430
Totals.....	118,829 11	110,829 11	7,538 40	0-619	69-950	3-279	30-058

Ohio.

Toledo, Cleveland, and Norwalk Railroad.—There was a meeting of the stockholders of the Cleveland, Norwalk and Toledo railroad company at Norwalk, at which a report was made, from which it appeared that according to the report of the engineer, the whole distance from Toledo by that route, to its junction with the Cleveland and Columbus railroad is 76 miles, and that for the completion of the substructure, ready for the iron, it will require at least.....\$350,000

Of this sum there is subscribed,
in Huron county, including
Bellevue.....\$90,000
Sandusky county.....20,000
Toledo.....50,000
180,000
Add to this 20 per cent expected
to be subscribed by contractors 36,000
216,000

Leaving to be provided for.....134,000
To make up this deficiency they
call upon the townships interest-
ed to vote, to raise by tax-
ation the following amounts:
In Sandusky county.....\$50,000
In Huron county.....50,000
In Harris township Ottawa county 1,500
In Clay “ “ 1,500
In Camden “ Lorain “ 2,000
In Russia “ “ 10,000
Expected individual subscription 14,000
129,000

Unprovided for in any way.....5,000

The amendments to the law provide for taking the votes relative to taxation as follows:—All the townships in Sandusky county, except Townsend and Woodville, Clay and Harris in Ottawa; the

five northern townships in Huron, and Camden and Russia in Lorain; and they recommend that the question be submitted to the people in the respective townships at the April election.

The directors were, by resolution, instructed to locate the road on the best and most feasible route from Fremont to Bellevue; and from thence by the best route to the northern townships of Huron county to Oberlin; and in making the location to consult the convenience and business accommodation of the public along the line, not incompatible with the interests of the company.—*Sandusky Clarion.*

The Columbus, Piqua and Indiana Railroad.—The President and one or two of the directors of this road have been in this city for several days, calling public attention to the importance of this enterprise.

Upon an examination of this road and its connections, shown us by these gentlemen, we confess that we have been more favorably impressed with its importance to our city than we ever were before.

This road may very properly be denominated a link, and a very important one too, in a chain of railway commencing from East to West through our State. Its general course from this city is North of West, in the direction of Urbana, a distance of 44 miles, where it crosses, at right angles, the Mad River and Lake Erie railroad, from thence to Piqua in the same direction; at this point it crosses the Miami Canal, and thence to the west line of the State, forming a connection with the Indianapolis and Bellefontaine railroad. No one can fail to see, by reference to the map of the State, that the line is nearly straight, and must necessarily throw a very large amount of travel into this city, and on our roads running East and North East from this point.

We are gratified to learn from these gentlemen, that their prospects for the accomplishment of this work are so encouraging. Between twenty and thirty miles of the line are now under contract, and

the contractors at work, and active operations are now in progress preparatory to a second letting, which will bring the work within some sixteen miles of the city. Will not our citizens lend a helping hand for an amount sufficient to authorize this Company to put the entire line into the hands of contractors this year? We are assured that if a sufficient amount of stock could be obtained this would be done.—*Ohio State Journal.*

Our Rail Roads.—It must be truly gratifying to our citizens to witness the increase of travel; to and from our city since the communication between Cincinnati and Cleveland, and more especially so, when we remember that navigation is not open on the lakes and that there is nothing unusual going on at this time in the capital, to attract visitors to travel. Our attention has been directed within the last week by Judge Mitchell, the President of the Columbus, Piqua and Urbana railroad, and Ira A. Bean, Esq., of Urbana, one of the directors of this road, to a map respecting the important points to be connected by this new link in our chain of railroads, which we hardly knew before was in progress. It is highly gratifying to learn from these gentlemen, that our friends North-west of us, in view of the important connections being formed here, have resolved to fill up the link between Columbus and Indianapolis, by constructing a railroad running from this point in a north-westerly direction through Urbana and Piqua to the State line, intersecting the Indianapolis and Bellefontaine road, thus opening at once a direct line of communication between from east to west, diverging at the capital over the Cleveland road by way of the Lake route, and east and south-east, to Washington, Baltimore and Philadelphia, over the Central road, by way of Wheeling. We were still more gratified, and even surprised, to learn that our wealthy and enterprising farmers, throughout that rich portion of Ohio which is tapped by this road, have come forward in accordance with the spirit

of the age, and sustained the efforts of the company, by their subscriptions of stock, as to fully warrant the board in already letting between 20 and 30 miles of the line, and to resolve to put under contract the balance of the line as far east as big Darby advancing within some 16 miles of this city. All this has been accomplished by our western friends, who are struggling to get a connection with us, without the aid of one dollar from this city. Our county and city, as well as many of our wealthy and enterprising citizens, came forward and extended a helping hand to each of our other roads, and shall we withhold our hearty co-operation from this important enterprise? When we know that the stock of the Xenia road, which has been running less than a year, is selling at par, we cannot suppose that those of our citizens who are deeply interested in the upholding of the city, can be wanting for inducements to aid in this work. We are assured by many that they will aid, and we say to our western friends that they will.—*Ohio Statesman*.

Cleveland and Pittsburgh Railroad.—The *Cleveland Herald* of the 12th inst. says:—"To-day the Cleveland and Pittsburgh railroad is completed to Ravenna, and trains will run regularly between that point and Cleveland after this week. The company are making arrangements for the erection of large Depot buildings here, and are now building a turn-table forty feet in diameter, which is a superior specimen of heavy timber work. The Ohio stage company route will be from Akron via Cuyahoga Falls and Franklin to Ravenna and Warren daily.

Steubenville and Indiana Railroad.—The *Coshoc-ton Republican* states that the Steubenville and Indiana Railroad will be placed under contract the entire distance, between Steubenville and Coshoc-ton, and perhaps to Dresden and Zanesville, this spring.

Junction Railroad.—The *Elyria Courier* says "Messrs. Ogilby & Co. have, during the last week, underlet nearly every section of the work on the Junction railroad, to Sandusky City. The work is to be immediately commenced and vigorously prosecuted until it is finished."

"It is the intention of the enterprising contractors to complete the road from this place to the junction, at Berea, early in the season; and the energy they have exhibited in the prosecution of the enterprise thus far, guarantees its early completion to Sandusky City."

Kentucky.

The railroad from Louisville to Frankfort only lacks about ten miles at this end, of completion. An omnibus runs daily from Frankfort to the present terminus, for the accommodation of passengers. Citizens of Lexington may now leave this city by the cars in the morning, and reach Louisville by this route the same day at dinner time. Passengers by this route now reach this city in the 11 o'clock train, having left Louisville the same morning. This is the cheapest and quickest route.—*Kentucky Statesman*.

New York.

Opening of the Erie Canal.—The *Albany Journal* of Friday evening says there is some prospect that the Canal Commissioners will soon designate a day for the opening of the Erie, Oswego, and Champlain Canals. The 15th of April has been spoken of by some.

The Board of Trade of Buffalo have held a meeting, at which they unanimously adopted the following preamble and resolutions:

Whereas, The Ohio Canal, Muskingum Improvement, and other public works of Ohio, affording water communication between Lake Erie and the Ohio River, are now open at their southern extremities, and will be open through their entire length before the first of April.

And Whereas, The Pennsylvania Canals are now in active operation, and from the greatly reduced

cost of transportation by that route since the recent reduction of tolls, and the advantage of from six to eight weeks earlier access to tide-water—will divert a large amount of produce from the Erie Canal route, until the opening of our canal.

And Whereas, Reliable information has been communicated to members of this Board, by millers and other shippers of produce in Southern Ohio that they are now shipping via the Ohio River and Pennsylvania Canal, but desire to ship by Lake Erie and the Erie Canal, whenever they can do so without a detention of their property at Buffalo.

And Whereas, An early opening of the Erie Canal, would secure for transportation over its waters a considerable amount of produce from various ports on our Western Lakes, which might otherwise be diverted through the Welland Canal, and down the St. Lawrence River, or over the Ogdensburg railroad, and also of a large amount of merchandise coming from tide-water, which would otherwise be shipped over the New York and Erie and other railroads and through the Pennsylvania Canal.

And Whereas, The experience of past years have demonstrated that whenever a considerable period has elapsed between the opening of navigation on Lake Erie and the Canal, the expense of handling and forwarding produce arriving in the interim has been greatly increased, the market depressed, and owners of produce involved in losses, and rendered dissatisfied with the Erie Canal route for Spring shipments. Therefore,

Resolved, That in the opinion of this Board, it is of the utmost importance to the revenues that the earliest practicable period be adopted for the opening of the Erie Canal through its entire length.

Resolved, That the Canal Board be, and they are hereby respectfully solicited to adopt measures to ensure the opening of the Canal as early as the 5th of April ensuing, if in their opinion practicable.

Resolved, That Messrs. E. O. Gould, J. L. Reynolds, and M. S. Hawley be a committee to communicate the proceedings of this meeting to the Canal Commissioners.

Resolved, That the proceedings of this meeting be published in the daily papers of the city.

H. E. HOWARD, President.

M. S. HAWLEY, Secretary pro tem.

Railroad per Canandaigua.—The parties interested in the project for building a road from Niagara Falls to Canandaigua, of six feet gauge, to connect with the Canandaigua and Chemung roads, and so by the Erie with New York, have organized a company for that purpose, and the following officers elected:—W. H. Townshend, Isaac Seymour, Moses Maynard, Jr., H. A. Johnson, J. P. Giraud Foster, Paul N. Spofford, New York; Simeon Benjamin, Elmira; Aug. C. Porter, Niagara Falls; Benj. Pringle, Batavia; Francis Wilson Paul, Canandaigua; George Wright, Bloomfield; Saml. Rand, Honeye Falls; Ira Godfrey, Lima, as directors: Wm. H. Townshend, President; Benj. Pringle, Vice-President; Isaac Seymour Treasurer.

FARE ON THE S. & U. RAILROAD.—The fare on the Syracuse & Utica railroad will be as follows after the first of April:—

From this city to Manlius,	15 cts.
To Kirkville	20 "
To Chittenango,	30 "
To Canasara,	35 "
To Canastota,	40 "
To Wampsville,	45 "
To Oneida,	55 "
To Verona,	60 "
To Green's Corners,	70 "
To Rome,	80 "
To Oriskany,	95 "
To Whitesboro',	100 "
To Utica,	109 "

Railroad from Blossburgh to Elmira.—There is a project on foot for extending the Blossburgh railroad to Elmira. The proprietors of that road, says the *Elmira Republican*, have resolved to relay it with a heavy T rail, but there is a difficulty between the Corning Company and the Pennsylvania Company in reference to the gauge of the track, the Corning Company insisting on the present nar-

row gauge in order to connect trans-shipment at that place, and the Pennsylvania Co. being equally resolved to have the wide or six foot track. The arrangements, we understand, are nearly made for relaying the rail, the iron being already furnished, and unless the Corning company yield their position, the Pennsylvania Company will terminate the lease of their road now existing.

Sackett's Harbor and Saratoga Railroad.—The law authorizing a company to construct the Sackett's Harbor and Saratoga road, was passed April 10th, 1848. It directed the controller to sell to the company as often as it expended \$25,000 east of Carthage, and paid into the treasury 5 cents per acre, 25,000 acres of land to be selected in alternate sections of not less than 1000 nor more than 2000 acres, until there shall have been conveyed to them 250,000 acres of lands in the counties of Herkimer and Hamilton. This charter gave the company three years to organize. During the last year, individuals living year the line in the counties of Jefferson and Lewis, procured the survey of the road, with a thorough exploration of the country through which it passes, at an expense of not less than \$4,000. The necessary amount of stock has been subscribed, and a day appointed to meet and organize.

Important Invention.

Mr. H. Perkins, of this city, has invented a machine for propelling Canal Boats by steam, and has filed his caveat preparatory to taking out a patent. The main principle of the apparatus consists "in the paddles getting their adhesion aft the boat—commencing to travel three feet from the stern, having a five feet stroke." This is done by having two cases ten inches square by eight feet long, sliding out of two stationary cases from under the stern deck two feet apart, and within four inches of the surface of the water, when the boat is loaded. Each of these cases contains a tongue on six wheels, travelling inside, on a rail track. In the further end of the tongue is a paddle two feet by 15 inches deep, with a joint three inches above the surface of the water, causing it to pass on the surface in its travel toward the boat. The whole is under the control of the helmsman, and the cases can be drawn out of or into the boat at any moment by his putting his hand to a lever. The apparatus occupies the room under the stern deck, projecting six feet into the cabin, and in no way lessens the bearings or capacity for storage.

Mr. Perkins is about to put one of these machines into a boat lying at the Washington-street bridge, where it may be inspected. He will use in this one of Hoard and Bradford's portable engines. The whole weight of the engine and apparatus will not exceed 2,700 pounds, and it is estimated by Mr. P. that the cost of propelling a trip round to New York will not exceed \$40. The whole cost of the machine engine, and putting them into the boat, will not exceed \$450.—*Buffalo Commercial Advertiser*.

Pennsylvania.

The *Erie Observer* states the bill regulating the width of gauges of the several railroads running east and west from that city, has passed the Senate, and has, ere this, been signed by the Governor, and has become a law. This bill provides that all roads running east from the city of Erie shall be confined in laying down their tracks to the six feet and four feet eight inch gauges of the New York and Erie and the Central New York roads, and that all railroads running west, shall be confined to the four feet ten-inch gauge of the Ohio roads.

Illinois.

Central Railroad.—The Auditor of the State of Illinois has made a map of the land through which the Illinois central railroad is to pass, and, it is stated, has found that the vacant lands on the main track between Cairo and Peru, granted by Congress, amount to 3,174,000 acres.

Railroad Paint.

FOR depot buildings, bridges, burthen cars, wheels and all other things, steam joints, fences, and every description of work requiring protection from the action of the elements. Price per barrel of 300 pounds, nine dollars.

Orders addressed to J. M. HALL, 36 South street, New York, will receive prompt attention.
March 18, 1851. 3m*

UNION WORKS,

North street, opposite the Railroad Depot,
BALTIMORE.

Poole & Hunt,

Manufacturers of Steam Engines and Mill Gearing, Machinists' Tools, and all kinds of heavy and light Machinery.

Also put up Arrangements of Wrought Iron Pipes for heating buildings and conveying steam or water. Castings of every kind furnished at short notice.

Every exertion will be made to insure the satisfaction of customers.

Smith & Tyson,,

IRON COMMISSION MERCHANTS,
BALTIMORE.

REFINED Juniata Charcoal Billet Iron for Wire. Do. for Bridging, of great strength. Flat Rock, Boiler and Flue Iron, rolled to pattern. Elba, Wheel Iron of great strength and superior chiling properties. Elba Forge Iron, American Shot Iron, Cut Nails, Spikes and Brads, Nail and Spike rods, Railroad Spikes of superior quality, Wrought Chair plates of any pattern, punched or plain.

Railroad Spikes, Wrought Chairs and Fastenings.

THE subscribers continue to manufacture, with increased facilities, Hook and Flat Head Railroad Spikes and Chairs. The points being FINISHED BY HAND, have a long taper, and sharp point, and are much superior to those made entirely by machinery.

We are also prepared to furnish Wrought Chairs, Clamps and Fastenings of every description, either punched or plain. The best quality of refined iron is used in the above articles, and our prices will be made as favorable as any in the country.

The patent Clinch Spike will be found an improvement to secure the rail at the joints. They drive in the manner shown and are not liable to work loose.

All communications, addressed to the undersigned, will meet with prompt attention.

SMITH & TYSON,

No. 25 South Charles st., Baltimore Md.

Car Wheel Iron.

THE celebrated cold blast "Conowingo" Pig Iron, for Railroad Wheels, Chilled Rolls, etc., for sale by
E. PRATT & BROTHER,
Baltimore, Md.

AMERICAN RAILROAD JOURNAL.

Saturday, March 23, 1851.

The Stock and Money Market.

The stock market continues dull, and new securities are not much in request, though there is no lack of money, there is an unwillingness to enter into new transactions, till the future shall have disclosed itself. Those who have bonds or stocks to offer, for the purpose of raising means for works in progress, will find it for their interest not to offer them for the present. The market has not yet recovered from its recent reaction. A gradual improvement will undoubtedly soon take place—as soon as the season is a little more advanced.

Business of all kind is dull, and prices, particularly in the dry-good line, are receding. The spring trade by no means comes up to the expectations of our merchants. We think this may be accounted for, to some extent, by the influence of railroads, which enable the country dealer to supply himself at an instant's notice, and do an equally good business upon a much smaller stock than formerly. When weeks and months were required to transport his goods to his place of business, he

could conveniently purchase only twice a year.—He can now order, and be supplied as speedily and cheaply, at one time as at another, and he keeps on hand only what is wanted for his immediate calls, and buys as he sells. The aggregate is the same, but divided over the whole year. Our merchants have not adapted their business to this change in the position of their customers, hence the complaint which we have noticed.

Another cause which checks operations, is the large amount of capital required for the new banks which are about going into operation in this city. The calls for this purpose equal several millions of dollars. The same cause is operating to some extent in other large cities. The ultimate effect will be an increased abundance of money, as soon as these banks shall go into operation, though the present tendency is to draw a large amount from circulation.

SALES OF STOCK IN NEW YORK.

	March 19. Sales.	March 12. Sales.
U. S '67 Loan.....	115½	116
Erie R.R.....	81	80½
Harlem R.R.....	68½	67½
Stonington.....	41½	42
L.I. R.R.....	23½	23½
Norwich & Wor....	63½	63
Del. & Hudson....	129½	133½
Reading.....	59½	60½
Morris Canal.....	18½	18
Erie income.....	93½	91½
" " Bonds.....	103	104
Canton.....	62	55
Farmers Loan.....	63½	67½

SALES OF STOCKS IN BOSTON.

	March 18.	Mar. 11.
Old Colony Railroad.....	69	68½
Boston and Maine R.R.....	104½	105½
Eastern Railroad.....	102½	103½
Fitchburg Railroad.....	111½	111½
Michigan Central Railroad....	94½	92
Northern Railroad.....	70½	68½
Vermont Central Railroad.....	34½	34½
Vermont and Mass. R.R.....	29	28½
Western Railroad.....	105	105½
Ogdensburg Railroad.....	39	39½
Rutland Railroad.....	59	58½
Boston and Worcester Railroad.	103½	104
Rutland Railroad Bonds.....	88	85
Ogdensburg Railroad Bonds....	97½	99
Vermont Central R.R. Bonds....	92½	92
Boston and Providence R.R.....	83½	83½
Philadelphia, Wilm'gton & Balt.	30½	29½
Concord R.R.....	56	55½
Manchester and Lawrence.....	90	90

The Compound Rail.

The subject of substituting a continuous compound rail for the one in present use, is now attracting much attention on the part of those interested in railroads. The defects of the common form are admitted, and there is a general belief that they can be remedied. If so, a great revolution will be effected in the expense of operating roads.

The two kinds of compound rail which have been subjected to the most satisfactory test, are those invented by Mr. Seymour and Mr. Latrobe, of which we have already given a minute account. The former has already been in use with great success upon two roads, the Utica and Schenectady and the New York and Erie. The Hudson river railroad company have just ordered a quantity for that road. The Reading company are now laying a few hundred tons by way of experiment. A number of other companies are also about to make similar trials of it. If these tests should prove satisfactory, we may expect that the compound rail will altogether supersede the present form. In five years from this time, we do not believe that

any other but the compound rail will be used, so decidedly superior has it proved itself thus far.—We would advise all companies that are purchasing iron, to order at least a sufficient quantity to test its merits on their own roads. They should remember that the expense of the rail makes up a large portion of the aggregate cost of railroads, and that the adoption of the common rail will preclude in most cases the use of the compound article for many years; and if the latter possesses the superiority claimed, it will give a great advantage to those using it over the companies that do not.

The Seymour rail has thus far been manufactured at the Mount Savage Works in Maryland, where the rail designed for the Hudson river road is now being rolled. The quality of all the iron that have been used has given great satisfaction.

The safety which must result from the use of the compound rail upon curves, and upon bridges and culverts, should at once cause it to be used in all such places. The weight of a certain quantity of rail will serve the office of abutments, and upon bridges of ordinary span, would alone sustain a train, without any support from the bridge.

Remarkable property of Steam connected with the theory of the Steam-Engine.

Mr. J. P. Joule, F.R.S., has communicated to the *Philosophical Magazine*, No. 251, a letter from Professor W. Thompson, containing an explanation of the true cause of the non-scalding property of Steam issuing from a high-pressure boiler. The proposition (announced by Mr. Rankine) is certainly one of very great importance; as it would appear from it that when saturated steam is allowed to expand so as to evolve work, a part of it is condensed, and that this condensation affords heat for the expansion of the remainder of the steam.

North-East Railroad.

We learn, says the *Erle Gazette* of Tuesday, that at a meeting of the board of directors of the Erie and North-East railroad company, on Monday evening, it was resolved to immediately commence grading a track, parallel with the route of the Erie and North-East road, for the accommodation of the Buffalo and State Line Road. The two tracks—six foot and four foot eight and a-half inches—are to be finished and in running order on the first of August next.

Marine Propulsion.

A question of considerable interest, in respect to steam navigation, has been argued before the Judicial Committee at the Privy Council office, Whitehall, Lords Brougham, Campbell, and Langdale, Dr. Lushington, and Mr. Pemberton Leigh, being present. An application was made by Sir Frederick Thesiger, on behalf of the patentees of the screw propeller, for an extension of their patent which would expire shortly. The evidence went to prove that no less than 30,000l. had been expended in building the *Archimedes*, and in defraying other weighty charges to establish the Screw-propulsion principle; and it further appeared, that although no less than 32 ships-of-war and 100 mercantile steam vessels had been constructed already upon this system, not more than two or three had paid for the patent licence. These evasions had been occasioned by the conflicting claims of five different patentees; but, as these have now united in one Association, it is expected that all who have adopted the use of the Screw-propeller will have to pay for their licences. As the admiralty are interested, either directly or collaterally, in this question to the amount of about 25,000l., Sir John Jervis, the Attorney-General, assisted by Mr. Crowder, Q.C., opposed the application for an extension of Mr. Frank Pettit Smith's Patent; but, after examining Captains Chappell and Crispin, R.N., and

Messrs. Brunel and Galloway, engineers, their lordships decided on granting an extension of five years to Mr. Smith's patent upon certain conditions. —*Times*.

Ohio.

Eaton and Hamilton Railroad.—The line of this road extends from Hamilton, on the Cincinnati, Hamilton and Dayton railroad, in a northwesterly direction to the Indiana State line where it will connect with the Richmond and Indianapolis railroad, now in project, to the latter place. The whole line of the Eaton and Hamilton railroad has been put under contract, and the work of grading is in vigorous progress. The length of the road is 36 miles, with a maximum grade of about twenty-five feet to the mile, occurring but seldom, and then but for short distances. The remainder is at an average grade of some sixteen feet to the mile. Practically, as to curvature, it may be put down as a straight line. The minimum curvature is about six thousand feet radius. Its estimated cost when fully finished and ready for business is, \$500,000. Of this sum the company last fall, by a vote of the people of Cincinnati, obtained a loan of credit of \$150,000 for twenty-seven years. Of this sum they have received \$25,000. The individual subscriptions, which are on the increase, amount to \$150,000, making the present resources \$300,000. The amount in the treasury is \$20,716 56. If the instalments coming due are promptly met, the directors expect that one division of the road can be put in operation in the latter part of next fall, or early in the winter.

This is the first road that branches from the Cincinnati, Hamilton and Dayton railroad in the west, and will become the trunk line for a large amount of business, not only of the country traversed, but of the roads in progress through Indiana with which it will connect. It will constitute a part of one of the routes between Cincinnati and Indianapolis, and will unite the former city with the great northwest. It traverses Preble county, one of the best in Ohio, centrally, and being removed from competition for its appropriate local business, it cannot fail to be a remunerating enterprise.

European and North American Railway.

The realisation of this grand project is not so distant as some may have imagined. It is rapidly making its way through Maine. The construction of the link from Waterville to Bangor may be regarded as secured by the action of the stockholders of the Atlantic and St. Lawrence railroad, authorising a lease of the former. Measures are also in progress to build a railroad from Bangor to Oldtown, on the route proposed for the European and North American railroad, a distance of 13 miles, and the most expensive part of the line from Bangor east. These two links will leave only some 80 or 90 miles in Maine to be secured; for which provision is very likely to be made in the shape of grants of proceeds of the public lands of Maine. The subject of aiding this road by similar grants, is now before the Massachusetts legislature, with some prospect of success.

In New Brunswick and Nova Scotia, we have the best reason to believe that the Provincial guarantees will supply any lack of individual subscription, even if the home government shall not render any aid. The people of the provinces are fully impressed with the importance of this work. They regard its success as the turning point with them, whether they shall continue to retrograde in all their material interests, or start on a new career of

progress. Through the Provinces the road must be built. Both there and in Maine the project is advanced with wonderful rapidity since its first announcement; vastly more so than the other great work of Maine, the Atlantic and St. Lawrence railroad, the completion of which a little more than a year will witness.

When the European and North American railroad shall be extended to the most eastern point of Nova Scotia or Cape Breton, we shall have then reached the *ultima thule* of railroad progress in the east. We must then turn our eyes in an opposite direction toward our western limit, the Pacific ocean. We shall then span the continent at its widest practicable points.

Canada.

Western Railroad.—A bill is now before the New York Legislature authorizing the railroad companies of the state to subscribe to the stock of the above company. The Canadian Government loans its credit to the company to an amount sufficient to build one half of the road, and about \$1,500,000 has been subscribed in addition, in the Provinces. One million more is necessary to complete the work, and this is sought to be raised in the States. Of this sum, the railroad companies between Albany and Buffalo propose to take an amount which will probably not exceed two and a-half per cent. of their capital.

Missouri.

This State has agreed to loan its credit to the Pacific railroad, extending from St. Louis to the Kansas river, to the amount of \$2,000,000; and to the Hannibal and St. Josephs railroad, to the amount of \$1,500,000. The loans are to be secured by mortgages of the roads as they progress. Whenever \$50,000 of private means shall be expended, the State is then to issue and deliver its bonds to the railroad companies to an equal amount. The aid extended by the State will, we presume, be increased so as to furnish one-half of the whole sum necessary to complete both lines.

The Pacific railroad will be about 300 miles long, and is estimated to cost \$6,000,000. The whole route has been surveyed the past season under the direction of J. P. Kirkwood, Esq., Chief Engineer of the company, and has been found to be very favorable. We learn that the southern route, following up the valley of the Maremac, and keeping the prairie lands at a distance of 40 or 50 miles from the Missouri, in some places, is likely to be adopted. The river route, as it is termed, would be somewhat shorter and cheaper; but the line here would come into direct competition with the river, which would draw off at some seasons a large portion of the heavy freight. The lands immediately bordering the river are all settled, and are under a high state of cultivation, while those more remote have, for the want of suitable means of transportation, been almost entirely neglected. The road would at once bring these into market and be the means for settling them, and would add largely to the productions of the State and the business of St. Louis. In addition to these considerations, the southern route would traverse one of the finest mineral districts of the United States, abounding in vast quantities of iron, lead, copper, and other less valuable minerals. These remain almost entirely unwrought, from the present difficulty of expense of transportation.

We learn that the construction of this line is to be commenced at once. With the means which

the company have at command, it should be completed in three or four years. The city of St. Louis can easily raise one-half of the cost of the work, and as the State will probably contribute the other half, there can be no lack of means.

The Hannibal and St. Josephs route is shorter and less expensive. The north side of the river is more favorable for a railroad than the south. The latter company have not the advantages of a large city to fall back upon for means, but the country traversed can furnish a much larger amount than the country south of the Missouri, and we see no reason why this road should not be completed as soon, to say the least, as its rival line. The Hannibal and St. Joseph railroad is to be commenced immediately. The last number of the Hannibal Courier states that Col. R. M. Stewart, the President of this road, will, upon the adjournment of the Legislature, enter at once upon his duties, with the intention of pushing forward with vigor the work of surveying and marking out the road.

Cumberland Valley Railroad.

Since the last annual report (15th) was made, the whole line of this road, 52 miles in extent, has been entirely relaid, at a cost of \$268,696 17. By the completion of the York and Cumberland road, the line is connected, through the Baltimore and Susquehanna road, with Baltimore city; and when the Dauphin and Susquehanna road forms a connection with the Pennsylvania railroad, a communication will be opened to the coal mines of Pennsylvania. The whole cost of the road, up to the first of the year, was \$1,187,749 98. The capital stock of the company is put down as follows, viz—6,900 preferred shares, = \$345,000; second do. do. 7050 = \$352,500; old shares, 7754 = \$387,700; held by company, 1700 = \$85,000; mortgage loan due 1st October, 1859, = \$13,000; or a total of \$1,183,200. The bonds created under this mortgage amount to \$31,800, of which sum there has been used but \$13,000. Of the balance, \$7,800 has been paid in liquidation of debts to the Carlisle Bank and others. The residue, \$11,000, will, perhaps, be applied to pay off a debt now due to the Chambersburg Bank. The assets of the company are stated at \$58,639 82, and its liabilities; including the \$11,000 due the Chambersburg Bank, at \$38,533 57. Its revenue is put down as follows:—Balance 1st Jan., 1850, \$23,392 33; receipts for 1850, \$92,755 78, making a sum total of \$116,148 11. From this is to be deducted \$47,377 53 for expenses, repairs, and interest, leaving \$68,770 58. From this amount is to be deducted the dividends of April, 1850, of \$19,990 60, and that of October of \$24,123 75, showing a balance of \$24,656 23.

The whole amount of receipts for the past year amount to the sum of \$363,771 28, and is made up of the following items:—Cash on hand 1st January, 1850, \$70,056 68; instalments of first preferred stock, \$183,168 51; earnings for last year, \$92,755 78; bills payable, \$6,500; old debts collected, \$58 87; interest received on deposits, \$1,598 61; tolls outstanding 1st Jan., 1850, \$9,632 83. The expenditures are for construction, \$261,128 32; expenses, ordinary and extraordinary, \$43,152 82; interest, \$2,348 01; debts due prior to 1850, \$3,340 23; dividends, (4 per cent semi-annually) \$44,114 35. Balances of interest due on funded bonds \$183 00; outstanding tolls, \$4,982 24; sundry items, \$1,569 56; cash on hand, \$2,952 75.—Of the total amount of tolls, \$92,755 78, \$35,838 94 were received from passengers, and \$41,298 10 for freight, including \$100 for express packages.

Georgia.

Muscogee Railroad.—This road commences at the town of Columbus, and is 50 miles in length. Of this distance, 25 miles was located in the latter part of the year 1848; and there had been finished, at the close of 1849, work to the value of \$36,843 33. The location of the remaining 25 miles was completed by about the 1st March, 1850. The maximum grade is 39.6 feet. The length of curve on the whole work is 8½ miles. Of straight line there are 41½ miles. The graduation and masonry of the last 25 miles has been let to contractors, under stipulation for its completion by the 1st of November next.

The superstructure for the road has been contracted for at \$1,500 per mile. The value of work done up to January 6, 1851, is \$66,474 59. The cost of the road, including equipment, is estimated at \$497,979 71, and is made up of the following items: graduation, masonry and bridging, \$161,979 71; 52 miles superstructure, including turn-outs, \$78,000; iron, (50 tons to the mile) plates and spikes, \$122,000; right of way, \$6,000; real estate, depots, shops and water stations, \$20,000; engineering, etc., \$25,000; and equipment, \$85,000.—The estimated receipts of the first year's business are \$116,000; estimated expenses of working the road, \$46,000—leaving a balance of \$70,000, or 14 per cent. on the capital stock (\$500,000). The operation of this road is expected to secure to Columbus all the benefits expected to be reaped from the trade of Upper Georgia and Tennessee, by her connection with the Macon and Western railroad at Barnesville, as also those arising from a reliable outlet, such as this line connected with Montgomery and the Alabama river presents.

Indiana.

Lawrenceburgh and Upper Mississippi Railroad.—This road extends from Lawrenceburgh, on the Ohio river, 20 miles below Cincinnati, to Indianapolis, a distance of 90½ miles; passing through Greensburg, in Decatur, and Shelbyville, in Shelby counties—of which these two towns are county seats. It intersects at the latter place, the Shelbyville, the Shelbyville and Knightstown, and the Shelbyville and Rushville railroads; for these it will open a direct outlet to Cincinnati. At Indianapolis it will form a junction with the principal roads now constructing in the State. The company have also the right to construct a road from Greensburg, by Evansburgh and Martinsville, to any point on the western boundary of the State they may choose. The whole cost of the road, including equipment, is estimated at \$1,050,210; at which rate, the average cost per mile would be \$11,573. About 63 miles of the work are under contract, and 20 miles will be ready for the iron by the time it can be delivered. The payments to be made for contracts already entered into for its construction, are \$151,941 in cash, and \$117,884 in stock and real estate. Some \$70,000 has been expended on the work; but this sum does not cover the expense of the real amount of work done, the contractors not having, in all instances, called for the stock and real estate portions of their work; as they intend to wait until the final estimate is made. The resources of the company are, in cash \$130,000; in real estate, \$125,000; in work and materials, \$37,000; in city of Lawrenceburgh 6 per cent bonds, \$40,000; and in county of Decatur 6 per cent bonds, \$100,000—making a total of \$432,000. Subscriptions are constantly being made, payable in cash, timber and real estate. The cash subscriptions are payable, generally, in one, two and

three years, commencing in 1849. The company have received the full amount—\$40,000—of the Lawrenceburgh city bonds, and \$30,000 of those of Decatur county. The residue of the latter will be delivered as the work further progresses. The only debts of the company are \$5,000 for loans—which are not yet due. For the purchase of iron for rails, etc., the city and county bonds are proposed to be set apart. The company propose to have, by the 1st of next December, 20 miles of road in operation, and 43 more ready for the superstructure. This company was chartered in 1848, and, at that time, bore the name of the Rushville and Lawrenceburgh company. The amount of capital stock authorised is \$100,000; although right is possessed to increase it to any amount desired.

This road will traverse a very fertile region, and it will connect the central part of Indiana with Cincinnati by the shortest practicable route. Its stock cannot fail to be a very profitable investment.

The distance from Cincinnati to Lawrenceburgh will be constructed by the Ohio and Mississippi railroad company.

Queenston Suspension Bridge.

This second structure which spans Niagara River has recently been open to the public. The towers are built on each side, and it is 1043 feet from tower to tower, and it seems quite fitting that this great work should tie together with iron cables the great dominions of the two greatest nations in the world. There are to be ten cables in all, each cable made of 250 wires, each wire warranted to bear 1500 lbs. The wires are not twisted but lie together straight, and are kept together by a strong wire that is wound around them, the same as you would wind a thread around a bonnet wire. The cables are firmly anchored in the rock, and pass over two massive stone towers, some 14 feet high. On the top of these towers are solid iron plates, and rollers on these, upon which are other plates with groovings for each of the cables, so that there is no horizontal strain upon the towers, but all the pressure is perpendicular on the same principle with the pressure on the bridge under the strings of a viol. The cables when extended have the shape of a rainbow turned upside down, and to the uninitiated it would seem that a bridge built on these cables would give a merry run down to the centre, and then be up hill to the opposite side. But instead of the planking and pathway being over the cables it is under them, and is to be perfectly level. The centre of the bridge will nearly touch the centre of the cables, while at either end it will be 60 or 70 feet below them, and the work to be sustained by iron rods suspended from the cables. A road has been cut along the side of the mountain to either terminus of the bridge, where solid walls of masonry have been built. The planking is to be twenty feet wide, intended at present for teams; but the towers and iron plates are constructed so that extra cables can be run over them. It is said to be the greatest suspension bridge in the world.

Bridge at Rouse's Point.

We are sorry to see the opposition in the Legislature of this state to the project for bridging Lake Champlain at Rouse's Point. We can see no good reason for it. The refusal of the charter would be a direct violation of the spirit of the present railroad law of this state, which allows every section to build such roads, and in such direction as shall best promote its interests—New York having thus set an example worthy of all imitation, by her sister states. Should not this practically repudiate the principle which lies at the foundation of this law. We hold that no one state has a right to interfere for its own benefit, with the trade between other states, neither has it the right to refuse to one portion of its citizens, privileges which are granted to another. Any assertion which is based

upon a wrong, cannot be sustained, and if a large number of the inhabitants of the northern part of this state would be benefited by this bridge, it must be built in spite of the present opposition—the right in the end is sure to prevail over all selfish considerations. But we think that the people of this state would generally be benefited by the bridge proposed, they could not be injured by it. Allowing that a large amount of produce would come over the Ogdensburgh railroad to Lake Champlain, all such produce would come to New-York instead of going to Boston, except what would be wanted there for domestic consumption, and this petty privilege we should grudge to any of our sister states. Rouse's Point is commercially much nearer to this city than Boston, and of course any avenues opened to that point should secure an encouragement, New York would retain her position as the great shipping port of the produce of the north and west, with as much certainty, if the Ogdensburgh railroad should become the sole route of this produce to a market, instead of the Erie Canal. A barrel of flour can be taken from Rouse's Point and delivered in New York, for one half of the cost of its transportation to Boston, with all the railroads that can ever be built to the latter city. Let us not in violation of our declared principles reject an application upon false grounds of expediency, when it can be conclusively shown that we should be benefited rather than injured by granting it.

British Navy.

The following is a return made up to July 30, 1849, of the number of Sailing and Steam Ships of her Majesty's Navy:—Of *Sailing Vessels*—19 first rates, mounting from 110 to 120 guns, and ranging from 2612 tons to 3,394; 52 second-rates, mounting from 78 to 104 guns, and ranging from 1,954 tons to 3,165; 20 third-rates, mounting from 70 to 72 guns, and averaging from 1,742 tons to 2,214; 40 fourth-rates, mounting from 50 to 60 guns, and ranging from 1,458 tons to 2,147; 42 fifth-rates, mounting from 36 to 44 guns, and ranging from 946 tons to 1,634; 31 sixth-rates, mounting from 10 to 28 guns, and ranging from 500 tons to 1,082; 65 sloops, corvettes, and brigs, mounting from 3 to 18 guns, and ranging from 227 tons to 363; 11 packets, mounting from 4 to 6 guns, and ranging from 182 tons to 362; 14 surveying vessels, mounting from 2 to 22 guns, and ranging from 73 tons to 516; 5 troop ships, mounting from 2 to 22 guns, and ranging from 501 tons to 1,709; 1 store ship with 2 guns, of 314 tons; and 29 cutters, schooners, and tenders, mounting from 2 to 6 guns, and ranging from 25 tons to 330. Total of sailing vessels, 339.

Of *Steam Vessels* there were—3 line of battle ships of 80 guns, ranging from 2,335 tons to 3,074; 4 guard-ships of 56 guns, ranging from 1,761 tons to 1,846; 4 frigate guard-ships of 24 guns, ranging from 1,060 tons to 1,228; 22 frigates mounting from 6 to 36 guns, and ranging from 1,190 tons to 1,980; 64 sloops mounting from 2 to 6 guns, and ranging from 649 tons to 1,278; 26 gun-vessels, mounting from 2 to 4 guns, and ranging from 284 tons to 557; 4 schooners, of 8 guns, ranging from 490 tons to 516; and 34 tenders, &c., mounting from 1 to 3 guns, and ranging from 42 tons to 1,034. Total of steam vessels, 161.

In addition there were 47 steam vessels, ranging from 225 tons to 1,800, employed as packets under contract, and capable of being made available for warlike purposes in case of emergency.

Railroads and Common Roads.

We happened, a few days since, to be upon one of our wharves, when we saw two loads of sugar box shoofs being landed on the wharf, one load by the cars from Waterville, and the other on a team from Buxton. On enquiry, we learned that the freight of the former—82 miles by railroad—was but five cents per box, and of the latter, only sixteen miles, nine cents. The iron road thus makes Waterville but five-ninths the distance to Buxton,

by the "county road," and the Kennebec river at Waterville, is now nearer to us than the Saco is at and above Buxton.—*Portland Advertiser.*

Georgia

Muscogee Railroad.—On the 6th of January last a committee was appointed by the stockholders of the Central Railroad and Banking Company of Georgia, to report the condition of the above company, and its ability to complete the route of 50 miles within a reasonable time; and also the cost of constructing 21 miles of line, and the best method for its expenditure, and whether it should be by subscription to the stock of the company, or by subscription to the stock of the Southwestern company, (its charter being amended for that purpose) or in some other and what way. The report states that the Muscogee company are steadily going on with the work, and that one-half will probably be put in business operation by the 1st of next October. The committee think that the whole line can be completed and ready for running by the same time in 1852. The cost of 21 miles of the road will be \$298,706.55, or \$14,224.12 per mile. The report recommends that this amount be raised by a subscription of \$100,000 respectively, from the Central railroad company, the corporation of Savannah, and from individuals—the money thus raised to be expended by subscription to the Southwestern company, of whose road the 21 miles are to be a part. That immediately upon the subscription of \$200,000 the Southwestern company proceed to call in instalments of 15 per cent. every 60 days, and commence the construction of the 21 miles as quickly as possible.

Memphis and Charleston Railroad.

We learn from Mr. R. C. Brinkley who has just returned from New Orleans, that the subscriptions to this great work in that city before he left had reached \$70,000 dollars, and no doubt was entertained that they would in a few days amount to \$200,000. One gentleman alone, Mr. James Robb, had subscribed \$30,000. Mr. R. is one of the most patriotic and public spirited sons of the south, and for this, and various other recent acts of munificence, deserves to be held in grateful remembrance by all the friends of progress and internal improvement in the land. His subscriptions to public works within the last three months, we are informed, amount to near \$150,000.

We also learn from Mr. Brinkley, that Gov. Jones intends to remain some time yet in New Orleans, continuing the prosecution of his labors in the great cause to which he has devoted all the powers of a brilliant mind, and the Herculean energies of a character that knows no such word as fail. Already in sight of the goal for which he has so long toiled, the day cannot be distant when he will reap the well-earned rewards of triumphant success.—*Memphis Eagle.*

Indiana.

Opening of the Indianapolis and Peru Railroad.—On yesterday, agreeably to notice, the opening of the Indianapolis and Peru railroad to Noblesville, 22 miles, was celebrated at the latter place. At 8 o'clock, A.M. a train of open cars, loaded to overflowing with ladies and gentlemen from our city, started amid the cheering strains of music from Downie's Brass Band. At every cross-road crowds of anxious and astonished native Hoosiers were waiting to get their first sight of the iron horse, and as he foamed and puffed along, we were greeted with cheering and waving of handkerchiefs. At half-past nine the train entered the streets of Noblesville, where hundreds of persons were already awaiting our arrival. A train containing a number of the citizens of Noblesville, and the Noblesville Band went down soon after our arrival.

At 11 o'clock most of the people met in the Court-house to hear an address from Governor Wallace, which was delivered in his usual able

style. During the day every one amused themselves as best suited their temperaments. Some promenaded the streets listening to the strains of sweet music from our band, whilst others visited their old friends and acquaintances.—We observed our friend Biddle astride of a horse which some one had brought to town to sell, and which he was crying off at "only forty dollars, going! going!" But the attraction of the place was the Ladies Fair for the benefit of the Presbyterian Church. It was numerous attended, and was gotten up in good taste, especially the dinner, which all seemed to relish with pleasure. At a little before four o'clock three trains left Noblesville for Indianapolis, where all arrived in time for tea, and well pleased with the trip. Long live Noblesville, and its hospitable citizens.

The opening of this railroad will bring to our city the trade of Hamilton and Tipton counties, which will aid in increasing the prosperity of the RAILROAD CITY.—*Indiana Statesman.*

Northern Indiana Railroad.—We see it stated that the stock of this road to the amount of about \$1,000,000 has been subscribed, a large portion of it by capitalists in this city. This secures the completion of the road to Chicago within the time estimated by the company. The *South Bend Register* states that the above road is progressing rapidly in Elkhart county, the superstructure is being laid down. The contract for bridges across the Big Elkhart the Little Elkhart and the Babago Rivers, have been let, and the contractors are now getting out the timber. Contracts have also been made for most of the grading, from the Little Elkhart (a mile east of Bristol) to the village of Elkhart, and hands are now at work along the line. The road will, in all probability, be completed to South Bend by the 1st of September next.

Coal Cleared at Akron.

The following statement, which has been collected from official documents and books, by Frederick Wadsworth, Esq., the late canal collector at this port, will afford some idea of the important mineral resources which lie embedded all around us, and the rapidity with which they are being developed. It will, at the same time, show the richness of one of the sources of revenue for railroads and plank roads, which await the movements of enterprise.—*Beacon.*

Years.	Tons.
1838.....	323
1839.....	723
1840.....	4,458
1841.....	15,459
1842.....	15,828
1843.....	12,663
1844.....	17,876
1845.....	30,576
1846.....	29,918
1847.....	42,250
1848.....	64,358
1849.....	60,885
1850.....	80,458

Virginia.

Seaboard and Roanoke Railroad.—We learn from the Norfolk papers, that the stockholders of this company have unanimously adopted resolutions for an early survey of the line from some point on their road between Meherrin river and Weldon, to some point on the Roanoke at or near Halifax, N. C. The board of directors were invested with full power to take such course in regard to the termination of the road in North Carolina as the best interests of the company may demand.

Ohio.

Railroad to Cleveland.—The completion of this great work will not only contribute to the social intercourse and good fellowship between the cities of the northern and southern termini, and between the cities and villages along the line, and it will augment largely the business transactions between the citizens respectively.

This road was opened on Friday last to invited guests, and on Monday the first passenger train for the public generally passed over the route from Cleveland to Columbus, and we noticed in our city on yesterday, several Cleveland merchants and traders, who had never before been here, and who came to purchase goods to replenish their stocks. The business intercourse has begun and will increase, and social intercourse and good fellowship will follow.—*Cin. Gaz.*

Illinois.

The corporators of the Illinois Central railroad met in this city to-day, at the office of Messrs. Robert & George Schuyler, and organized that company by voting to accept the charter granted by the State of Illinois, and by the election of Robert Schuyler as President. The directors are: Robert Schuyler, Robert Rantoul, Jr., Jonathan Sturgis, Gouverneur Morris, Franklin Haven, J. F. A. Sanford, Henry Grinnell, Wm. A. Aspinwall, George Griswold, Thos. W. Ludlow, David A. Neal, Leroy Wiley, Jos. W. Alsop. Gov. French is also a director *ex-officio*.

Georgia.

Atlanta and West Point Railroad.—We understand that the work upon the above road is progressing rapidly. On Saturday last, the cars commenced running regularly from Atlanta to Palmetto, a distance of twenty-five miles. Between Palmetto and Newnan the work is in such a state of forwardness, as to justify the belief that the cars will reach Newnan in the early part of the summer. The great mail has already been transferred to this route, over which it will probably be carried, at least until the completion of the Girard and Mobile road. By the way, it is but justice to Mr. Grant, the engineer, and to the stockholders of this road to say, that it is one of the best structures of the kind in the State. The embankment is ample, the superstructure substantial, and the iron very heavy and well laid. This is the judgment passed upon the road by an engineer of decided ability, who recently examined a large portion of the line.—*Macon Journal.*

New York.

New York and New Haven Railroad.—The receipts of the New York and New Haven road continue to show a very large increase over the same period of last year. The earnings for February were, after paying off all connecting roads:—

1851.....	\$50,726 48
1850.....	30,300 11

Excess 66½ per cent.....\$20,426 37

The aggregate traffic of January and February was:—

1851.....	\$106,723
1850.....	60,523

Increase in two months over 75 per cent.....\$46,199

Maryland.

Baltimore and Ohio Railroad.—The following are memoranda of the business upon the Baltimore and Ohio railroad, for the month of February, 1851:

Main stem.....	\$27,567 98	\$90,402 11
Washington branch....	22,048 59	4,236 80

\$49,616 57 \$94,638 91

Making an aggregate of \$117,970 09 on the main stem, and \$26,285 39 on the Washington branch—the total being \$144,255 48.

The above, compared with the corresponding

month of last year, shows an increase of \$16,086 16, being \$13,249 74 on the main stem, and \$2,836 42 on the Washington branch.

Atlantic and St. Lawrence Railroad.

Messrs. John McConnell, (member of Provincial Parliament,) and H. B. Tirrell, Esq., of Stanstead, Canada East, and N. Colby, Esq., of Derby, Vermont, are on a visit to our city, as a committee in reference to the location of the Atlantic and St. Lawrence railroad line in Vermont. They desire a detour to the westward some miles from the located line—a change, which in their opinion, fortified by statistics, will be of much advantage to the business of the road, over the present location. A majority of them went up to Bethel yesterday on the occasion of the opening to that town.—*Portland Advertiser*.

Vermont.

Rutland Railroad.—We learn that the Burlington Free Press, of the 8th inst., that Judge Bennett has granted the injunction prayed for by Mr. Byron Stevens against the Rutland and Burlington railroad company, to restrain them from proceeding to construct the extension of their road to Swanton.

South Carolina.

Kings Mountain Railroad.—We learn that the Kings Mountain railroad, (says the Yorkville Miscellany,) is progressing as rapidly as can reasonably be hoped for. The grading contracts are all let with the exception of about a mile and a third. Many of the timber contracts are also made, and persons are almost daily applying for these sections not under contract. The iron has been contracted for also, and is expected to arrive in all during the spring. These facts will explain the rapid calls, that have been made on the stockholders. It is certainly the interest of the stockholders when once the expenditure of their money is commenced, to have the whole road completed as early as possible. Interest will in this manner be saved, and they will enjoy the benefits of their undertaking.

Illinois.

Aurora Branch Railroad.—At a meeting of the stockholders of the Aurora branch railroad, on Friday, the 21st ult., the following gentlemen were elected directors for the ensuing year:

E. S. WADSWORTH, President.
S. F. Gale, John Frink,
George Steel, John Clifford,
J. Van Northick, Benj. Hackney,
L. D. Bradey, Allen Robbins.

It is the intention of the board to proceed at once to an extension of the road from Aurora to a point on the proposed Galena branch of the Central road, some fifteen or twenty miles northwest of Peru. A glance at the map will show that when this is done, it will be one of the most important roads in connection with our city. The well known character of the board is a sufficient guaranty that whatever they may undertake will be prosecuted with the utmost energy.—*Chicago Tribune*.

New York.

The Straight Road to Batavia.—The Batavia Spirit of the Times says the Buffalo and Rochester railroad company have accepted the proposals of H. U. Soper and S. C. Holden, for grading the whole line of the straight road from Batavia to where it strikes the present track eight miles from this city, a distance of 28 miles, building the bridges, doing the mason work, and preparing it for the timber and rails. The contract is not yet signed, as all the details are not yet perfected, but as that no doubt will soon be done, the work will

probably be at once commenced, and completed with all possible despatch, so that by next spring we shall be able to go through in about forty minutes. This track, as surveyed, is nearly on the air line, thereby shortening the distance from the present route about eight miles between Batavia and Buffalo, and when completed will be the longest line of perfectly straight road in the State. It is laid out six rods wide, and we are informed that it will be ultimately graded for four tracks.—*Buffalo Com. Adv.*

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ENGINEERS.

Atkinson, T. C.,
Alexandria and Orange Railroad, Alexandria, Va.

Clement, Wm. H.,
Little Miami Railroad, Cincinnati, Ohio.

Cozzens, W. H.,
Engineer and Surveyor, St. Louis, Mo.

Alfred W. Craven,
Chief Engineer Croton Aqueduct, New York.

Floyd-Jones, Charles,
Alton and Sangamon Railroad, Alton, Illinois.

Gay, Edward F.,
Columbia and Philadelphia Railroad, Philadelphia Pa.

Gzowski, Mr.,
St. Lawrence & Atlantic Railroad, Montreal, Canada.

Grant, James H.,
Nashville and Chattanooga R. R., Nashville, Tenn.

S. W. Hill,
Mining Engineer and Surveyor, Eagle River,
Lake Superior.

Holcomb, F. P.
Southwestern Railroad, Macon, Ga.

Latrobe, B. H.,
Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,
Buffalo and Conhocton Valley Railroad, Bath, N. Y.

Morris, Elwood,
Schuylkill Navigation, Schuylkill Haven, Pa.

Nott, Samuel,
Lawrence and Manchester Railroad, Boston,

Prichard, M. B.,
East Tennessee and Georgia R. R., Cleveland, Tenn.

W. Milnor Roberts,
Bellefontaine and Indiana Railroad, Marion, Ohio.

Roberts, Solomon W.,
Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Sanford, C. O.,
South Side Railroad, Virginia.

Steele, J. Dutton,
Pottstown, Pa.

Trautwine, John C.,
Civil Engineer and Architect, Philadelphia.

Tinkham, A. W.,
United States Fort, Bucksport, Me.

Troost, Lewis,
Alabama and Tennessee Railroad, Selma, Ala.

Whipple, S.,
Civil Engineer and Bridge Builder, Utica, N. Y.

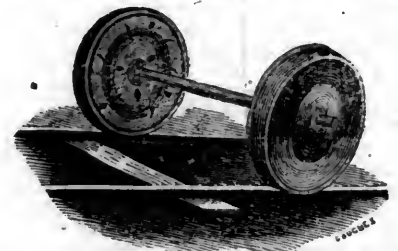
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218 PEARL ST., NEW YORK.

Charles T. Jackson, M. D.,
STATE ASSAYER, late Geologist to Maine, Rhode Island, New Hampshire, and the United States, offers his services to his friends and the public in making any Chemical, Mineralogical or Geological researches that may be required for the improvement of Agriculture and the Manufacturing Arts. Particular attention will be paid to the exploration of mines and to assaying of ores of the metals.
State Assayer's office, 31 Somerset st.
Boston Sept. 3, 1850.

STEEL AND FILES.

R. S. Stenton,
20 C LIFF STREET, NEW YORK,
AGENT FOR

J. & RILEY CARR,
BAILEY-LANE WORKS, SHEFFIELD,
Manufacturers of Cast, Shear, German, Blister, and
Spring Steel,
Of all descriptions, Warranted Good.
FILES.

Manufacturers of Machinists' Warranted Best Cast Steel Files, expressly for working upon Iron and Steel, made very heavy for recutting.
A full Stock of Steel and Files at all times on hand.
6m4

Cumberland Steam Coal,

FROM THE
FROSTBURG MINES, MD.
H. A. TUCKER,
Agent of Frostburg Coal Co.
No. 50 Wall Street, New York.

Dudley B. Fuller & Co.,
IRON COMMISSION MERCHANTS,
No. 139 GREENWICH STREET,
NEW YORK.

Manning & Lee,
GENERAL COMMISSION MERCHANTS,
NO. 51 EXCHANGE PLACE,
BALTIMORE.

Agents for Avalon Railroad Iron and Nail Works.
Maryland Mining Company's Cumberland Coal 'CED'
—'Potomac' and other good brands of Pig Iron.

Samuel Kimber & Co.,
COMMISSION MERCHANTS
WILLOW ST. WHARVES, PHILADELPHIA.
AGENTS for the sale of Charcoal and Anthracite
A Pig Iron, Hammered Railroad Car and Locomotive Axles, Force Pumps of the most approved construction for Railroad Water Stations and Hydraulic Rams, etc., etc.
July, 27, 1849.

James Herron, Civil Engineer,
OF THE UNITED STATES NAVY YARD,
PENSACOLA, FLORIDA.,
PATENTEE OF THE
HERRON RAILWAY TRACK.
Models of this Track, on the most improved plan, may be seen at the Engineer's office of the New York and Erie Railroad.

PLUSHES

FOR

Railway Cars & Omnibuses.

F. S. & S. A. MARTINE,
112 WILLIAM ST., NEAR JOHN.

ARE now receiving a large and complete assortment of Plain and Figured PLUSHES, of their own importation, which will be sold at the lowest market price, viz: Crimson, Maroon, Scarlet, Green, Blue, Purple, etc.

ALSO—CURLED HAIR, the best manufactured in market.

To Railroad Companies, Machinists, Car Manufacturers, etc., etc.

CHARLES T. GILBERT,
NO. 80 BROAD ST., NEW YORK,

IS prepared to contract for furnishing at manufacturer's prices—
Railroad iron,

Locomotive Engines,
Passenger and Freight Cars,
Car Wheels and Axles,
Chairs and Spikes.

Orders are invited; and all inquiries in relation to any of the above articles will receive immediate attention.

Manufacture of Patent Wire ROPE AND CABLES,

For Inclined Planes, Suspension Bridges, Standing Rigging, Mines, Cranes, Derrick, Tillers, &c., by
JOHN A. ROEBLING, Civil Engineer,
TRENTON, N. J.

FORGING.

Ranstead, Dearborn & Co.,

MANUFACTURERS OF
LOCOMOTIVE CRANKS AND CAR AXLES,
ALSO

WROUGHT IRON SHAFTING,
And All Kinds of Hammered Shapes.
Office 25 Foster's Wharf, Boston.

Samuel D. Willmott,
MERCHANT, AND MANUFACTURER OF
CAST STEEL WARRANTED SAWS,
—AND FILES—

IMPORTER OF THE
GENUINE WICKESLY GRINDSTONES
NO. 8 LIBERTY STREET,
NEW YORK.

Railroad Instruments.

THEODOLITES, TRANSIT COMPASSES,
and Levels, with Fraunhoffer's Munich Glasses, Surveyor's Compasses, Chains, Drawing Instruments, Barometers, etc., all of the best quality and workmanship, for sale at unusually low prices, by
E. & G. W. BLUNT,

No. 179 Water St., cor. Burling Slip.
New York, May 19, 1849.

IRON.**Iron.**

Pig Iron, Anthracite and Charcoal; Boiler and Flue Iron, Spring and Blistered Steel, Nail Rods, Best Refined Bar Iron, Railroad Iron, Car Axles, Nails, Stove Castings, Cast Iron Pipes of all sizes, Railway Chairs of approved patterns for sale by

COLEMAN, KELTON & CAMELL,
109 N. Water St., Philadelphia.

Stickney & Beatty, DEALERS IN IRON AND IRON MANUFACTURERS.

AGENTS for the Balt. City Rolling Mill, from which establishment they are prepared to furnish Ellicott's round, square, and flat bar iron, puddled and charcoal boiler plates and billet iron—also agents for the sale of the Laurel, Gunpowder and Locust Grove (Balt.) forge pig irons, Locust Grove and Laurel Irons for car wheels, Caledonian boiler blooms made from cold blast iron, Old Colony and anti-Eatam nails, Wm. Jessop & Son's steel, Coleman's blister steel and nail rods, sheet, hoop, band, oval and common English iron.

Nos. 13 and 20 South Charles st., Baltimore.

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. **J. F. WINSLOW, President**
Troy, N. Y.

ERASTUS CORNING, Albany
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md

November 6, 1848.

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phoenix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehanna river; which two establishments are now turning out upwards of 1800 tons of finished rails per month.

Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.

REEVES, BUCK & CO.
45 North Water St. Philadelphia.

March 15, 1849

LAP—WELDED WROUGHT IRON TUBES

FOR

TUBULAR BOILERS,

FROM ONE AND A QUARTER TO SEVEN INCHES IN DIAMETER.

THE ONLY Tubes of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER & SON, Patentees,
28 Platt street, New York.

Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron.

THOMAS B. SANDS & CO.,

73 New street,
New York.

February 3, 1849.

Iron Store.

THE Subscribers, having the selling agency of the following named Rolling Mills, viz: Norristown, Rough and Ready, Kensington, Triadelphia, Pottsgrove and Thorndale, can supply Railroad Companies, Merchants and others, at the wholesale mill prices for bars of all sizes, sheets cut to order as large as 58 in. diameter; Railroad Iron, domestic and foreign; Locomotive tire welded to given size; Chairs and Spikes, Iron for shafting, locomotive and general machinery purposes; Cast, Shear, Blister and Spring Steel; Boiler rivets; Copper; Pig iron, etc., etc.

MORRIS, JONES & CO.,

Iron Merchants,

Schuylkill 7th and Market Sts., Philadelphia.
August 16, 1849. 1y33

Glendon Refined Iron.

Round Iron,	Band Iron,	Hoop Iron,
Square "	Flat "	Scroll "

Axles, Locomotive Tyres,
Manufactured at the Glendon Mills, East Boston, for sale by
GEORGE GARDNER & CO.,

5 Liberty Square, Boston, Mass.
Sept. 15, 1849. 3m37

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for rail roads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.

JOHN F. WINSLOW, Agents.

Albany Iron and Nail Works, Troy, N. Y.
The above Spikes may be had at factory prices, of
Erastus Corning & Co Albany; Merritt & Co., New York; E. Pratt & Brother, Baltimore, Md.

Bowling Iron. Stamped B.O.

Railway Tire Bars
Locomotive and other Axles
Boiler Plates
Rivet Iron
Locomotive Frame do
Bars.

and every other description of this superior Iron.
The subscribers, agents for the sale of Bowling Iron, are prepared to execute orders for importation, especially for railway and machinery uses, with despatch from the manufacturers.

RAYMOND & FULLERTON, 45 Cliff st.

**Ibbotson, Brothers & Co's
CELEBRATED CAST STEEL**

AND

Best Cast Steel Royal Improved Files, well known as better adapted for Engineers' and Machinists' purposes than any now in use in the United States.

Every description of Square, Octagon, Flat and Round Cast Steel, Sheet, Shovel and Railway Spring Steel, etc., and Steel to order for any purposes—manufactured at their works in Sheffield—and universally known by the old stamp "Globe."

HENRY I. IBBOTSON, Agent,
218 Pearl st., New York.

**Railroad Iron.
SPIKES.**

Wrought Iron CHAIRS, New Pattern.

THE Undersigned continues to contract, as usual, for the above articles. The reputation already acquired for their excellent quality is a guarantee that strict attention shall continue to be paid to the wants and interests of purchasers.

CHARLES ILLIUS,
20 Beaver St., New York

**WILLIAM JESSOP & SONS'
CELEBRATED CAST-STEEL.**

The subscribers have on hand, and are constantly receiving from their manufactory,

PARK WORKS, SHEFFIELD,

Double Refined Cast Steel—square, flat and octagon. Best warranted Cast Steel—square, flat and octagon. Best double and single Shear Steel—warranted. Machinery Steel—round.

Best and 2d gy. Sheet Steel—for saws and other purposes.

German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.

Genuine "Sykes," L Blister Steel.

Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by

WM. JESSOP & SONS,
91 John street, New York.

Also by their Agents—

Curtis & Hand, 47 Commerce street, Philadelphia.
Alex'r Fullerton & Co., 119 Milk street, Boston.
Stickney & Beatty, South Charles street, Baltimore.
May 6, 1848.

Railroad Iron.

B. O. Railway Tires, Railway Wheels,
Scotch Pig Iron, Tin Plates and Banca Tin,
Muntz's Patent Metal Sheathing,
Baltimore Copper.

Contracts for Rails made on behalf of the manufacturers, for delivery at any ports in the United States, at fixed prices.

Bowling Tires and Tire Bars and Scotch Pigs imported to order.

Muntz's Ship-sheathing, and a general stock of Tin Plates and Banca Tin in store, and for sale by
RAYMOND & FULLERTON, 45 Cliff st.

IRONDALE PIG METAL, MANUFACTURED
and for sale by the Bloomsburg Railroad Iron Co.
LINDLEY FISHER, Treasurer.
75 N. Water St., Philadelphia.

**Faggotted Car and Engine
Axles**

FORGED by RANSTEAD, DEARBORN & Co.,
Boston, Mass.
These Axles enjoy the highest reputation for excellence, and are all warranted.

Railroad Iron.

3,000 TONS C. L. MAKE 63½ lbs. per yard,
now landing and to arrive.

Also contracts made for future delivery of above superior make English Iron

300 Tons Banks Best Iron, Round, Square and Flat.
200 " English Bar " " "
10 " 9-16 Square Iron for Railroad Spikes.

For sale in lots to suit purchasers by
DAVID W. WETMORE.
New York, March 26, 1860.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

**JOHNSON, CAMMELL & Co's
Celebrated Cast Steel,**

AND
ENGINEERING AND MACHINE FILES,
which for quality and adaptation to mechanical uses, have been proved superior to any in the United States. Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cyclops Steel Works Sheffield.

JOHNSON, CAMMELL & CO.,
100 William St., New York.

November 23 1849.

Bowling Tire Bars.

40 Best Flange Bars 5½x2 inches, 11 feet long.
40 " " 5½x2 " 7 feet 8 in. long.
40 " Flat " 6x2 " 11 feet long.
40 " " 6x2 " 7 feet 8 in. long.

Now in store and for sale by

RAYMOND & FULLERTON,
45 Cliff street.

**Wheel, Forge and Foundry
Iron.**

LOCUST GROVE Wheel Iron of great strength and superior chilling property.

Balt. Charcoal Forge Iron, from Patuxent, Curtis Creek and Gunpowder furnaces.

Elkridge Foundry Iron, of superior strength and softness. Anthracite and Charcoal Iron from Pennsylvania and Virginia. Gas and Water Pipes, Lamp Posts from Elkridge furnace.

LEMMON & GLENN,
\$m9 62 Buchanan's Wharf, Baltimore.

**S. S. Keyser & Co.,
IRON WAREHOUSE,**

Corner of South and Pratt Streets,
BALTIMORE, MD.

Selling Agents for the Rough and Ready Bar Iron and Elk Boiler and Flue Iron Rolling Mills, Sarah and Taylor Furnaces, and Wrightsville Hollow Ware Foundry, and Dealers in Bar and Sheet Iron, and Cast, Sheer, German, Blister, Spring and Electroplated Steel, etc., etc.

Smith & Tyson,

GENERAL COMMISSION MERCHANTS,
No. 25 South Charles St., Baltimore, Md.

AGENTS for the Celebrated Columbia Pig Iron, suitable for Car Wheels and Chilled Rolls.

Columbia refined Charcoal Blooms; Refined Charcoal Juniaetta Billet Iron for Wire; Refined Iron for Bridging, of great strength; Cut Nails, Spikes, and Brads; Railroad Spikes and Wrought Chairs. 22½

Tredegar Iron Works.

ROLLING MILL FOUNDRY AND MACHINE SHOPS. The undersigned continues to manufacture at his Works in this city (from best charcoal metal) Bar Iron of every description, embracing—

Rounds and Squares, from ½ to 5 inches diameter. Flats, from ½ to 7 inches, all thicknesses. Bands and Scrolls, all sizes. Boiler plate and Plough Iron. Railroad and Locomotive Axles and Tires. Locomotive Frames, Spikes and Plates. Hoops, Ovals, Half Ovals, Half Rounds, Angle, T, L, and indeed every description of Iron usually manufactured, all of which he warrants to be equal to any made in this country. He also manufactures at his Foundry and Machine Shops all descriptions of Railroad Work, say, Locomotives, Railroad Wheels and Axles complete and ready for the road, Railroad Chairs, etc. Also, Marine and Stationary Engines all sizes, Sugar mills and Engines, Horse mills, and every kind of Machinery usually required for the operations of the country. He has paid particular attention to getting up machinery, etc., for Gold Mine operations, and those in want of such work might find it to their advantage to give him a call.

J. R. ANDERSON.
Richmond, Va., Sept. 10, 1850.

CUT NAILS OF BEST QUALITY, BAR IRON (including Flat Rails) manufactured and for sale by

FISHER, MORGAN & CO.,
75 N. Water St., Philadelphia.

Car Wheel Iron.

100 Tons "Columbia" No. 2 Cold Blast Charcoal Iron.

300 Tons "Salsbury" No. 1. do. do.
For sale by CHARLES T. GILBERT,
No. 80 Broad st.

New York, Sept. 21, 1850.

Railroad Spikes.

THE subscribers are prepared to make and execute contracts for Railroad Spikes of a superior quality, manufactured by the New Jersey Iron Company, at Boonton.

DUDLEY B. FULLER & CO.
139 Greenwich st. corner of Cedar.

Railroad Iron.

1650 Tons, weighing about 61 lbs. per yard, 40 tons, weighing about 52 lbs. per yard, and 825 tons, weighing about 53½ lbs. per yard, of the latest and most approved patterns of T rail, for sale by
BOORMAN, JOHNSTON & CO.,
119 Greenwich street.

New York, Aug. 26, 1850.

N.B.—B. J. & Co are also prepared to take contracts for English rails, delivered in any of the Atlantic ports of the United States.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract to deliver Rails of superior quality, and of any size or pattern, to any ports of discharge in the United States.

COLLINS, VOSE & CO.,
74 South St.

New York, June 1, 1850.

Spikes, Spikes, Spikes.

ANY person wishing a simple and effective Spike Machine, or a number of them, may be supplied by addressing
J. W. FLACK,
March 6, 1850
Troy, N. Y.

Railroad Iron.

2000 Tons, weighing 58 pounds per lineal yard, of the most approved pattern of T rails, in store and to arrive, for sale by
COLLINS, VOSE & CO.,
74 South St.

New York, June 1, 1850.

Railroad Spikes, Boiler Rivets, etc.

THE Subscribers, Agents for the sale of James S. Spencer's, Jr., Railroad and Boat Spikes, Boiler Rivets, and Wrought Iron Chairs for Railroads, made at his Works near this city, will execute all orders with promptness, despatch, and of the best quality.

ALSO IMPORTERS of English refined and Merchant bar Iron; Extra refined Car and Locomotive Axles (from 3½ to 6½ inches in diameter); B. O. Locomotive Tire (welded by Baldwin). Also, supply Boiler and Flue Iron cut to pattern or otherwise.—Spring, Shear, and Cast Steel, etc., etc., etc.

T. & E. GEORGE.

Philad'phia, November 14, 1850.

Railroad Iron.

THE UNDERSIGNED, HAVING made arrangements abroad, are prepared to contract for the delivery of Foreign rails, of approved brands upon the most favorable terms.

They will also make contracts for American rails, made at their Trenton works, from Andover Iron, in whole or in part, as may be agreed upon.

They are prepared to furnish Telegraph, Spring and Market Wire; Braziers and Wire Rods; Rivets and Merchant Bars to order, all made exclusively from Andover Iron. The attention of parties who require iron of the very best quality for special purposes, is respectfully invited.

COOPER & HEWITT,
17 Burling Slip, New York.

February 15, 1850.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract for the delivery of English, Welsh and Scotch Rails, of any pattern and weight, also for every description of English, Welsh, Scotch, and Swedish Iron, Railway Chairs and Spikes, Rivets, Bolts, Nuts, Washers, Chain Cables, Anchors, Tin Plates, German Spelter, Iron Castings, and every description of Machinery.

WILLIAM BIRD & CO.,
Iron and Tin Plate Merchants,
44 Wall st., New York.

And at 5 Martin's Lane, City, London,
and 140 Buchanan st. Glasgow.

July 27th, 1850.

Railway Iron.

THE Subscribers will contract to deliver, in the course of the ensuing Spring and Summer, the best English Rails, made by a particular specification, and of any pattern required.

DAVIS, BROOKS & CO.,

On hand for sale, English rails of 58 lbs. to the yard, made by particular specifications.
January 10, 1851. 2m

To Iron Masters.

WANTED—A Person to take charge of a Blast Furnace for Smelting Iron, for further information apply to
COLLINS, VOSE & CO.,
74 South street.

Railroad Iron for Sale.

THE Mansfield and Sandusky City Railroad Co. have on hand from twelve to fifteen hundred tons of American Flat Bar Railroad Iron, weighing 38 lbs. to the lineal yard, which they offer for sale at reasonable rates.

The iron has been in use about four years, and is sound and in good condition. It is 24 by 1.

It will be ready for delivery at short intervals between the opening of navigation in the spring and the 1st September next.

For further particulars inquire at the office of the company at Sandusky City, Ohio.

C. G. FORBES, President.

December 24, 1850.

Railroad Iron.

THE "Montour Iron Company" is prepared to execute orders for Rails of the usual patterns and weights, and of any required length not exceeding 30 feet per rail. Apply at the office of the Company,
No. 73 South 4th st., Philadelphia,

Or to the Agents,

CHOUTEAU, MERLE & SANFORD,

NO. 51 New st., New York.

September, 1850.

American Railroad Iron.

1000 Tons, weighing 50 lbs. per yard, manufactured by Reeves, Abbott & Co., at the Safe Harbor Iron Works, and now lying in yard at Brooklyn, for sale by

CHOUTEAU, MERLE & SANFORD,

No. 51 New street.

Tubes.

The undersigned are in direct communication with the Birmingham Patent Lap Welded Iron Tube Company, for the sale of their very excellent and superior Boiler and Gas Tubes in large or small quantities. These Tubes are sold very extensively in England and on the continent of Europe are sold exclusively by

WM. BIRD & CO.,

Iron and Tinplate Merchants,

44 Wall st., New York

5 Martin's Lane, City, London,

and 140 Buchanan st., Glasgow.

Wanted.

WANTED—A Situation in a Civil Engineer's office, by a Young Gentleman from Scotland—has had six years' experience as a practical Draughtsman, Architect, Surveyor, and Leveller in one of the principal civil engineering establishments in Scotland. First rate reference given. Apply to Messrs. Cooper & Hewitt, 17 Burling Slip, or to

JAS. SNEDDON,
23 Harrison st.

Wanted.

A Second-hand Locomotive of 10 to 15 tons weight. A note, giving lowest terms, addressed to A. B., Railroad Journal Office, will receive attention.
January 9, 1850.

India-rubber for Railroad Cos.

RUBBER SPRINGS—Bearing and Puller—Fuller's Patent—Hose from 1 to 2 inches diameter Suction Hose. Steam Packing from 1-16 to 2 in thick. Rubber and Gutta Percha Bands. These articles are all warranted to give satisfaction, made under Tyer & Helm's patent, issued January, 1849. No lead used in the composition. Will stand much higher heat than that called "Goodyear's," and is in all respects better than any in use. Proprietors of rail roads do not be overcharged by pretenders.

HORACE H. DAY,

Warehouse 23 Courtlandt street

New York, May 21, 1849.

Great Work on Bridge Building, etc., etc.

JUST published in medium folio, One Dollar, 75 cts. to subscribers.

PART IV of a "THEORETICAL AND PRACTICAL TREATISE ON THE CONSTRUCTION OF BRIDGES IN STONE, IRON AND WOOD," including the Equilibrium of Arches, the mathematical principles of the Oblique Arch, Suspension Arch, etc., Construction of Foundations in Water, Centering, Oblique Arches, etc., the application of Iron to Railroad Structures, Practical Tunnelling, Suspension Bridges, etc.: illustrated by numerous accurately executed Plans, Elevations, Sections and Details of Stone, Iron and Wood Bridges, Viaducts, Tunnels, Culverts, Machines, etc., constructed by the most eminent Architects and Engineers in Europe and the United States, and numerous Original Designs for Bridges, Viaducts, Culverts, etc. The whole calculated to meet the exigencies of Engineers, and assist Draughtsmen, Bridge Builders, Mechanics and Students. By George Duggan, Architect and Civil Engineer.

The present part contains beautifully executed plans, elevations, sections, and details of the Iron Lattice Bridge 140 feet span over the canal in the suburbs of Dublin on the line of the Dublin and Drogheda R.R., Plans, elevations and sections of the Timber Bridge over the Schuylkill, at Market st., Philadelphia, with Arches 160 and 190 feet span. Plans, elevations and sections of a Timber Bridge with Arches 155 and 200 feet span over the Delaware. Also, plans, elevations, sections and details of Lattice and Frame Wood Bridges, explanatory of Nathaniel Towns and Colonel S. H. Long's methods of constructing Bridges of Wood, with the continuation of the Articles on Coffer dams, Concrete, Limes, Mortars, Cements, etc.

Published by George Duggan, 300 Broadway, New York, to whom all communications should be addressed and subscriptions forwarded.

Parties remitting Mr. Duggan \$5. and the remainder \$4 when they have been supplied with the first six parts of the "Theoretical and Practical Treatise on Bridge Building, etc." shall receive it monthly as published. To those making Mr. Duggan a present remittance of \$9, the work will be forwarded post free to any part of the United States.

Great American Engineering

AND MECHANICAL WORK, just published in medium folio One Dollar, 75 cts. to Subscribers.

PART X. of "Specimens of the Stone, Iron & Wood Bridges, Viaducts, Tunnels, Culverts, &c., &c., of the United States Railroads." By George Duggan, Architect and Civil Engineer.

The present part contains beautifully executed plans, elevations, and sections of the Timber Bridge with Arches 136 feet span, over the Mohawk river, on the line of the Utica and Schenectady R.R. Plans elevations, sections and isometrical views of Timber Piers 100 feet high, a Timber Bridge of 55 feet span, and Ice Breakers, on the line of the Little Schuylkill and Susquehanna R.R.

Also plans, elevations, sections, isometrical views and details of an Iron Bridge 356 feet long, with Arches 81 feet span, erected by the N. York Iron Bridge Co. over Moors creek, on the line of the Virginia Central R.R., and plans, elevations and sections of an Iron Plank Road Bridge 160 feet span, erected over Buffalo creek by the same company, with a description of Col. Long's method of constructing Bridges in Iron, and an explanation of the causes that led to the failure of the Iron Bridge 60 feet span, near Lackawaxen, on the line of the New York and Erie R. R., at midday, on the 31st July last, by which several lives were lost, and a great amount of property destroyed.

Published by

GEORGE DUGGAN,
300 Broadway, New York.

To whom all communications should be addressed and subscriptions forwarded.

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,

No. 24 Commercial St. Boston.

August, 16, 1849.

6m33

For Sale.

TWO Locomotive Engines—104 tons weight, built by Baldwin. Also Four Eight-wheeled Passenger Cars, with side seats, all in good running order. Apply to
WM. E. MORRIS,
Office of Philad., Germantown & Norristown Railroad Co., 9th and Green sts., Philadelphia. 3m5

TO RAILROAD COMPANIES, CAR MANUFACTURERS, etc.

THE Undersigned hereby gives public notice, that the Commissioner of Patents, pursuant to his decision in relation thereto, on the 8th day of October, 1850, issued to him a Patent for the sole right to manufacture, and exclusive use of the INDIA RUBBER CAR SPRING, on account of priority of invention of said Spring.

F. M. RAY

New York, Oct. 23, 1850.

Iron Trade of Pennsylvania.

DOCUMENTS and Statistics relating to the Manufacture of Iron in the State of Pennsylvania—giving a history of the manufacture from its commencement to this date, illustrated by diagrams. Also tables giving the address and capacity of every establishment in the State. Prepared by direction of the late convention of the trade held in Philadelphia.

For sale by

LINDSAY & BLACKISTON, Philadelphia.

FELDING LUCUS, Jr., Baltimore.

HENRY G. NICHOLS, 79 Water st., N. Y.

or at this office—price \$1 00.

It will be sent by mail to any order enclosing the money, and post paid.

Ulster Iron.

THE ULSTER IRON WORKS, Saugerties, N. Y., continue in full operation. Orders for round, square, flat, band, hoop and scroll iron, will be received and promptly executed by

J. & L. TUCKERMAN,

69 West St., New York.

Patent Machine Picket Fence

SIX DIFFERENT STYLES of this fence are now made by patent machinery; and is by far the most economical fence for Railroads, Farms, Yards, etc., ever yet offered to the public, costing only from 4 to 30 cents per foot, according to pattern; and is so put up as to be shipped at a trifling expense. Full particulars will be furnished, by addressing the subscriber, to whom all orders should be sent.

N. STRATTON, Troy, N. Y.

Providence Tool Co.,

MANUFACTURERS OF

Plane Irons, Tooth Irons, Soft Moulding and Rabbet Irons, Cornice Irons, Plow Bits, and Planing Machine Knives:

NUTS, WASHERS AND BOLTS.

—ALSO—

PLATE HINGES AND PICK AXES.

They are prepared to execute orders for all descriptions of Cold Punching and Job Work.

WM. FIELD, Agent. REFUS WATERMAN, Treas.
PROVIDENCE, R. I.

Lovegrove's Patent Cast Iron Water and Gas Pipes.

THE Subscriber, the Inventor and Patentee of the Centrifugal mode of giving form to metallic substances while in a molten state, is preparing to make Cast Iron Water and Gas Pipes, of any dimensions, at prices much lower than they can be made in the old manner, and the pipes warranted to stand a pressure of three hundred pounds to the square inch, and to be soft enough to drill. Steam Engines and all kinds of machinery. Cast Iron Doors and Frames, and Mill Castings of every description, made to order.

THOMAS J. LOVEGROVE,

Machinist and Founder,

West Falls Avenue, below Pratt st., Baltimore.

Railroad Letting, in Virginia.

PROPOSALS will be received at the office of the chief engineer of the Richmond and Danville railroad, until 9 o'clock A. M. Monday, the 10th of March, to be decided the 13th of the same month, for doing all the grubbing, clearing, grading, ditching and masonry, on the Richmond and Danville railroad, in the counties of Amelia, Nottingham, Prince Edward, Lunenburg and Charlotte, comprehending about 45 miles of road.

Profiles and specifications can now be seen at the office of the company in Richmond; and after the 10th of February, at the offices of the resident engineers, on the line, at Burkeville and Keysville.

By order of the board of directors,

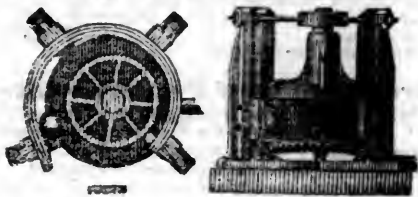
ANDREW TALCOTT,

Chief Engineer R. & D. railroad.

Engineering department R. & D. }
R. R. Co., Richmond, Jan. 22, 1851. }

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phoenixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll sounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y.

P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery for making Spikes, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

CHILLED RAILROAD WHEELS.—THE UNDERSIGNED are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

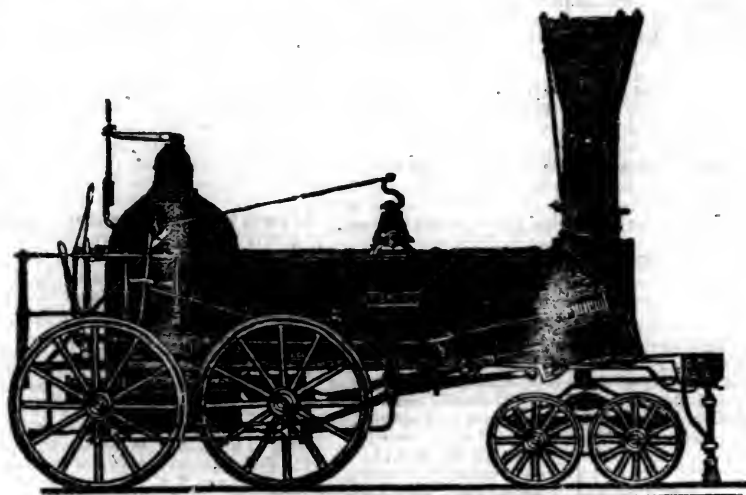
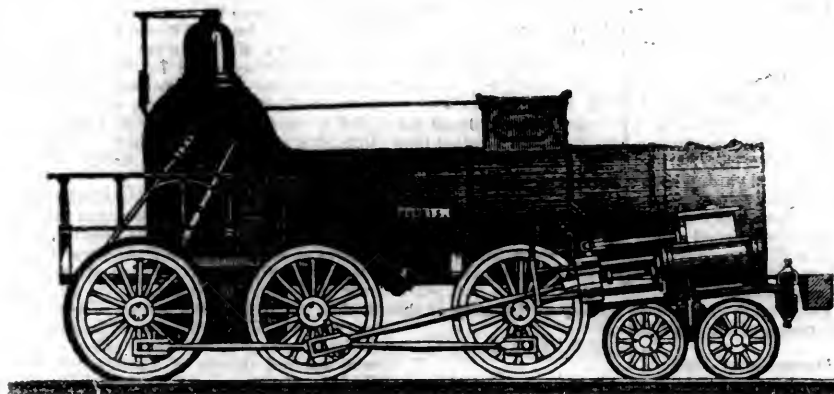
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NO. 234 WATER ST., NEW YORK.

THE Subscriber, Practical Manufacturer of Scales of every description, respectfully asks the attention of Railroad Companies to his Improved Wrought Iron Railroad Track and Depot Scales which for strength, durability, accuracy, convenience in weighing, and beauty of workmanship, are not surpassed by any others in this country.

He is aware that this is rather a bold assertion for him to make, yet he can say with confidence that they have but to be tried to give them precedence over all others.

J. L. BROWN.
Bank Scales made to order, and all Scales of his make Warranted in every particular.

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NORRIS' LOCOMOTIVE WORKS.
BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,

THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size. Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

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Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS

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Troy Iron and Nail Factory, Troy, N. Y.

Etna Safety Fuse.

THIS superior article for igniting the charge in wet or dry blasting, made with DUPONT'S best powder, is kept for sale at the office and depot of

REYNOLDS & BROTHER,

37 So. Manufacturers, No. 85 Liberty St.

NEW YORK.

And in the principal cities and towns in the U. States.

The Premium of the AMERICAN INSTITUTE was awarded to the Etna Safety Fuse at the late Fair held in this city.

November 3, 1849.

17

COLUMBUS, OHIO,
Railroad Car Manufactory.
RIDGWAYS & KIMBALL,

HAVE established at this central point, the manufacture of Passenger, Freight, Gravel and Hand Cars for Railroads, and assure all Western Railroad Companies that it will be their constant aim to procure the best materials and workmen, and to turn out the best kind of work at fair prices. Specimens may be seen on the Columbus and Xenia Railroad. The patronage of Railroad Companies is respectfully solicited.

1y8

FOR SALE.

THREE LOCOMOTIVES, Manufactured by M. W. Baldwin, of 10 tons weight, all in complete repair, and now running on the Columbia and Philadelphia Railroad.

For particulars apply to A. L. Roumfort, Supt. of said road, either at Philadelphia, or Parkersburg, Chester county.

A. L. ROUMFORT,
Supt. Motive Power Col. & Philad. R.R.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 136 NASSAU ST., NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.

SECOND QUARTO SERIES, VOL. VII., No. 13!

SATURDAY, MARCH 29, 1851.

[WHOLE No. 780, VOL. XXIV.]

ASSISTANT EDITORS,

J. T. HODGE, *For Mining and Metallurgy.*
GEN. CHAS. T. JAMES, *For Manufactures and the
Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & CO., 136 NASSAU ST.

Saturday, March 29, 1851.

Foreign Correspondence of the Journal.

On Sunday evening, the 23rd of February last, we first set foot in England, after a most agreeable passage from Boston of eleven days solar time, or ten days twenty hours mean time, in the Royal Mail Steam-ship *Canada*. It was a remarkable passage, as well for the smoothness of the sea, as for the favorable winds that prevailed until our arrival off the south coast of Ireland. For days together the studding-sails stood to catch every breath of the westerly breezes, too gentle, even in this usually boisterous season, to raise the mighty billows, which are the dread of all but experienced seamen. But for the occasional fields of ice floating in small oval and rounded shapes, as the fragments were rubbed by the waves against each other, and two icebergs, which at this uncommonly early season had broken from their fastnesses on the northern coasts, and were drifting down the polar current

with what earthy materials they might have taken up, to scatter as drift and boulders on their path, there was nothing on the passage to afford reasonable matter for hanging a fear upon. But the sight of these icebergs could not fail to suggest the possibility of an unpleasant rencounter in a dark night, which to a hollow wooden structure, even as strongly put together as the *Canada*, might result in not the most desirable illustration of the superior strength of the works of nature to those of art. The still uncertain fate of the *Atlantic*, no doubt, added to the feeling of insecurity these icebergs might awaken in the minds of these unaccustomed to them; and it was certainly not with feelings altogether unselfish, that when off the mouth of the Mersey, the pilot, before he fairly was within the gangway, answered the first question asked him, that a hearty shout was repeated from the decks by all the passengers gathered to hear the news.

The average rate of sailing of the *Canada*, with a moderately fair breeze and a smooth sea, was from eleven to twelve knots, the greatest distance run in twenty-four hours was 387 miles. As her freight of coal diminished every day at the rate of about 60 tons, and the ship became lighter, it is probable that in the latter part of the passage her speed was considerably lessened by the ease with which she rolled, as she run before the sea—one or the other wheel became alternately out of the water and merged deep into it. During the whole passage the two great engines worked with perfect regularity, and were only stopped when it was desirable to lessen the speed of the vessel in passing through the fields of ice. These engines are rated together at 750 horse power, but as we estimate the horse power, they would probably be rated considerably higher in the United States. The consumption of coal varies from 50 to 60 tons every 24 hours. It may be much increased by the carelessness of the engineers, and it is probable that to this cause is to be attributed the extraordinary consumption of more than one hundred tons per day, which we are informed has been required in some of the American steam-ships. We cannot learn that there is any essential difference in the machinery; and the breaking of the shaft of the *Atlantic* is an accident that may happen to any of the boats—indeed the same occurred to the *Columbia* a few years since. Were the iron from our own mines, alone, employed for the manufacture of this heavy machinery, it is probable such

breakages would more rarely occur, than when, under the present policy of our government, the temptation is made so strong to introduce the cheap foreign irons made with *mineral coal* from the inferior ores of the coal formation. This evil must now we fear, be more and more felt every year, our own best irons being, to great extent, driven out of our markets, and the skill that was employed to manufacture them being diverted to other pursuits. To every one interested in the prosperity of his country, and knowing its resources, this cannot but be felt with regret, especially when he is fully persuaded that through our own enterprise, ingenuity, and by home competition, we were rapidly diminishing the cost of this important commodity, and at the same time bringing it to a degree of excellence, which we in vain look for in the cheap articles now taking its place. In this connexion, after a partial examination of some of the great iron works of this country, we cannot but express the better opinion we have of our own mines of iron ores, and of the operations of many of our own blast furnaces; so that even allowing the difference in the cost of labor, which is the great item in the manufacture of iron, to be as three and a quarter to one against us, yet could we secure to the same amount of capital employed in the great works here, only the protection which was contemplated by our present tariff, and which it gave at the time it was established, we might not only supply ourselves with better qualities of iron, than are now easily found in our markets, and at present prices of inferior brands; but give prosperity to a large agricultural interest now suffering from the loss of its home markets, and eventually make our good irons what nature intended, by the enormous supplies of the ores, they should be, articles of exports to foreign countries, which are not so liberally provided with them.

In the railways of Great Britain, so far as our limited experience yet goes, we must confess we have been disappointed, though we doubt not our impression will be considerably modified when we come to travel upon other lines than that extending from Liverpool to London. The track of this much resembles our own, the iron rail laid upon cross-ties buried in the earth, and the two rails only four feet six inches apart. The carriages are like our old stage coach bodied-cars, each divided into three compartments, the seats fronting each other, so

that when full, half the passengers ride backwards. Those on this road of the first class only are cushioned. The second class carriages, in which men of business mostly ride, are very ordinary, the seats and sides plain boards, the latter frequently pasted over with advertisements. The third class, of course, are inferior to these. The express trains on this route are only first class cars, they run through from Liverpool to London about 210 miles in six hours, and the fare is £2 5s., about \$10.88—the other passenger trains are about nine hours on the road. Neither in accommodation, speed, nor expense, is this road superior to many in New York and New England. The cars are set upon steel elliptical springs, and the motion is no smoother, nor accompanied with less noise, than with the best of those upon our own roads. But in other respects we noticed a striking superiority of arrangement, we refer first to the particular care adopted to prevent accidents by the employment of a large force of men scattered along the road, one at least at every turn out, whose duty it is always to be on the spot to give notice on the approach of a train, that everything is in order for its safe running; and secondly, to the close examination, at every principal stopping place, of the wheels and axles, to see that all is right, and to tighten the screws, which may have worked loose; and thirdly, to the plan of securing the carriages to each other to prevent their bumping and jerking when starting. Each carriage is provided with a buffer or bumper at each corner, fixed to the end of a stout iron rod which enters in a long box at the extremity, within which is placed a spring, no doubt spiral, which while it is very stiff admits also from one to two feet play. The carriages are brought up to each other till their buffers meet, and then by a coupling of an iron rod, working with a screw in a swivel, which rod is rapidly twisted round by means of a lever with an iron ball at the end, the cars are brought close together so as to produce considerable pressure upon the springs. By this arrangement, between each carriage a perfect horizontal elasticity is secured through the whole train, an arrangement so agreeable to the passengers that we cannot understand why it has not been introduced on our own railways; unless it may be that the sharper curves may present some obstacle to its use. In case of any accident happening to the coupling, two very heavy chains are provided, one on each side of it, which are also attached to corresponding chains on the other car, and they hang loosely down ready for action if required.

By the extraordinary care the English have taken to guard against accidents in travelling, the number of these per annum is wonderfully small. It appears from returns lately presented to Parliament, that during the half year ending June 30th, 1850, there were 31,766,503 journeys made by rail; that in this time only 10 passengers were killed, and only 36 more injured; of those employed by the company and of trespassers upon the roads, 80 were killed and 32 injured. The *Times* commenting upon this, says,—"So far as we may take a single half year as our guide, it would appear that the chances of any individual passenger arriving safely at his destination are as 690,554 to 1, and that the chances are more than three millions to one against his being killed outright."

Basing their operations on such data as these, the Assurance Company against accidents upon railways, issues tickets, which may be bought with the passage tickets at the railway stations, for three pence (six cents) additional price, guaranteeing

£1000 in event of loss of life, and a fair proportional rate for accidents of less serious nature. And in the payments that they have been called upon to make, we are informed they have shown a commendable liberality. Though we secured one of their tickets we were spared the occasion of putting this to the test.

American and Foreign Building Stones.

Comparison of Experiments on American and Foreign Building Stones, to determine their relative Strength and Durability, by Professor Walter R. Johnston, of Washington, D. C.

As we have in the United States but few ancient buildings, the age of which can furnish conclusive proofs of the durability of their materials, and as but few of the materials which are found in such abundance and variety in this country, have been subjected to any satisfactory experimental tests to prove either their strength or durability, it is desirable that a rigorous comparison should be made, not only between the results of such trials on American rocks as have been made, but also between them and such foreign materials as have been tested by the most careful experimenters, and have besides undergone the more decisive proofs of many centuries of use in public edifices and monuments. As nature has in many situations exposed these various materials to the direct action of all the causes which can work their gradual destruction, and as these destructive causes have evidently wrought with an efficacy on some rocks vastly greater than on others, it is clear that if we would ascend to the highest and most reliable proofs of durability, we must seek for them in the condition which the rocks themselves have been able to maintain, not for the few brief centuries to which the memory of man extends, but during the geological ages which run back immeasurably beyond all human history. Those rocks which amidst the denuding, disintegrating and decomposing influences, whether derived from sweeping currents of water, from meteoric action and changes of temperature, or from vegetable growth and decay, have been able to sustain themselves in high, bold, naked, angular cliffs, unprotected by soil, and yet unimpaired by irregular disintegration, are manifestly those to which the engineer and architect are to direct their attention, when they seek materials for durable works of art. On the other hand, they will shun those rocks which the causes above enumerated have kept constantly down to a level with the ground, or which barely rise in some few patches to the surface, and are there seen disintegrating, scaling away, and covering themselves with a soil derived from their own debris.

The chemistry of geology furnishes to the architect and engineer most important hints for guiding their selection of materials; hints which when taken with other tests and proofs, leave them without excuse for choosing those of an inferior character. The influence of such a substance as iron pyrites on the durability of rocks in which it occurs, is so well known to every one acquainted with only the rudiments of geology and mineralogical chemistry, as scarcely to need a formal statement.* The effect of carbonic acid with water in dissolving carbonate of lime, and the readiness with which it acts on loosely aggregated crystalline masses of that carbonate, to effect their disintegration, may be understood from any elementary work on chemistry. The greater solubility of sulphate than of carbonate of lime may be ascertained from the same source. The weakness of coarsely crystallized stones as compared with those of finer texture, is so well known as to be properly classed among the canons of architecture†.

Of all the purposes for which building materials are employed, that which requires the utmost attention to durability is the erection of national monuments. It is a mockery to the dead, and an oppro-

brium to the living, to put perishable materials into structures professing to perpetuate the virtues of great and good men. The Spanish nation is represented to have recently determined on the erection of a magnificent statue of bronze to rest on a base of rose granite, the most enduring of that species of rock, to commemorate the glory of Columbus.

The question of the strength of a material to resist a crushing force is sometimes a vital one, as has been painfully proved within a year or two past in some of our large cities, where extensive warehouses have been crushed beneath their own weight and that of the goods which they contained, occasioning fearful losses of life. But the crushing test has by no means a single aim. It looks to the relation between the cohesion of a material and its capacity to resist the action of other than mechanical causes of disintegration. It is certainly a most egregious mistake to construct any tall public edifice in such a manner as not to sustain its own dead weight, but there are operations scarcely less discreditable, and which apply with equal force to structures professing to be enduring whatever be their height, their form, proportions or weight.

The usual trial of materials in small cubes is extended to furnish the relative strength or durability of the several species of materials to which it is applied.

The stone used in the Washington National Monument, and referred to in the following comparisons of experiments, is the same as that mentioned under the name of "alum limestone," in the report of the building committee to the Regents of the Smithsonian Institution, Dec. 7, 1847.

"The marble quarries of Maryland, chiefly in the vicinity of the village of Clarksville, about thirteen miles from Baltimore, on the line of the Susquehanna railroad, contain two qualities of marble; one fine grained and of beautiful uniform color, approaching the character of statuary marble; the other of inferior quality, similar to the Sing Sing marble employed in New York in Grace Church and other public structures, of a somewhat coarse and highly crystalline structure, and known to the quarrymen here under the name of 'alum limestone.'"

Trials of these two kinds of stone by the process of Brant were made by Dr. Page in 1847, and showed that "an inch cube of the fine-grained marble lost in four weeks about one-fifth of a grain; and a cube of the best quality of the 'alum stone,' or coarse-grained marble from half a grain to a grain and a half."

This indicated with sufficient clearness the inferior durability of the coarse-grained stone; since it underwent from two and a half to seven and a half times as much disintegration as the fine-grained variety. The fine-grained stone is understood to be derived from the Taylor quarries, half a mile westward of Cockeysville, and about a mile distant from the Grisco lime quarries which are at a place called Texas, where the "alum limestone" used at the National Monument is procured. At the latter quarries the stone is worked wholly below the original surface of the ground. At a few points along the outcropping edge of the bed, the harder parts of the rock come to the surface of the ground or rise occasionally one or two feet above it, covered in places with loose granules of the same rock. In some parts it is eroded into sloping channels, lined with skeletons of crystals and their slightly cohering nuclei.

On removing the soil, the rock is found with alternating peaks and cavities; its surfaces are more or less deeply tinged with the oxyd of iron derived from decomposed iron pyrites, many veins of which traverse it in various directions, and the skeleton crystals with loosely cohering nuclei are even more conspicuous than at the points where the rock crops out as above described.

That even the fine-grained stone above mentioned is not in all respects suitable to be employed as the casing stone of large shafts, is proved by the present condition of the shaft of the Washington Monument in Baltimore, where a similar stone

* "Pyrites when present, (in granite) renders the rock unfit for use, as it decomposes and stains or rusts the surface, besides loosening the grains and causing the rocks to fall to pieces."—*Dana's Mineralogy*, p. 579.

† Borgni's "Constructions Diverses," p. 23, and Rondelet's "Art de Batir."

* Hints on Public Architecture, by R. D. Owen p. 114.

† Ann. de Chim. et de Phys., tom. 38.

‡ Owen, p. 116.

from the same neighbourhood was used. This monument was commenced on the 4th of July, 1815, and the statue was elevated on the 19th of October, 1829. On the 23d of October, 1850, or twenty-one years from the date of its completion, I examined from the platform at the base of the shaft, the condition of its lower part.

There was seen on the side of the shaft opposite to the north-east corner of the base, a crack commencing near the bottom and following partly the joints of the masonry, and partly certain transverse or vertical cracks crossing the blocks of marble. The 3d, 5th, 8th, 10th, 11th, 13th, 14th and 15th courses of stone, counting from the bottom, were seen to be broken either partly or wholly across, and in one instance a block is broken into three pieces. On the south-easterly side of the shaft is a second line of fracture crossing ten or twelve blocks, mostly alternating with the courses of masonry which have joints corresponding with the general course of the fissure. At the south-westerly side are fifteen blocks cracked either partly or wholly across, and forming a third fissure more or less in a zig-zag direction, controlled apparently in some degree by the joints of the masonry. On the west side a fourth line of fracture appears to ascend some forty or fifty feet, and on the north-west side still a fifth line perhaps somewhat more irregular in direction than the preceding, but still easily traceable by the eye. In some cases where the cracks on two alternate blocks meet the joint of masonry in the course between them, the opening of that joint is apparent; in other words the crack is here in the cement, as might reasonably be expected. How long these cracks have existed I have no means of ascertaining. But one thing seems certain, that alternate cold and heat, rain and frost, will, along these lines of fissure, produce their usual effects of thrusting farther and farther apart the masses, which bound them. Time will reveal the effects, and perhaps expose the causes of these incipient delapidations.

A chemical analysis of the "alum limestone" has been published by Dr. L. D. Gale, which makes the composition of that sample to be

Carbonate of lime.....	98.6
Silica or other insoluble matter.....	1.4
	100.

I have also found one very white specimen in which the insoluble matter was only 0.4 per cent., but even from the solution of this, ammonia threw down a slight brownish precipitate of oxyd of iron.

A specimen of the blue vein variety showed the following characters:—Its specific gravity was 2.708. 1218.4 grains pulverized and carefully washed, afforded a residue of 5.5 grains of iron pyrites (and an inappreciable quantity of adhering silica,) equal to 0.45 per cent. 100 grains treated with strong acetic acid, lost 73.7 per cent. Strong boiling nitric acid applied to the insoluble residue dissolved the pyrites, and the sulphuric acid thence produced was precipitated with chlorid of barium, giving 1.62 grains, equivalent to 0.42 grains of iron pyrites, agreeing very nearly with the mechanical analysis.

The acetate was dried up, converted into carbonate, and then redissolved and precipitated with oxalate of ammonia, to separate the lime, after which ammonio-phosphate of soda threw down of phosphate of magnesia 1.3 grains, equivalent to 0.47 grains of magnesia, or to 0.97 grains of carbonate of magnesia. From this it should seem that the sample was composed of

Carbonate of lime.....	72.73
Carbonate of magnesia.....	0.97
Sulphuret of iron.....	0.42
Insoluble silicates.....	25.88
	100.

As the pyrites is one of the chief coloring matters of the dark veins, it is evidently very variably distributed through the stone. The crystals of sulphuret are mostly small, but easily detected, by the naked eye.

On breaking a weathered portion of the pyritous vein it is often found penetrated from one to two or three inches by the coloring matter (peroxyd of iron). On the interior parts of the discolored portion, the pyrites will be found but partially decom-

posed. On the outer portions it will have wholly given place to the peroxyd. On the fresh surfaces not reached by rust, the yellow pyrites remain unchanged.

When an attempt is made to polish a surface of the alum limestone, portions will occasionally be detected which from their softness render fruitless all attempts to impart lustre to them. On careful examination they will be found so soft as to be readily scratched with the finger nail. In many parts, little triangular cavities, from which it appears the last remnants of the solid angles of crystals have dropped out in the operations of cutting and polishing, will be easily discovered by the eye, and slight lines forming the boundaries of the large crystals are not unfrequently traceable when the piece is brought into a strong light. A block thus polished will have all its crystals of pyrites from their superior hardness left slightly elevated above the surface of the carbonate of lime which is worn away in polishing.

The surface of polished stone thus variously marked with elevations and cavities, may be used like an engraver's plate, and will give an impression of its own markings, of much interest.

To be continued

Freezing Water.

Mr. Faraday has read to the Royal Institution, a paper, "On certain conditions of Freezing Water." The chief object of Mr. Faraday's discourse was the great, various, and extraordinary forms of affinity which exist between the particles of water. Having experimentally illustrated the combining power of water, and shown how this attraction passes from a physical to a chemical force, Mr. Faraday confined the rest of his discourse to ice, as being that condition of water in which its particles are allowed to associate with each other without the intervention of foreign matter. Such ice as is now imported into this country under the name of the Wenham Lake Ice (though it is chiefly supplied from Norway) may be regarded as one of the purest natural substances. Mr. Faraday first showed how entirely colouring matter, salts, and alkalies, are expelled in freezing. A solution of sulphate of indigo, diluted sulphuric acid, and diluted ammonia, were partially frozen in glass test tubes; as soon as the operation had been carried on long enough to produce an icy lining of each tube, the unfrozen liquid was poured out and the ice dislodged. The ice was found in every instance perfectly colorless; and, when dissolved, perfectly free from acid or alkali; although the unfrozen liquid exhibited in the first experiment a more intense blue color, in the second a stronger acid, and in the third a more powerful alkaline reaction than the liquor which was put into the freezing mixture. Mr. Faraday also devised a method for making this ice perfectly clear and transparent as well as colorless. By continually stirring the liquid while freezing, with a feather, he brushed away globules of air as fast as they were dislodged from the freezing liquid, and thus prevented their becoming imbedded in the ice. Having noticed the rapidity with which water absorbs air as soon as it is thawed, Mr. Faraday called attention to the importance of this natural arrangement to aquatic plants and animals, to whose life air is as indispensable as to those which live on land. Mr. Faraday then referred to Mr. Donny's discovery that water, when deprived of air does not boil till it reaches the temperature of 270°; and that, at that degree of heat, it explodes. He mentioned that he suggested to Mr. Donny that ice when placed in oil (so as to prevent its receiving any air from the atmosphere on thawing) would probably explode on reaching the boiling temperature. This experiment had been successfully tried by Mr. Donny, and was as successfully repeated on this occasion. Mr. Faraday then invited attention to the extraordinary property of ice in solidifying water which is in contact with it. Two pieces of moist ice will consolidate into one. Hence the property of damp snow to become compacted into a snowball—an effect which cannot be produced on dry hard frozen snow. Mr. Faraday suggested, and illustrated by a diagram, that a film of water must possess the property of freezing when placed between two sets of icy particles, though it will not be affected by a single set of particles. Certain solid substances, as

flannel, will also freeze to an icy surface, though other substances, as gold leaf, cannot be made to do so. In this freezing action latent heat becomes sensible heat; the contiguous particles must therefore be raised in temperature while the freezing water is between them. It follows from hence that by virtue of the solidifying power at the points of contact, the same mass may be freezing and thawing at the same moment, and even that the freezing process on the inside may be a thawing process on the outside. Mr. Faraday then referred to Mr. Thomson's memoirs on the effect of pressure on the freezing point. Mr. Thomson has shown that immense pressure will prevent water from freezing at 32°—ice naturally occupying a greater volume than that of the water which forms it. And we may conceive that when ice is pressed, the tendency is to give both the water bulk and state.

In conclusion, Mr. Faraday noticed briefly, and chiefly by way of suggestion, the molecular condition of ice, as presenting many curious results; and called attention to the strangeness of striæ being formed in a body of such uniform composition as pure water frozen into ice.—*Year Book of Facts.*

From the Journal of the Franklin Institute.

ON A PROBABLE MEANS OF AUGMENTING THE ABRASIVE POWER OF LOCOMOTIVES ON THE HIGH GRADIENTS OF RAILWAYS.

By Elwood Morris, C. E.

It is well known that numerous accurate experiments on friction have established the law, that within the limits of abrasion, the friction is as the insistent weight, and not as the surface of contact.

These experiments, though they have formed the basis of many calculations of the various frictions of railways, and have been valuable in this department of mechanical science in establishing *minimum* results, do not meet the practical acquirements of railway motions, because, in those motions invariably, when *maximum* effects are to be produced, the limit of abrasion is always reached and passed.

Of the friction of moving metals in contact, when abrading each other, we have no experiments whatever. Hence we have no means of calculating beforehand, the bite of a locomotive slipping her wheels upon a rail, because then both wheels and rails *abrade*.

We know that the maximum adhesion of engines upon dry rails, exceeds all results of calculation based upon the ordinary laws of friction, and hence some have been inclined to doubt the accuracy of those laws, though they are undoubtedly true, within the limits taken by the initial experiments upon which they were founded. When engines slip their wheels on railways, both wheels and rails *abrade*, the law of friction changes, and we enter at once upon a new field, in which we have no exact results recorded, and of which we only know that the coefficient of friction is greatly increased.

It is upon this meagre outline of facts, (which might be much extended if the authorities were at hand,) that the writer, from observation of years in his professional avocations, has formed the opinion, that beyond the limits of abrasion, the law of friction, as applicable to brake blocks and the slip of wheels on rails, changes entirely, and that the bite or adhesion is in some degree proportionate to the surface of contact, as well as to the weight imposed. The writer believes this to be especially the case in the ascension of heavy gradients by locomotives, where the sand box is always used. In such cases, it is highly probable that a mere increase of the breadth of the rail, or surface gained, will augment very materially the bite or adhesion of the driving wheels, though the weight remains the same.

The usual surface of contact of wheel and rail, has a breadth of only *two* inches, while the wheels themselves have a breadth of nearly *four* inches. If then, beyond the limit of abrasion, the friction increases in the same ratio to the surface, (as the writer believes,) then upon high gradients, all we have to do is to lay down broad headed rails, conforming to the tire of the wheels, and thus increase at once the adhesion.

This, of course, supposes engineers to have surplus steam power; and such is usually the case

with modern locomotives, which in fact, as now in practice, always do, or ought to, arrive at the foot of a steep grade with a full head of steam; then the sand box freely used upon a four inch rail, it seems highly probable, will augment so much of the bite of the wheels, as to render high gradients less formidable than they are now.

To the above considerations, the writer respectfully invites the attention of his professional brethren, in the hope that some of the companies they serve may at once put this important matter to the test, and lay a few hundred yards of rails, four inches broad, upon the high gradients of some railway doing a heavy freight business. A few months' use, and a few correct experiments, would settle this question definitely, and the writer knows scarcely any other, of more moment to some railways.

New York.

Rochester and Syracuse Railroad.—The following table exhibits the receipts of the Auburn and Syracuse and Auburn and Rochester railroad company, now the Rochester and Syracuse railroad company, for the past four years, and including the first three months of the present year:—

	1847.	1848.
January	\$28,790 85	\$32,340 21
February	20,004 56	29,474 06
March	25,137 38	33,390 89
April	50,223 47	66,827 81
May	52,509 76	68,482 27
June	50,339 88	52,178 75
July	57,865 31	53,406 17
August	65,546 30	69,671 22
September	66,078 48	69,755 40
October	52,534 68	55,124 83
November	38,257 48	45,400 98
December	33,595 88	33,849 65

Total

1849. 1850.

January	\$33,982 74	\$41,036 24
February	33,615 69	36,738 69
March	38,924 60	47,347 64
April	66,505 57	80,866 58
May	84,375 45	95,880 82
June	63,906 21	84,032 79
July	56,633 86	86,883 45
August	60,528 96	94,682 54
September	90,510 32	106,754 23
October	84,082 11	95,412 52
November	63,006 29	*75,000 00
December	45,740 54	*50,000 00

Total

U.S. Mails, &c., [*Estimated].....

Total

January, 1851

February

January and February, 1851

March

Increase of Jan. and Feb. 1851 over

1850

What Railroads do for Land.

The *Wheeling Times* says, that land along the line of the Baltimore and Ohio railroad in Virginia, has increased in the average 300 per cent., and the amount of land now being prepared for cultivation is greater than ever cultivated before. A farm in West Zanesville which had been offered for \$12,000, has, since the railroad was located along its borders, been sold for \$20,000. In Newark, Ohio, a tavern stand which had rented for \$400, on the completion of the railroad rented for \$1,800.

Extract from the Annual Report of the Board of Canal Commissioners of the Commonwealth of Pennsylvania, for the year ending Nov. 30, 1850.

The gross receipts on all the lines of canal and railroad belonging to the commonwealth, for the year ending the 30th of November, 1850, amounted to \$1,768,209 46, and the expenditures for ordinary repairs and breaches, including the cost of the temporary means of maintaining the passage for boats across the Susquehanna river at Clark's fer-

ry, \$857,228, showing an excess of receipts over expenditures of the sum of \$910,981 46. The net receipts of 1850 exceed those of 1849 by \$36,204 61.

The past fiscal year has been remarkable for the number of high freshets with which the several lines of canal yielding the largest portion of revenue have been visited. A succession of breaches occurred from the high waters in July, August, and September, by which the navigation of the main line, at its eastern terminus, and of the Susquehanna, West Branch, North Branch, and Delaware Divisions, was materially impeded by the time necessarily occupied in making extensive repairs.

To add to these calamities, on the morning of the 11th September the towing path and road bridge over the Susquehanna river, at Clark's ferry, was fired by an incendiary, and the superstructure totally destroyed, thus rendering it incumbent on the board to fit up, at a heavy expense, a steam towing boat, for the purpose of maintaining, as far as practicable, the speedy transit of boats at that point. These combined causes, as a matter of course, affected the revenues to a considerable extent, and added largely to the expenditures. The cost of repairs by floods, and the fitting up of the steamboat, irrespective of the loss of the superstructure of the bridge at Clark's ferry, amounted to \$66,573 44.

The following statement exhibits a more detailed account of the receipts and expenditures than is contained in the foregoing abstract:

RECEIPTS FOR ALL PURPOSES.

Columbia Railroad.

Philadelphia.....	\$359,647 18
Paoli.....	21,660 48
Parkersburg.....	29,189 84
Lancaster.....	66,985 74
Columbia.....	160,657 31
Schuylkill viaduct.....	307 00

Total Columbia railroad.....

Allegheny Portage Railroad.

Hollidaysburg.....	\$145,500 57
Johnstown.....	96,316 88

Total Portage railroad.....

Main Line of Canal.

Columbia, including	
outlet lock.....	\$147,265 05
Portsmouth.....	14,619 75
Harrisburg.....	29,373 49
Newport.....	4,407 70
Lewiston.....	13,829 09
Huntingdon.....	14,284 23
Hollidaysburg.....	36,205 92
Johnstown.....	60,772 73
Blairsville.....	6,491 58
Freeport.....	3,154 29
Pittsburg.....	146,137 08
Portsmouth outlet lock.	1,182 75
Swatara bridge.....	275 00
Duncan's Island bridge.	1,181 66
Juniata aqueduct.....	89 07
Freeport aqueduct.....	177 00

Total main line canal.....

Delaware Division.

Easton.....	\$173,650 09
New Hope.....	15,079 21
" outlet lock....	3,786 00
Bristol.....	22,832 57

Total Delaware division.....

Susquehanna, North and West Branch.

Dunnsburg.....	\$18,361 03
Williamsport.....	16,787 04
Northumberland.....	39,878 93
Berwick.....	102,228 33
Liverpool.....	15,894 86

Total Susquehanna, North and West branch divisions.....

Total gross receipts on all the lines.....

EXPENDITURES.

For maintaining motive power on the Philadelphia and Columbia railroad, including repairs and management of trucks, and purchase of one locomotive engine from motive power fund....	\$201,810 83
For the purchase of 3 new engines from special appropriation per Act of 10th April, '49.	24,600 00
For repairs of Philadelphia and Columbia railroad.....	71,466 39
For collectors, weighmasters, inspectors, and incidental expenses of their offices....	12,466 98
	\$310,344 20

For maintaining motive power on the Allegheny Portage railroad, including the repairs and management of State trucks, the purchase of passenger cars, and two new locomotive engines....	\$182,941 24
For ordinary repairs on Allegheny Portage railroad.....	43,336 03
For extraordinary repairs of incline planes per Act of 10th May, 1850.....	18,579 94
For collectors, weighmasters, inspectors, &c.....	2,992 96
	247,844 17

For ordinary repairs on main line of canal...	\$101,242 18
For breaches on main line.....	16,856 53
For collectors, weighmasters, inspectors, &c.....	16,553 06
For lock tenders.....	27,249 00
	161,900 17

For repairs on Delaware division.....	\$32,066 85
For breaches on Delaware division.....	19,182 55
For collectors, weighmasters, inspectors, &c.....	4,059 82
For lock keepers.....	5,525 00
	60,834 22

For repairs on Susquehanna division.....	\$9,182 00
For breaches on Susquehanna division.....	4,000 00
For repairs on West branch division.....	12,548 72
For breaches on West branch division.....	12,778 67
For repairs on North branch division.....	12,000 00
For breaches on North branch division.....	13,755 69
For collectors, weighmasters, inspectors, &c.....	6,150 56
For lock keepers.....	5,889 00
	76,304 64

Total expenses.....

Gross receipts.....

Net receipts over expenses.....

Adding to the expenditures the pay of the canal commissioners, secretary, messenger, and the incidental expenses of their office, amounting to \$5,300, the actual net receipts for the year 1850 are \$905,681 46, being an increase over the net receipts for 1849, of \$30,964 61.

The officers have been specially instructed to include in their reports the entire cost of repairs, whether paid or unpaid, so as to present to the

Legislature a correct statement of the actual cost of the public works for each financial year. It is believed that this direction has been faithfully observed. These reports form the basis of the preceding abstract, from which it will be seen that the expenditures for all purposes, exclusive of farm bridges, amounted to \$862,528. In this statement, however, is included the extraordinary repairs to the inclined planes on the Allegheny Portage railroad, the purchase of six new locomotive engines, and the sum of \$66,573 44, for repair of damages by floods and fire.

The report of the superintendent of motive power, and supervisor of repairs on the Philadelphia and Columbia road, exhibits a very comprehensive view of the condition and operation of that part of the improvements. His report on the motive power departments presents the following statement:—

The number of cars passed over the road in 1840, amounted to 140,394, exceeding the number passed in 1849, by 19,562.

The freight passed over the road amounted to 265,113 tons, being an increase over the last year of 45,632 tons.

The number of miles travelled by passengers was 8,060,278, equal to 98,296 through passengers over 1848, of 8646.

The number of trips run by locomotives was 8074, or 630,084 miles, an increase of 604 trips, or 47,112 miles over the preceding year.

Georgia.

Southwestern Railroad.—At a recent public meeting of the citizens of Savannah, at which the Mayor presided, to take into consideration the question of the subscription of \$100,000 by the city towards aiding the construction of 21 miles of road from Fort Valley, to form a connection between the Southwestern and Muscogee railroads, the following resolution was passed unanimously:

Resolved, That the Mayor and Aldermen of the city of Savannah be requested to subscribe one hundred thousand dollars in city seven per cent. bonds, towards the construction of the twenty-one miles of railroad between Fort Valley and the eastern terminus of the Muscogee railroad.

Missouri.

Pacific Railway.—The directors of this company have determined to put 45 miles of the road immediately under contract, leaving the remainder to be located after the next Congress have time to decide upon the proposed grant of lands in aid of the work. There being three lines surveyed, as we understand it, either of which may be well adopted, from a point about 45 miles west of St. Louis.

Canada.

We learn from the Montreal Pilot that great exertions are making to complete the improvement in the Chambly canal, the link connecting Lake Champlain with the St. Lawrence river, by the Sorel river. It is added that the active competition between the Ogdensburgh route and the St. Lawrence renders the improvement of the canal of vast importance to Canada. About two miles and a half of the canal requires to be deepened throughout from 6 to 12 inches—and the locks of the canal must be proportionately elevated.

Virginia.

James River and Kanawha Canal.—We have received the 16th annual report of this great Virginia work. As the report is a very elaborate one, and embraces a great many matters that concern the company only, we shall present only such portions of it as are of public interest.

The whole amount of disbursements of the company since its organization, on account of this work, have been \$9,843,358 38. This embraces the sum of \$76,243 14, which has been lost through agents of the company, or from non-payment of notes taken for stock; and also the sum of \$141,

813 44 cash on hand. The following shows the receipts of the company, and the sources whence derived:—

Income of old and new works.....	\$9,436,241 50
Premium on bonds sold.....	42,125 13
From State loan of interest money..	57,559 36
Income of Richmond dock.....	77,863 46
From capital stock.....	5,000,000 00
Less:	
State's credit for old works.....	1,000,000 00
Uncollected stock.....	71,536 08
	<hr/>
	1,071,536 08
	<hr/>
	3,928,463 92
From guaranteed loan..	1,400,000 00
From loan for tide water connection.....	114,200 00
From guaranteed loan for south side and Rivanna connections.	65,900 00
From loan of state stock	250,000 00
From bond given to the state.....	268,645 33
	<hr/>
	2,098,745 33
From sale of land received from the Old James river company.	28,484 46
From rents and property sold on second division and on tide-water connection....	534 58
	<hr/>
	29,019 04
From state's loan for resumption of work above Lynchburg—	
First instalment issued 1st July, 1847.....	242,000 00
Second instalment issued 1st Jan., 1848.....	250,000 00
Third instalment issued 17th Aug., 1849....	250,000 00
Fourth instalment issued 2d Jan., 1850.....	244,000 00
Fifth instalment issued 9th March, 1850.....	250,000 00
	<hr/>
	1,236,000 00
Less amount unsold.....	105,100 00
	<hr/>
	\$9,843,358 38

There have been no dividends paid to private stockholders. These have been applied to the payment of the interest of the guaranteed bonds, or have been absorbed by the progress of the work.

There has been paid out for the maintenance of the old canal, the Kanawha road, the Blue Ridge canal, and for the improvement of the Kanawha river, the sum of \$277,376 60; for the maintenance of the new canal from Richmond to Lynchburg, \$701,560 47; for repairs of the Richmond dock, \$30,025 30. The charges upon the company for interest, etc., with the annuity to the old James river company, of \$21,000 yearly, have amounted to \$1,495,376 51. The construction of the canal to Lynchburg has cost \$5,192,855 07; expenditures above Lynchburg, old and new, \$1,507,680 26. The Richmond dock has cost \$244,021 98, the tide water connection \$92,439 33, south side connections, \$13,214 42, Rivanna connection \$39,410 23, western surveys, \$25,028 99.—There has also been expended the sum of \$6,302 54 on the 3d and 4th divisions between Covington and the mouth of the Greenbrier river.

The productive works of the company at the present time are:—

Canal from Richmond to Lynchburg.

Richmond Dock.

Rivanna connection.

Blue Ridge turnpike and ferry.

The Kanawha turnpike and river.

The receipts for the past year have been as follows:—

Richmond dock.	\$9,531 65
Expenses..	3,816 73
	<hr/>
	net income, \$5,719 92
Canal fm. Richmond to Lynchburg.....	239,684 49
Expenses..	83,715 47
	<hr/>
	net income, 155,969 62
Blue Ridge ferry and turnpike.....	1,500 95
Expenses..	981 82
	<hr/>
	net income, 519 13
Kanawha road and river....	19,172 73
Expenses..	15,727 10
	<hr/>
	net income, 3,445 63

The disbursements for the past year—not embracing work in progress—have been as follows:

Repairs, maintenance of canal, etc....	\$104,174 12
Annuity to old James river co.....	21,000 00
Interest on company's bonds, [\$1,400,000] guaranteed by the State..	85,971 00
Interest on company's bonds, [\$250,000] of March 25th, 1842.....	15,000 00
Interest on company's bonds, [268,645 33] of 24th Feb., 1845.....	16,118 72
Interest paid State on bonds loaned under act of March 1, 1847.....	59,340 00
Interest on guaranteed bonds issued for tide water connection.....	3,204 00
Interest on guaranteed bonds issued for south side and Rivanna connections.....	1,968 00
Miscellaneous disbursements.....	4,455 30
	<hr/>
Total.....	\$311,241 85
Excess of disbursements over receipts	587 99

Making an aggregate of gross earnings of \$369,889 82, and net earnings of \$165,648 70. There has also been received, as applicable to the ordinary operations of the company, the further sum of \$40,764 04, being the balance on hand at the commencement of the year, and premiums on bonds sold, etc.

The estimated expenses and income for the current year is as follows:—

For interest on state bonds, issued and to be issued for resumption...	70,000 00
For interest on company's bonds, guaranteed by the State, [principal \$1,400,000].....	84,000 00
For interest on company's two bonds to the state.....	31,118 72
For interest on company's bonds, guaranteed, being for connections.	19,000 00
For annuity to old James river company.....	21,000 00
And for expenses of general administration, including the line to Buchanan, and for repairs.....	100,000 00
	<hr/>
	\$325,118 72

The company's resources for the same period, may be estimated as follows:—

Receipts on canal to Lynchburg.....	250,000 00
Receipts on dock, and from Rivanna and south side connections.....	25,000 00
Receipts on second division, from Lynchburg to Buchanan.....	25,000 00
Net receipts on western improvements, including Blue Ridge road and ferry.....	12,000 00
Miscellaneous sources, including debt and interest due from Gen. Hamilton, premiums on script sold, arrears of tolls on Kanawha river, and sales of Middleton mills and other property not required for purposes of navigation.....	100,000 00
	<hr/>
	\$412,000 00

Estimated net income..... \$36,881 28

The length of the canal now in operation, extending from Richmond to Lynchburg, is 146

miles. That of the division in progress from Lynchburgh to Buchanan is 50 miles long. This portion of the line will probably be completed the coming season. For this, the company possess ample means. For the extension of the canal to Covington, 47½ miles, the State has agreed to guarantee the bonds of the company to the amount of \$360,000, which is only about one quarter the probable cost. This section will not, we presume, be commenced till further means are provided, and probably by the guarantee of the State.

The total amount of freight which passed over the canal the past year is 177,381 tons, showing an increase of 2171 tons over the year preceding. The estimated value of freights is \$14,000,000. The receipts are \$10,034 29 less than those of the past year, and the expenses \$9,625 18 greater. This unfavorable result is accounted for by the fact that the navigation of the canal was closed for a portion of the year, and that more than ordinary repairs were required.

That this canal will be carried to Covington, at the foot of the mountains, there seems to be not much doubt. Beyond that point its extension is very problematical. The report of the company unhesitatingly advocates its construction to the navigable waters of the Kanawha, and expresses a belief that no unsurmountable obstacle exists against carrying a water line across the mountains. It was the intention of the company to have had careful surveys made the past year, for the purpose of establishing the question of feasibility of a canal over the mountains. Unavoidable circumstances postponed this work to the present year.—We look forward with much interest to the result of these surveys.

A continuous canal from tide water to the navigable rivers of the Mississippi valley, has for many years been the favorite project of Virginia. In the outset, the practicability of this work was to a certain extent assumed, from its importance to the commerce of the country and the development of the resources of Virginia. As far as climate, length of line, importance of connection, and resources of the country traversed are concerned, the route occupied by the James river and Kanawha company is certainly equal, if not superior, to any rival work. The great obstacle in the way of success, is the unfavorable profile presented by the country through which the canal must pass.—Whether the difficulties arising from this cause can be overcome, remains to be demonstrated. Could Virginia open and maintain a work which could carry at the moderate rates of the Erie canal, the benefits to be derived from such a work, could not be estimated. The question for consideration is, not the possibility of its execution, but the ability of such a work to compete with those having a similar object. Rivals will exist from Maine to Georgia. Success will depend upon cheapness of carriage in relation to cost. This work might be carried to the Ohio, and still not pay the expense of keeping it in order. All considerations of State pride, all anticipations of future greatness, based upon the success of this work, must submit to the universal and despotic law, which always throws trade and commerce into the cheapest channels.

We should rejoice to see this work carried out if justified by the above tests. We hope further surveys may prove it to be practicable. But we confess, that to a person at a distance from Virginia, and uninfluenced by local considerations,

the probability of its completion the Ohio is growing less. For a time this was the only subject of State bounty. All the internal improvement feeling was confined to it. Virginia looked upon this as the only work by which she could display and open to a market the wealth of the interior portions of her territory, and connect herself with the still more fertile regions of the west. A few years has witnessed a great change. Railroads have now become the popular enterprises of the day. These are practicable everywhere. Each section is absorbed in its own projects, and the interest which once attached itself to the James river and Kanawha company is now diffused over the whole State. The relative magnitude of this great work is wonderfully changed. It is now a supplicant with a great number of others, all clamorous for aid. Another cause operating adversely to the prospects of this, is the fact that popular feeling in Virginia is running strongly in favor of railroads. Those interested in railroads naturally array themselves to a certain extent against the canal. They look upon the aid extended to this as so much taken from themselves. It would not be surprising, therefore, if this interest should combine to put a stop to the further progress of the canal.

Whatever may be the result, it may be certainly said in praise of the friends of this work, that no body of men have adhered to a similar one, with a more steadfast devotion, or who have labored for success, and with it the good of a whole State, with greater singleness of purpose.

Census of Mississippi.

	1850.		1840.	
	Whites.	Slaves.	Whites.	Slaves.
Northern District,	170,459	134,508	84,113	62,313
Southern District,	129,550	177,060	95,962	132,869

Total..... 300,009 311,568 180,075 195,182

The above is the official count, with the exception of Yazoo county, which is estimated. The increase in the northern district, it will be seen, in the last ten years is 108 per cent.; in the southern district about 32 per cent. The increase of the State taken together is over 61 per cent., largely outstripping even that of Georgia. The total population of Mississippi is now 611,577; her representative population is 486,949, which will entitle her to five members of the lower House of Congress for the next decade.

Alabama.

Mobile and Ohio Railroad.—The Mobile Tribune states that the agent for the state of Alabama has just completed, under the provisions of the act of Congress granting lands to the state within her borders to aid in the construction of the Mobile and Ohio railroad, the selection and location of 396 sections or square miles of land from the public domain of the United States. The land thus secured is equal to 253,440 acres, the most of which, from its contiguity to Mobile, is very valuable. A great deal of it consists of alluvial lands on the margins of Mobile, Spanish, Tensa, and Apalacha rivers, and islands composed of shells and marls, all above overflows, and it is susceptible of cultivation and exceedingly fertile. The remainder consists of high and dry pine lands lying west of the city and along the line of the road, and in Baldwin county.—Taking these lands as a whole, they may be safely estimated to be worth \$3 per acre.—This valuable donation will be owned and fully under the control of the company, as soon as that part of the Mobile and Ohio railroad lying within this state shall be completed.

The lands selected as above comprise only that portion of the grant lying within the state of Ala-

bama. The whole grant, we believe, covers some 2,000,000 acres.

Virginia.

Blue Ridge Tunnel.—Mr. Imboden, of Augusta, in the House of Delegates, Saturday, submitted a statement by Col. Crozet, showing the condition of the Blue Ridge Tunnel on the 5th instant. It appears that the whole distance penetrated at the Eastern end is 94 feet, and the total number of cubic yards excavated 942 feet. The progress of the heading from the 5th February to the 5th March was 22 feet, of the flooring, 32½ feet, or one and a half foot forward each working day, through the hard rock. On the West Side, the progress of the heading in the month was 21 feet, of flooring 24 feet; total progress of the heading on the West side, since August, when the work commenced, 224 feet; total number of cubic yards excavated on the West side, 1237. The flooring on this side entered the tunnel only last month.—*Richmond (Va) Times.*

New York.

Railroad Route from Oswego to Rome.—The engineer of the Watertown and Rome Railroad has lately been engaged in surveying a route from Watertown to Oswego, passing near the village of Pulaski. From a point called the "Sand Banks" to Oswego is twenty-seven miles, which is supposed will be the shortest and cheapest route from Oswego to Rome. Oswego is moving in the matter as are others along the route as well as those interested in lands in that quarter. Gerrit Smith has subscribed eight thousand dollars, and other gentlemen quite as liberally. Pulaski has added several thousand dollars to the list of subscriptions, and from present appearances it would seem the road was destined to go on to completion.—*Syracuse Star.*

Virginia.

Richmond, Fredericksburgh and Potomac Railroad.—The following is a synopsis of the 17th annual report of this company, submitted at a meeting of its stockholders held at Richmond on the 27th of May, 1850:—The cost of this road up to the 31st of March last was \$1,509,471.62; its income for the year ending same date was \$237,963.74, which is an increase of \$39,009.16 on that of the previous one. The current expenses of the year were \$108,323.67. This gives a balance as net earnings of road of \$129,640.07. After paying out of this sum \$90,504.21 for dividend of seven per cent, and charges for interest, the company were enabled to expend \$26,271.08 for additional machinery and improvements of road, and at the same time, increase to the amount of \$12,864.18 their available means, for the payment of the usual dividend, should there be a falling off of income in any particular year. The fund set aside for this last purpose amounts to \$116,424.60. The capital stock of the company is put down at \$1,000,000, and is made up of 10,000 shares, 7,000 of old, 3000 of new stock. Of the old stock, 2952 shares were subscribed for by the State, and the remainder by individuals. The receipt of the company since commencement of the work for transportation are stated at \$2,397,607 25. The expenses during the same period for transportation, interest, and certificates of debt, amount to \$1,740,098. 77. The amount of cash on hand to 31st March, 1850, was \$27,656.16. The debts of the company amount to \$650,519.37. Of this sum \$17,513.76 are for debts due by bills and open account, the residue are on bonds and certificates of debt for dividends. The amount now due the company is \$137,844.66. The assets of the company are as follows, stock purchased \$27,678.53, Washington and Fredericksburgh steam-boat stock, \$27,800; do. bonds \$33,900, and sterling bonds \$2,592. Total, \$91,970.53. It is intended by the board of directors, should the income of the company for the current year equal that of the past, to continue making

improvements on the road, both by the laying of a heavier and more substantial rail on a portion of the route, and additions to the machinery.

Georgia.

Macon and Western Railroad.—From the fifth annual report of the directors of this company, submitted to the stockholders on the second day of December last, it appears that the cost of the road up to December 1st, 1850, amounted to \$630,000. The income of the road for the past year was \$208,666.13, and its expenses \$108,234.69. The amount of assets of the company on hand are stated at \$103,030.93; or deducting \$4,487.03 for liabilities, \$98,543.90. Of the earnings of this road \$96,506.92 have accrued from freight, and \$100,433.79 from passengers. The available balance on hand is \$38,803.90. The dividends, No. 7 and 8 amounted to \$67,500. On the 5th of June last the stockholders authorized the President of the company to contract for the iron, &c., for the relaying of the track, the cost of which was estimated at \$388,500. This includes iron rails, spikes and plates, and expenses of relaying. This sum is to be raised by issuing 4625 new shares of stock, at \$84 per share, the par value of the original shares. Books have been opened for this purpose, and up to date of report all the new shares have been taken, with the exception of 13,000. These it is anticipated will speedily be disposed of. The earnings of the road upon completion of all connecting lines, now in course of construction, is estimated at \$250,000, or a net income of \$150,000, after deducting expenses, or about 14½ per cent. on the whole capital.

Tolls on the Ohio Canals.

The Cleveland Plaindealer gives the following reduction on canal tolls on the Ohio canals:—On flour, wheat, whiskey, and articles of Produce generally, except corn, upon which the reduction at this time is less. The tolls are to be seven mills for 1,000 lbs., for the first 100 miles, and four mills for the second 100 miles; and not to exceed \$1 per 1,000 lbs. for any distance on the canal, with a reduction of 30 per cent on those rates, on produce from Newark to Cleveland, and 40 per cent from Columbus to Cleveland. Salt and fish the same rates. On merchandise twelve mills per mile, and not to exceed \$1 70 per 1,000 lbs. for any distance, with a like reduction of 30 and 40 per cent as above. The tolls on lumber are also materially reduced.

Pennsylvania.

Leggett's Gap Railroad.—A supplement to the charter of the Leggett's Gap railroad company passed the House of the Pennsylvania Legislature on the 17th inst. by a large majority. The road is to extend from Providence, Luzerne county, to Great Bend, Susquehanna county, there to intersect the New York and Erie railroad. The supplement authorizes the company to increase their capital stock \$900,000, or "in lieu of the same or any part thereof, to issue bonds or certificates of loan, and in such case the directors shall have the power to give the stock, bonds and certificates thus issued such preference, by mortgage or otherwise, over the original capital stock of the company, in the amount and payment of dividends and interest, not exceeding seven per cent, as they shall deem expedient. Provided, That to the extent of any sum of money, which shall be subscribed to this increased capital stock, the company shall be taxed one per cent, payable in every case at the end of one year after the date of such subscription to be appropriated to a redemption of the loans of this

commonwealth. Provided, That it shall not be lawful for the said company to evade the payment of any of its obligations by virtue of the plea of issuing against the party who may sue for the same."

Maine.

Penobscot and Kennebec Railroad.—We copy from the Bangor Whig a part of the statement of G. W. Pickering, Esq., at the recent meeting in that city, relative to this road and the propositions that have been made by other companies:—

In the location of the road from Waterville to Augusta, there is an understanding that when the arrangements shall be completed with the Androscoggin and Atlantic and St. Lawrence roads, then this company will relinquish to the Portland and Kennebec road the route from Waterville to Augusta, with the condition that they shall complete that portion of the road as soon as this road is completed to Waterville.

The purpose of the directors of this road was to throw upon the roads west of it the risk of the stock of this road paying six per cent interest.—And in accordance with this purpose, they have entered into an agreement with the directors of the Androscoggin and Kennebec and the Atlantic and St. Lawrence roads, to take a lease of this road for twenty years, paying therefor an annual rent of \$75,000 and keep the road in repair. This agreement has been ratified on the part of the stockholders of the Atlantic and St. Lawrence road, and is soon to be acted upon by the stockholders of the Androscoggin and Kennebec road. [The meeting at Winthrop last week adjourned without ratifying.]

Mr. Pickering said that the guaranty of the two roads were deemed perfectly good, and that parties interested in those roads had expressed a willingness to take one-half the stock and dispose of it among their friends. But even if the two roads should not pay the rent of the road, and thus their guaranty should prove worthless, the investment was safe because a similar arrangement could be made with the Augusta road.

He stated that certain parties had proposed to build the road for \$1,250,000, the amount upon which the two roads agree to guaranty six per cent; they will take half the stock of the company and the balance in cash. The directors believe that the road may be built for this sum, but there are some other additional expenses which must be provided for, and this has been anticipated by a qualifying clause in the agreement, by which, at the same time, additional stock could be created not to rely upon the guaranty.

Mr. Pickering gave it as the opinion of the directors, after much inquiry and examination that the road can be built, provided the citizens of Bangor will take two hundred thousand dollars of the stock. The contractors for building the road propose to take \$600,000, the citizens of Bangor \$200,000, the people on the line of the road \$100,000; while the balance of \$350,000 could be raised by the issue of bonds with a guaranty of six per cent for twenty years, and they could be disposed of without difficulty. This would secure the immediate conclusion of the agreements, and the shovels could be put at work the next summer and in eighteen months from next July the road could be opened.

Tennessee.

Nashville and Chattanooga Railroad.—We find in the Charleston Mercury a letter from V. R. Stevenson, Esq., the president of the company, addressed to the Mayor of Charleston, Honorable J. Schnierle, giving a brief account of the progress of this important work. We give below the following extract:

Our work is progressing finely. We have 12 miles of iron down, and about seven miles more of timber laid ready, and will in this way have within three weeks 21 miles ready, iron and all, and be running over it. We had yesterday between 300 and 400 passengers on the road. I am satisfied

that we shall do an immense passenger business.

We have a good prospect now of a road to Louisville, Ky., to Cairo, and to Memphis, Tenn., all of which will most certainly be under way within the next twelve months.

We find the whole valley of the Mississippi directing their main lines of improvements to Nashville, and by that hoping to reach an outlet to their surplus products through Charleston; and I have consequently watched, with interest, the movements of your state and city in preparing for direct shipments and imports, by which your city will be raised to a most enviable position in the country. If you will examine the census returns, you will see that the country immediately surrounding Nashville, say Alabama, Mississippi, Missouri, Illinois, Indiana, Ohio and Kentucky, are growing with a giant stride unheard of in the annals of man, and our road, with the roads making and contemplated from all these directions, will place Charleston nearer to the principal cities of these states than any Atlantic port north of it; and the disastrous casualties on the waters of the Mississippi recently, contribute to develop and forward this natural tendency to reach the Atlantic at the nearest point, and we are at Nashville, preparing ourselves to forward this tendency by subscribing liberally to improve the river, and to the three railroads, one from Louisville, one from Cairo, and one to Columbus, Tennessee, and on to the Big Bend of the Tennessee river.

East Tennessee and Georgia Railroad.—We learn that regular daily trips are made on this road from Dalton, Ga., on the Western and Atlantic railroad, ten miles. For this distance, the mails, passengers and freight are being transported, the receipts for which already cover expenses. When the road is completed to Blair's Ferry, it is expected it will yield a handsome profit.

OFFICE OHIO AND PENNSYLVANIA R. R. Co.,
Pittsburg, March 22, 1851.

H. V. POOR, Esq.,

Dear Sir: The laying of the track of the Ohio and Pennsylvania railroad from Pittsburg to Massillon, a distance of 107 miles, was allotted yesterday to Bailey, Hayden & Co., of Massachusetts. You will find a notice of the letting in the Pittsburg Gazette of to-day. The contractors are highly recommended as able and energetic men, who have had much experience in laying track in New England.

If the contractors for delivering materials comply with their contracts, the track is to be laid from Pittsburg to New Brighton, 27 miles, by the 1st of July; to Alliance, 81 miles from Pittsburg where our line intersects the Cleveland road, running to Wellsville, by the 1st of October; and to Massillon, on the Ohio canal, by the 1st of November of this year.

A large amount of our iron is already delivered, and our engines are to be ready by the first of June. Our grading is in a very forward state, much of it being completed, and the fruit of our toil is fast ripening to our hands.

We confidently expect to accomplish our connection with Cleveland, and through Cleveland with Columbus and Cincinnati, in the autumn of this year. The distance by this route from Pittsburg to Cincinnati will be 390 miles, and the roads are all of the Ohio gauge of 4 feet 10 inches. It is a circuitous route, and yet it is nearly a hundred miles shorter than the distance by the Ohio river, and of course can be run in much less time. The distance will be shortened to about 340 miles when our western connections are completed.

When the western division of the Pennsylvania railroad is completed in the spring of next year, New York will have a continuous railroad connection with Cleveland, about thirty miles shorter

than by the New York and Erie railroad and the Lake Shore line, and seventy miles shorter than by Albany and Buffalo. This choice of routes will benefit the public, and make much of the travel move in a circular manner, people going one way and returning another. Our rich and heavy local business will support our road, and make it a strong competitor for the through travel.

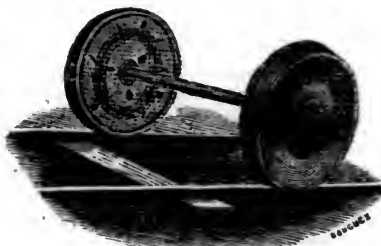
We feel much obliged to you for the kindness with which you have, from time to time, noticed our labors.

Very respectfully and truly yours,
S. W. ROBERTS, C. E.

Boston Locomotive Works,
—Late Hinkley & Drury—
No. 380 Harrison Avenue,
BOSTON.

Locomotive and Stationary Steam Engines; Boilers; Iron, Brass, Copper and Composition Castings; Coppersmith's Work, and all kinds of Railroad Machinery furnished at short notice.

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Van Kuran's Improved Railroad Wheel,

Patented May 1, 1849. Manufactured under the personal superintendence of the Patentee, as above. Orders for any quantity of wheels executed with dispatch, and wheels and axles fitted in the very best manner and at the lowest rates. Address
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To Engineers and Ship Builders.

THE Advertiser is desirous of a situation in a respectable concern, he has acquired a practical knowledge of his business in the establishment of R. Napier, Esq., Glasgow, has since for several years had the management of the works of an extensive Steam Packet Co., for whom he designed and built some Iron Screw Ships, whose capabilities and performances give the highest satisfaction. While acquainted with all the most approved modes of construction of marine engines, he is prepared to submit original designs. In modelling and draughting he has had much and successful experience. Can produce the highest testimonials as to character and abilities from the first engineer on the Clyde.

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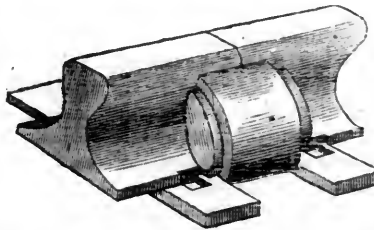
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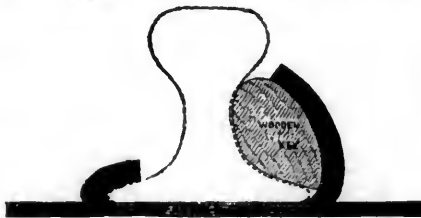
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Boiler Plates of superior quality, perfect regularity in the squaring and thickness, and made with great care.

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CHARLES ILLIUS.

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E. PRATT & BROTHER,
Baltimore, Md.

AMERICAN RAILROAD JOURNAL.

Saturday, March 29, 1851.

The Stock and Money Market.

Since our last, the prices of railroad securities have gradually receded. A reference to our tables will show a large decline in some of our leading stocks. The market is in an unsettled state, and though money is abundant in the ordinary and regular channels of business, it is scarce for purposes of speculation, and there is strong disinclination to the purchase of bonds of new works. There is a feeling of uncertainty as to the future, and this induces capitalists to stop operations till they can see more clearly the probable tendency of things. So many new elements enter into our calculations for the future, such as the amount of our foreign indebtedness, the influence of the immense call for our railroad enterprises, the receipts of gold from California, that the past is but a blind guide for future operations. The public mind is very often kept in an excited state, when there is no reason for alarm. We would advise our country friends to keep out of the market for the present. In a short time the immense amount of bonds which have been recently thrown upon the market, will gradually find their way to the holders for investment, and thus create an opening for a new supply. A few weeks we believe will witness a favorable change, of which we will give our readers timely notice. The quickest and surest way to improve the market, is to guard against overstocking it.

The rail market remains without much change. Quotations are all the way from \$41 to \$43 and 4,

according to the views of sellers in reference to the future. If a check should be given to the negotiation of bonds, it would have the effect to keep down the price of rails.

SALES OF STOCK IN NEW YORK.

	March 19. Sales.	March 26. Sales.
U. S '67 Loan.....	115½	116
Erie R.R.....	81	79½
Harlem R.R.....	68½	67½
Stonington.....	41½	41
L.I. R.R.....	23½	22½
Norwich & Wor....	63½	61½
Del. & Hudson.....	129½	129½
Reading.....	59½	54½
Morris Canal.....	18½	18½
Erie income.....	93½	92½
" " Bonds.....	103	104
Canton.....	62	62
Farmers Loan.....	63½	64

SALES OF STOCKS IN BOSTON.

	March 18.	Mar. 25.
Old Colony Railroad.....	69	68½
Boston and Maine R.R.....	104½	105½
Eastern Railroad.....	102½	103½
Fitchburg Railroad.....	111½	111½
Michigan Central Railroad.....	94½	92
Northern Railroad.....	70½	70½
Vermont Central Railroad.....	34½	34½
Vermont and Mass. R.R.....	29	28½
Western Railroad.....	105	104½
Ogdensburg Railroad.....	39	38½
Rutland Railroad.....	59	58½
Boston and Worcester Railroad.....	103½	103½
Rutland Railroad Bonds.....	88	85
Ogdensburg Railroad Bonds.....	97½	99
Vermont Central R.R. Bonds.....	92½	92
Boston and Providence R.R.....	83½	84
Philadelphia, Wilm'gton & Balt.....	30½	29½
Concord R.R.....	56	56
Manchester and Lawrence.....	90	90

To Contractors.

ENGINEER'S OFFICE CENTRAL OHIO R. R.,
Zanesville, March 20, 1851.

SEALED PROPOSALS for the Masonry of a Railroad Bridge across the Muskingum River at Zanesville, will be received at this office until the 15th of May next.

Also for the Iron or Wooden Superstructure of said Bridge, and for draw bridge across the Canal.

Plans and specifications furnished on the 1st of May next. Bidders may furnish their own plans and specifications, if filed at this office prior to that day.

By order of the Board.

ROBERT MAC LEOD,
Chief Engineer.

Memphis and Charleston Railroad.

The estimated cost of this road is \$2,800,000, the whole amount now subscribed toward the same is \$2,300,000, leaving only \$500,000 to be provided for.

Pennsylvania.

Susquehanna Railroad.—The Senate of Pennsylvania, on Friday last, passed the bill to incorporate the Susquehanna railroad, by a vote of 21 yeas to 8 nays. The bill gives power to build a road commencing at, and connecting with the York and Cumberland railroad, or with the Pennsylvania railroad, on either side of the river Susquehanna, with the right to connect the same with both or either of said railroads, and running through Millersburg, Dauphin county to Sunbury; from Sunbury to a point at or opposite Williamsport, Lycoming county, or either bank of the west branch of the Susquehanna, and to a point at or opposite the borough of Wilkesbarre, Luzerne county, on either bank of the north branch of the Susquehanna, and to connect their railroad with any railroad constructed or to be constructed in the counties through which the same may pass.

Indiana.

Central Railroad.—At the election for directors for this road (the eastern division of the Richmond and Terre Haute railroad) recently held at Centerville, the following gentlemen were elected by the stockholders:

Thomas Tyner,	John S. Mewman,
Samuel Hannah,	J. R. Mendenhall,
Williams Petty,	A. C. Blanchard,
Orlando Crane,	David Commons,
Norris Jones,	Wm. Butler,
Jas. P. Foley,	John White,
Nathan Brawford.	

M. JULES COUTIN, a gentleman connected with the Board of Public Works of France, recently arrived in this city, under a commission from the French Government, for the purpose of examining the railway system of the United States—our mode of constructing and operating these works. M. Coutin will visit every portion of the Union for the purpose of collecting statistical information having reference to railways. He leaves New York this week, on his way south.

We have had the pleasure of making the acquaintance of this gentleman, and take some pride in learning that the French Government watch with great interest the progress we are making in our magnificent lines of intercommunication. As we have no secrets connected with the management of our railroads, we hope those having charge of them, will extend to M. Coutin every facility in their power, to enable him to accomplish the object of his mission. We are now, both in extent of line completed, and in progress, the first nation in the world in railroad enterprises. We believe we may claim the same superiority as far as their usefulness, and the excellence of their management are concerned. We should respond to the compliment paid us by the older nations of Europe, in communicating every thing that has contributed to our success. We commend M. Coutin to the good offices of our railway friends.

Georgia

South Western Railroad.—The portion of the line of this road now under contract extends from Macon to Oglethorpe, a distance of 51 miles; though it is intended ultimately to be pushed to the Chattahoochee river, at Fort Gaines, probably. On the division in progress, the grading and masonry is nearly completed. The wooden superstructure for 33 miles is already laid, upon ten miles of which the iron is placed. The iron for this division has been purchased, and is being delivered along the line, and nothing now stands in the way of its early completion.

The present means of the company amount to \$567,353 44, and are derived from the following sources:—

Georgia Central railroad.....	\$250,000 00
City of Savannah.....	150,000 00
Contractors, in work and materials...	87,266 00
Individual subscriptions.....	80,087 44

\$567,352 44

One object of this road was to give an Atlantic outlet to the south western portions of Georgia, which, though one of the most fertile and productive in the State, is at present isolated from the great lines of railroad already in operation. Its productions and trade of course followed the direction of its rivers, to the gulf. On the completion of this road, the city of Savannah expects that the cotton now raised in the south western counties

will be taken to that city for exportation. If this object should be effected, a largely increased amount of freight would be thrown upon the Central railroad. Should this road be extended to the Chattahoochee, it would form a part of a great through route, from the Atlantic west, to Mobile and New Orleans. This object is likely to be speedily effected by the construction of the Muscogee railroad, extending from Columbus east, 50 miles, which is to be met by a branch of 21 miles, to be built by the South Western railroad, the means for which are already provided, as will be seen by reference to our last paper. From Columbus to the Montgomery and West Point railroad, at Opelika, the distance is only 30 miles. Surveys are now in progress between the last named points, and from the importance of this connection, it is believed it will soon be supplied. These different railroads would give a continuous line from Savannah to Montgomery and the navigable waters of the Alabama river. Should the Girard railroad, which extends from Columbus in an almost straight line to Mobile, be constructed, of which there seems now to be a strong probability, a very direct route would be formed from the Atlantic to Blakely, opposite Mobile, a distance of 526 miles. The whole amount of receipts up to the present time, (including debt to the Central railroad of \$12,168 61) have been \$581,179 13. The expenditures, (including \$32,099 50 cash on hand,) amount to the same sum. The officers for the present year are L. O. Reynolds, H. A. Chappell, of Macon; R. R. Kuyler, J. W. Anderson, Savannah; W. A. Black, Sumter county; and David Kiddo, of Randolph; F. P. Holcomb, Chief Engineer.

Indiana Railroads.

The cars are now running upon 245 miles of railroad in Indiana, and by the close of the year full 500 miles will be in operation.

The Terre Haute company have procured the T rail to lay their road to Indianapolis this season, 72 miles—the Lafayette company have sold their bonds, and purchased the heavy T rail to lay their road 66 miles—the Peru road is in operation over a good flat bar, to Noblesville, 22 miles, and is progressing north preparatory to the superstructure; this road is 66 miles in length—the Jeffersonville road is now run 15 miles, and will be completed to Columbus this season, from which place it is being constructed direct to Shelbyville, where it intersects the Knightstown road, which is to be extended through New Castle to Muncie.

The New Albany company are running cars some 30 miles to Salem, and are pushing their road forward to Gosport with much energy, from which point it is to be extended up White river to Indianapolis.

The Evansville road is progressing to Princeton, to be ultimately extended to Indianapolis by Vincennes or Gosport.

The Shelbyville road, 16 miles, the Rushville road, 20 miles, and the Knightstown road, 26 miles, are in operation over a good flat bar, and doing a fair business.

The Lawrenceburg road is to be completed to Greensburg this season, and ultimately to Indianapolis, through Shelbyville.

The Richmond, Hagerstown, and Newcastle road is being graded west of Richmond, and is to be extended west to the Bellefontaine road at Pendleton or Anderson, and ultimately to the Lafayette road, under the amended charter.

The Richmond and Indianapolis company, have

organized under their new charter, by which the Terre Haute and Richmond road is divided at Indianapolis, and elected Samuel Hannah, Esq., President of the company.

The Martinsville and Franklin road is being laid with the flat bar, and will probably be completed.

The Crawfordville company are waiting the arrival of the T rail, contracted for in England, to complete the road to Lafayette.

The Madison company are taking up the balance of the flat bar on their road, and laying the heavy T rail, preparatory to the heavy fall business that must be thrown upon the road.

The Junction road is being located from Connersville, on the direct line to Cincinnati, leaving Hamilton, Oxford and Dunlapville to the north of the line.

The Bellefontaine company are laying the heavy T rail from Pendleton to Anderson, and will extend the road to Muncie this season, and to the Ohio line the next. 28 miles of this road are in daily use, and the cars will be at Anderson early in May.

The Ohio and Mississippi company, contemplate pushing their road from Cincinnati to St. Louis, (running from Lawrenceburg to Vincennes, through our State,) as soon as possible.

The above does not comprise all the roads in Indiana, in progress and contemplated, but will suffice to give our readers some idea of what we are doing in railroad matters.—*Sentinel*.

Mississippi, March 7, 1851.

H. V. POOR, Esq., Editor of American Railroad Journal:

Sir—Can you inform a subscriber through the columns of your Journal what progress is making with the Wilmington and Manchester railroad? I am inclined to believe that a good deal of travel would be attracted to that line, and the interests of the company subserved materially by bringing it into notice before the southern travel commences. If the cars could accomplish part of the line, and good stage coaches the rest, it would soon see its profit in establishing the line. Thousands who would adopt what is called the "southern route," are deterred by the outside navigation between Charleston and Wilmington.

A very pretty speculation is now offered to capitalists by the State of Mississippi. It is known to you that a railroad is in operation from Vicksburg, on the Mississippi river, to Jackson, the seat of government. The State is now at work on a road from Jackson to the Alabama line (State-line,) having pushed the road from Jackson to Brandon, a distance of 24 miles, on which the cars run daily. She has sixty Negro men at work, grading the road eastward to the line dividing Mississippi from Alabama, and proposes to give the finished road, Negroes, cars, locomotives, etc., etc., valued at three hundred thousand dollars, to any company or association that will undertake and finish the road within five years. It is a little over two hundred miles from Brandon to Montgomery, Ala., and if this road was made, and the Wilmington and Manchester finished, the line of railroad would be perfect from your city to the Mississippi river.

The ground is most favorable, being nearly level the whole distance, and abounding in the best quality of timber for making the road and bridges, yellow pine. You perceive one great advantage this route would have over the western in the win-

er season, and the entire absence of ice and snow, to injure or obstruct the travel.

I am told the charter is a very favorable one, and the bonus of \$300,000 is certainly a handsome item to begin with.

Yours,

A. SUBSCRIBER.

The Wilmington and Manchester railroad is making good progress, with nearly the whole line prepared for the iron. A portion of this is already purchased, and arrangements are being made for the balance. The road being some 160 miles long, is no slight undertaking, and we suppose a year or more must elapse before the connection between the Wilmington and Raleigh, and the South Carolina railroads is completed.

With regard to the "Southern Railroad," we agree with our correspondent that a very good inducement is offered for the completion of the road to the Alabama State-line. By the time that the Wilmington and Manchester railroad is completed the only break to a continuous line of railroad from Maine to the Mississippi river will be the link between Montgomery and Brandon. We have long wondered that the construction of this has not attracted more attention. It is through one of the most beautiful and productive portions of the south, presenting every facility for cheap construction. Will not some of our enterprising contractors look to this matter?

New York, March 26, 1851.

H. V. POOR, Esq.,

Dear Sir—Knowing the interest you feel in the public works of Ohio, that are calculated to develop her vast mineral, as well as her agricultural wealth, I take the liberty of sending to you for publication, the following letter of Prot. Mather, in reference to the iron and coal regions of the southern part of Ohio, and the roads in progress for the purpose of making them available. To his communication, I have added a list of the iron furnaces now in blast in the neighborhood of Portsmouth, the southern terminus of the Ohio canal.

Yours truly, J. DILLE.

Columbus, Ohio, January 30, 1851.

J. DILLE, Esq.,

My Dear Sir: I received your letter some days since, requesting a sketch of the mineral and agricultural resources of the counties of Jackson, Vinton and Hocking, along the route proposed for the extension, northward from Jackson, of the Scioto and Hocking Valley railroad, and the agricultural resources of the Hocking valley generally. I have delayed answering in consequence of the pressure of other duties, and in the hope that the agricultural statistics might be examined into and made more reliable.

The route of the Scioto and Hocking Valley railroad is located and partly under contract, from Portsmouth, on the Ohio river, at the outlet of the Ohio canal, to Jackson, in the heart of the coal and iron region. There are 23 iron furnaces between Jackson and the Ohio river, that make in the aggregate 40,000 tons of pig iron annually, nearly all of which is hauled over bad roads to the Ohio river, at an expense of from \$1 to \$3 per ton.

Another railroad is under contract, the grading done for 7 miles, and the rails laid for 3 miles, leading from the new town of Ironton, on the Ohio, northward toward Jackson, and will unite with, or run parallel and contiguous to the Scioto and Hocking Valley railroad, from about 20 miles south of

Jackson, to the latter town. Both of these roads, previous to and after their junction, pass through the richest part of the coal and iron region of Ohio. From Jackson, the Scioto and Hocking Valley railroad can take two routes; one leading north-west to Richmond and Chillicothe, and thence on to Lancaster and Newark; or north by McArthurstown, and Logan, to Newark. The first of these routes leads through the choice part of the coal and iron region, about 40 miles, while the latter from Jackson leads through a country underlaid by coal and iron ore, of qualities but little inferior, at least 80 miles.

Should the Scioto and Hocking Valley railroad adopt the latter route, the Ironton railroad would probably be constructed to the Scioto Valley at Chillicothe, or unite with the Belpre and Cincinnati railroad at Richmond, 15 miles east-south-east of Chillicothe. All three of these railroads are intended to traverse, more or less extensively, the vast deposits of coal, iron ore, and other useful minerals, which require only facilities for transportation, to open inexhaustible sources of wealth to an enterprising and industrious population. So strongly do the people of Jackson county feel the importance of such facilities for rendering their mineral wealth available, that they voted by an overwhelming majority, in April, 1850, to aid the Ironton railroad company by a county subscription of \$100,000, and the Scioto and Hocking Valley railroad company; if united with the other, the subscription should be applied to their joint road in Jackson county. These two roads would transport at least 30,000 tons of iron annually, as soon as completed to the Ohio river, and northward to the central and northern parts of Ohio. These railroads would afford such facilities for transportation as to induce the construction of many more fur-

naces along its line, and within a few miles throughout the iron region, so that this business would be greatly extended all through that district. The facilities for making iron throughout the region are as great as where the furnaces are located, except the transportation, and this objection will be obviated by the railroads.

The mining and transportation of coal would be even more important item of freight than the iron. The transportation of lumber, limestone, burr mill stone, marble, fire clay, etc., would be a source of some income. Jackson county now exports 150,000 bushels of wheat, and considerable quantities of beef, pork, butter, and various agricultural products.

For details of my reasons for supposing that a railroad, if constructed, would from the present business pay good dividends, that the business would rapidly increase, that the mineral resources would soon come into a rapid process of development, that these resources are practically inexhaustible, and that the mineral region penetrated and traversed by this railroad must be the great centre of the manufacturing interests of Ohio, I must refer you to my letter to J. V. Robinson, published in the Portsmouth Inquirer April 23d, 1850; and my letters to A. B. Walker, and to W. P. Cutler, in answer to letters of inquiry upon the mineral resources, which were published in Mr. Cutler's report to the Belpre and Cincinnati railroad company in 1848.

The three letters referred to cover the ground of your inquiries, except the agricultural statistics, for which you can refer to the agricultural reports of the State board.

I have the honor to be

Your obedient servant,

W. W. MATHER.

List of Iron Furnaces in successful blast within 40 miles of the City of Portsmouth, Ohio.

IN SCIOTO, JACKSON, LAWRENCE AND GALLIA COUNTIES, OHIO.

Names of Furnaces.	Owners.	Blast.	Usual amt made in tons.	Capacity to make.
Scioto.....	Imly, Smith & Co.....	Hot.	1800	2000
Bloom.....	Adams, McKennel & Co.....	"	1800	2200
Jackson.....	R. M. Tewksbury & Co.....	"	1500	2000
Olive.....	Campbell, Peters & Co.....	Cold.	1800	2200
Ohio Clinton.....	Gliddon & Co.....	Hot.	1800	2000
Buckhorn.....	Willard, Suley & Co.....	"	2000	2500
Franklin.....	J. F. Gould & Co.....	"	2000	2500
Junior.....	Gliddon & Co.....	"	2000	2500
Empire.....	"	"	2000	3000
Centre.....	C. B. Hamilton & Co.....	"	2000	2500
Union.....	Linton & Means.....	"	2000	2500
Ohio.....	"	"	2000	2500
Vesuvius.....	Dimpsey, Rogers & Co.....	"	1500	1800
Mt. Vernon.....	Campbell, Ellison & Co.....	"	2000	2500
Etna.....	Dempsey, Rogers & Co.....	"	2000	2500
Pine Grove.....	Hamilton, Peebles & Co.....	Hot.	2000	2500
Lawrence.....	Culbertson, Means & Co.....	"	2000	2500
Hecla.....	Henry Blake & Co.....	Cold.	2000	2500
Keystone.....	Green, Griswold & Co.....	"	1500	2200
Lagrange.....	Chestnutwood & Hazlett.....	Hot or cold.	1500	2000
Gallia.....	Bently, Thompson & Co.....	Cold.	1800	2000
IN LEWIS, GREENE AND CENTRE COUNTIES, KENTUCKY.				
New Hampshire.....	Powell, Andre & Co.....	Hot.	1500	2000
Raccoon.....	Hollister, Ross & Co.....	Hot or cold.	1800	2200
Lawrel.....	Wurts & Brother.....	"	1800	2200
Greenup.....	Wilson, Culbertson & Co.....	Hot.	1500	1800
Pennsylvania.....	Wm. Patten & Co.....	"	1500	2000
Buena Vista.....	H. W. Means & Co.....	"	1500	2000
Star.....	Lampton, McCollough & Co.....	"	1500	1800
Carolein.....	Wurts & Farell.....	Cold.	1500	1800
Amanda.....	Paul & Jones.....	"	1500	1800
Bellefonte.....	Wm. D. Pogur.....	"	1500	1800
Ky. Clinton.....	Wm. Patterson & Co.....	"	1500	2000
Sandy.....	Patten, Gilruth & Co.....	"	1200	1500
Mt. Savage.....	R. M. Biggs.....	"	2000	2500

Indiana.

Wabash Valley—Another Railroad Project.—A large meeting was held in Rochester, Fulton county, Ind., on the 22d ult., to take into consideration the feasibility of constructing a railroad from Peru or Logansport, Ind., to South Bend or La Porte.—The following resolutions, among others, were adopted:

Resolved, That the construction of a railroad from Peru to Logansport, to intersect the Northern Indiana railroad, at either South Bend or La Porte, and making Rochester and Plymouth points, is entirely practicable.

Resolved, That we believe that a road constructed on this route would be second to none in the State, either in the transportation of freight, or as a line of travel, as it would pass through the best portion of our State, from the Wabash river to the lake, a great portion of which would run on or near the Michigan road, which is universally known to be the great thoroughfare from northern to southern Indiana: and that the immense amount of travel on said road, as it now is, demands a more comfortable and expeditious mode of conveyance.


A committee was appointed to correspond with the neighboring counties, and to take such other steps as they might deem advisable to secure the end sought for.

Mobile and Ohio Railroad.

The agent appointed by the Governor of Alabama to select and locate the lands in that state appropriated for the Mobile and Ohio railroad, has completed that duty. About two hundred and fifty-three thousand four hundred and forty acres, or three hundred and ninety-six sections, have been selected. Most of the selected lands lie contiguously to the waters of Mobile bay. The lands are said to be worth an average of \$3 per acre. The amount which they will yield, it is estimated, will be sufficient to build that section of the road which runs through Alabama.—The grant to the road in Alabama, and other States through which the road will pass, amounts to two millions of acres.

European and North American Railway.

We learn that the Legislature of New Brunswick have passed the Railway Facility Bill, which grants assistance to the amount of \$1,250,000 towards the construction of the European and North American railway.

 The Schuylkill Navigation company give notice that the canal will be open for navigation, through to Pottsville, on the 25th inst.

New York.

Albany and Susquehanna Railroad.—The subject of constructing a railroad from Albany to Binghamp, following the valley of the Susquehanna, is now attracting a good deal of attention among those immediately interested in this object. The distance between the two places is 130 miles. The route is a remarkably direct and favorable one, and the road can be built at a very low cost. It will run through a beautiful farming district, that at the present time has very few facilities for getting to a market. It will open a very direct communication between Albany and the roads terminating at that point, and the Erie railroad; and what is of still greater importance, it will bring that city and Northern and Eastern New York into direct connection with the coal fields of Pennsylvania. A large amount, it is said, can be raised for this road, along its line, and it will receive a warm support from the city of Albany. A convention is to be held at Oneonta, in Otsego county, on the 2d proximo, at which a large number of the representatives of the Massachusetts railroads, and

those of Northern New York, are expected to be present.

European and North American Railway.

We give below a portion of a memorial of this company, for building the Maine portion of this road, presented through their committee, consisting of John A. Poor, E. L. Hamlin, and A. G. Chandler, Esq., to the Massachusetts Legislature, for aid by appropriations of proceeds of public land of the latter, situated in Maine. At the time of the separation in 1820, the lands falling to the share of Massachusetts, amounted to 4,308,379 acres, from which she has already received the sum of \$1,998,226 55, and there still belongs to that State 1,834,547 acres.

The petition for aid is based in part upon the effect that the proposed road would have in increasing the value of the land unsold; but more especially upon the influence which the road would have upon the business of Boston, in developing the resources of the territory lying to the east of that city. As a competitor for the southern and western trade, Boston must always yield to the superior advantages of New York. The former can never expect much trade south or west of the Hudson river. All her efforts to draw to herself trade beyond this natural channel have failed, except so far as her own products are concerned; and for these, New York is rapidly becoming the point of distribution. But as she now occupies the most northerly position of the great Atlantic cities, all the territory that lies to the north and east, is the appropriate field for her to cultivate, and here is a field limitless in extent, and in resources. The more advantageous position of New York for foreign commerce has made that city the great depot for ocean steamers, of which Boston in the outset enjoyed the monopoly. By the European and North American railway she can again place herself on the great line of communication between the old world and the new, and again stand ahead of New York in the receipt of foreign intelligence. On the east there is a vast and undeveloped country, with resources as great as are presented by any portion of the United States of equal extent. This field has, therefore, been entirely neglected. Boston has now accomplished all in her power to attract to herself the trade of New England. Every mile of road now constructed west of her is a New York rather than a Boston road; but in the opposite direction she is without a rival. Whatever she develops in that quarter, she secures.

The influence of railroads in promoting the growth of Massachusetts, and the necessity that now exists for turning the attention of her people in a new direction, is well set out in the subjoined extract:—

From the time of the separation till the year 1835, the progress of Maine in business and wealth was equal to that of the other portions of New England generally, and in population the growth of Maine was about equal to that of the whole country, and vastly greater than that of Massachusetts. Our valuable water-power, the superior quality of our soil, our immense tracts of valuable timber, the enormous safe and accessible harbors upon our coast, and the cheap price of land, with many valuable mineral resources, and above all, the salubrity and healthfulness of our climate, invited emigration of the most valuable class of persons from all parts of New England, including many from Massachusetts.

The year 1835 was the turning point in the history of New England. Massachusetts opened three of her great lines of railway, reaching in that year to Providence, to Worcester, and to Lowell; and

the railway system of Massachusetts became firmly implanted upon her soil. Industry was quickened thereby, enterprise stimulated, and the price of labor enhanced. The tide of emigration throughout all New England was immediately turned upon Massachusetts. The sagacious industry of Massachusetts wielding this great agency, the railway, with a bolder and more intelligent grasp, than any other people, changed as by a magic power the whole history of the continent.

The financial and commercial revulsion which swept over Maine, and most other parts of the Union, with such disastrous consequences, from 1835 to 1840, was scarcely felt in Boston or in Massachusetts, except by indirect results, from losses by debt. The price of real estate, the great criterion of value, was but slightly affected in Massachusetts, while in every portion of Maine it fell to a merely nominal value, and to this day, the price of real estate throughout Maine, with but few exceptions, and these exceptions manufacturing or trading towns, is not greater than it was prior to the speculations of 1835.

The census of 1850 disclosed to the people of Maine the astounding fact, that Massachusetts from 1840 to 1850, increased at the rate of 34 8-10 per cent., showing a density of population equal to 132 persons to the square mile, while the State of Maine had only increased at the rate of 16 6-10 per cent., and contains a population of only 17 8-10 persons to the square mile. The results of the census of 1850 were not generally anticipated by our own people, though many had perceived the silent but gradual withdrawal of much of the wealth and business talent off Maine to Massachusetts, while there was also a strong tendency among the farming interest to emigrate west, and that the agricultural portions of our state were making very little if any progress, and some of them were diminishing in population.

The rapid growth of every portion of Massachusetts for the last fifteen years, has given an increased value to all fixed property within the State, which increase of value has given still greater development to the industrial energies of her whole people, the fruits of which are now seen in the railways which cover the State as with a net-work, in her improved agriculture, and in her factories and her workshops, which make every valley resound with the hum of her industry.

Efforts have been made within the last few years, in Maine, to introduce railways, and in other respects to imitate in some measure the policy of Massachusetts. A system of railways has been entered upon which promise the most satisfactory results, the value and importance of which are by no means confined to the limits of the State.

Some of the railways of Maine, in which little if any Massachusetts capital is embarked, are, as we believe, of paramount value and importance to Massachusetts. This will be admitted by any one who thoroughly appreciates the intimate business relations of the two states. That the interests of the two states are most intimately connected, are clearly seen by any one who is in the habit of considering their geographical and commercial relations, and the position of Maine in reference to the residue of the country.

The value of a central position is equally apparent in relation to the laws of trade, as in reference to social and political advantages. The great heart of commerce, and the seat of political power on this continent at the present time, lie to the south and west of Massachusetts. Every year shows more and more closely the absorbing influence of a great commercial capital over superior industry, greater forecast, and more frugal economy in the habits of the people.

Over twenty years ago, Boston was led to perceive that New York was beginning to draw from her business, consequent upon its rapid growth after the opening of the Erie Canal. The industrial policy of Massachusetts then wisely entered upon, was the only means within her reach, to retain her relative position.

Her success is seen in the more rapid growth of Massachusetts over that of the State of New York, from 1840 to 1850. That of Massachusetts being equal to 34 8-10 per cent., while New York has grown at the rate of 27 per cent. only, upon the population of 1840.

The great competition with Massachusetts industry, however, is from her more southern neighbors, and the commercial supremacy of New York, naturally attracts to it, trade which formerly was confined to Boston.

The railway avenues extending from New York city northward, will soon connect with and cross many of the lines extending from Boston westward, upon which—more easy gradients are found running to New York, than can be obtained in ascending from the Connecticut valley to Boston,—the trade of Vermont and portions of Massachusetts and New Hampshire, will naturally flow to the largest market.

Competition is daily becoming more and more active between New York and Boston. The opening of the New York and New Haven railroad gave a greater impulse to the business of New York than any event of the last fifteen years. The extension of the Hudson River railroad to Albany and Troy, and the completion of the Harlem railroad to a point of intersection with the Albany and West Stockbridge railroad will offer a stronger competition to the western railroad than it has yet encountered, already great, as is shown by the diminished quantity of produce brought over it the last year.

Every merchant and business man of Boston is aware of the fact, that a very large portion of the business of that metropolis comes from the State of Maine, an amount far greater than the community generally suppose. In confirmation of the truth of this statement we confidently refer to the merchants of Boston and to the public records of the national and state government. Of the 7004 vessels which entered Boston harbor in the year 1847, 2594 were from Maine. Four tenths of the entire travel which enters the city of Boston over her seven trunk lines of railway, pass over the two roads running from Boston into Maine.

The returns for 1847 of the bills redeemed at the Suffolk Bank, will show that over thirteen millions of the Maine banks were redeemed in Boston in that year, and it is believed that those of 1850 will show a still greater amount.

Other illustrations equally suggestive might be given, all tending to show the immense trade between Maine and Massachusetts.

The people of Maine consume more largely of the manufactures of Massachusetts than any other population of equal numbers.

Is it not for the interest of Boston, therefore, to build up and foster industry in Maine, in preference to the Connecticut valley or the country lying west of it? The trade of Maine naturally falls to Boston, and must pass by Boston, if it seeks the great market south.

The inevitable laws of trade resulting from the geographical position of Maine, make her prosperity and that of Massachusetts closely connected, if not identical.

Any line of railway that throws business and travel east of Boston contributes directly to her trade and business. More or less of this trade and business reach Boston, or pass through it going to New York. As well might the intelligent stranger pass through your capitol without noticing its lofty columns and its symmetrical architecture, as the intelligent business man pass through your city without being instinctively led to trade with a community, so renowned for thrift and successful enterprise, as the merchants of Boston. Intercourse begets traffic, as naturally as exercise imparts strength to the body, and so long as the laws of nature remain unchanged, the trade of Maine can never seek New York or a more southern market without giving to Massachusetts the first offer of her trade and her business.

No intelligent mind can doubt the ability of Maine to sustain a population as dense as that of the agricultural and manufacturing portions of Massachusetts, under the influence of similar laws and like habits of business, with an amount of capital engaged in productive industry in the same ratio to the population. This would give Maine, with 32,268 square miles of territory, a population exceeding four millions of people.

It seems apparent to us, therefore, that Massachusetts has the most direct interest to give encouragement to every enterprise calculated to advance the prosperity of Maine, aside from the great interests in her public lands.

Among the important enterprises of the day, and one of equal importance to Massachusetts, as to Maine, is the plan of the European and North American railway. It is proposed to extend across the entire breadth of this state, in continuation of the lines already built or in process of construction, a line of railway over the most direct and practicable route from the city of Boston to St. John's and Halifax.

Without claiming for this line any advantages commonly ascribed to it, as the means of shortening the time of passage between New York and London, thereby attracting over it the great stream of European travel, it is enough to say that it is proposed to extend a line of railway through a region of country rich in every natural advantage, forests, soil, climate and mineral wealth,—over a route the most direct and practicable that can be ascertained, irrespective of intermediate localities, remove from water communication, giving it perfect immunity from all competition forever, by securing the most direct possible line, between the great centres of population and business.

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March 18, 1851. 3m*

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Gay, Edward F.,

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Gilbert, Wm. B.,

Rutland and Burlington Railroad, Rutland, Vt.

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Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention.

J. F. WINSLOW, President
Troy, N. Y.
ERASTUS CORNING, Albany
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md

November 6, 1848.

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phoenix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehanna river; which two establishments are now turning out upwards of 1800 tons of finished rails per month.

Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.

REEVES, BUCK & CO.
45 North Water St. Philadelphia.

March 15, 1849

LAP—WELDED WROUGHT IRON TUBES

FOR

TUBULAR BOILERS,

FROM ONE AND A QUARTER TO SEVEN INCHES IN DIAMETER.

THE ONLY Tubes of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER & SON, Patentees,
28 Platt street, New York.

Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron.

THOMAS B. SANDS & CO.,
73 New street,
New York.

February 3, 1849.

Iron Store.

THE Subscribers, having the selling agency of the following named Rolling Mills, viz: Norristown, Rough and Ready, Kensington, Triadelphia, Pottsgrove and Thorndale, can supply Railroad Companies, Merchants and others, at the wholesale mill prices for bars of all sizes, sheets cut to order as large as 58 in. diameter; Railroad Iron, domestic and foreign; Locomotive tire welded to given size; Chairs and Spikes; Iron for shafting, locomotive and general machinery purposes; Cast, Shear, Blister and Spring Steel; Boiler rivets; Copper; Pig iron, etc., etc.

MORRIS, JONES & CO.,
Iron Merchants,

Schuylkill 7th and Market Sts., Philadelphia.
August 16, 1849. 1y33

Glendon Refined Iron.

Round Iron, Band Iron, Hoop Iron,
Square " Flat " Scroll "

Axles, Locomotive Tyres,
Manufactured at the Glendon Mills, East Boston, for sale by
GEORGE GARDNER & CO.,
5 Liberty Square, Boston, Mass.
Sept. 15, 1849. 3m37

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for rail roads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.

JOHN F. WINSLOW, Agent.
Albany Iron and Nail Works, Troy, N. Y.
The above Spikes may be had at factory prices, of Erastus Corning & Co Albany; Meritt & Co., New York; E. Pratt & Br., Baltimore, Md

Bowling Iron. Stamped B.O.

Railway Tire Bars Rivet Iron
Locomotive and other Axles Locomotive Frame do
Boiler Plates Bars,
and every other description of this superior Iron.

The subscribers, agents for the sale of Bowling Iron, are prepared to execute orders for importation, especially for railway and machinery uses, with despatch from the manufacturers.

RAYMOND & FULLERTON, 45 Cliff st.

**Ibbotson, Brothers & Co's
CELEBRATED CAST STEEL**

AND

Best Cast Steel Royal Improved Files, well known as better adapted for Engineers' and Machinists' purposes than any now in use in the United States.

Every description of Square, Octagon, Flat and Round Cast Steel, Sheet, Shovel and Railway Spring Steel, etc., and Steel to order for any purposes—manufactured at their works in Sheffield—and universally known by the old stamp "Globe."

HENRY I. IBBOTSON, Agent,
218 Pearl st., New York.

**Smith & Tyson,,
IRON COMMISSION MERCHANTS,
BALTIMORE.**

REFINED Juniata Charcoal Billet Iron for Wire. Do. for Bridging, of great strength.
Flat Rock, Boiler and Flue Iron, rolled to pattern.
Elba, Wheel Iron of great strength and superior chilling properties. *Elba* Forge Iron, American Shot Iron, Cut Nails, Spikes and Brads, Nail and Spike rods, Railroad Spikes of superior quality, Wrought Chair plates of any pattern, punched or plain.

**WILLIAM JESSOP & SONS'
CELEBRATED CAST-STEEL.**

The subscribers have on hand, and are constantly receiving from their manufactory,

PARK WORKS, SHEFFIELD,

Double Refined Cast Steel—square, flat and octagon. Best warranted Cast Steel—square, flat and octagon. Best double and single Shear Steel—warranted. Machinery Steel—round.

Best and 2d gy. Sheet Steel—for saws and other purposes.

German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.

Genuine "Sykes," I. Blister Steel.

Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by

WM. JESSOP & SONS,
91 John street, New York.

Also by their Agents—

Curtis & Hand, 47 Commerce street, Philadelphia.

Alex'r Fullerton & Co., 119 Milk street, Boston.

Stickney & Beatty, South Charles street, Baltimore.

May 6, 1848.

Railroad Iron.

B. O. Railway Tires, Railway Wheels,
Scotch Pig Iron, Tin Plates and Banca Tin,
Muntz's Patent Metal Sheathing,
Baltimore Copper.

Contracts for Rails made on behalf of the manufacturers, for delivery at any ports in the United States, at fixed prices.

Bowling Tires and Tire Bars and Scotch Pigs imported to order.

Muntz's Ship-sheathing, and a general stock of Tin Plates and Banca Tin in store, and for sale by

RAYMOND & FULLERTON, 45 Cliff st.

IRONDALE PIG METAL, MANUFACTURED
and for sale by the Bloomsburg Railroad Iron Co.
LINDLEY FISHER, Treasurer.
75 N. Water St., Philadelphia.

**Faggotted Car and Engine
Axles**

FORGED by RANSTEAD, DEARBORN & Co.,
Boston, Mass.

These Axles enjoy the highest reputation for excellence, and are all warranted.

Railroad Iron.

3,000 TONS C. L. MAKE 63½ lbs. per yard, now landing and to arrive.

Also contracts made for future delivery of above superior make English Iron.

300 Tons Banks Best Iron, Round, Square and Flat.

200 " English Bar " "

10 " 9-15 Square Iron for Railroad Spikes.

For sale in lots to suit purchasers by

DAVID W. WETMORE.

New York, March 26, 1850.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

**JOHNSON, CAMMELL & Co's
Celebrated Cast Steel,**

AND

ENGINEERING AND MACHINE FILES, which for quality and adaptation to mechanical uses, have been proved superior to any in the United States. Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cyclops Steel Works Sheffield.

JOHNSON, CAMMELL & CO.,
100 William St., New York.

November 23 1849.

Bowling Tire Bars.

40 Best Flange Bars 5½x2 inches, 11 feet long.
40 " " 5½x2 " 7 feet 8 in. long.
40 " Flat " 6x2 " 11 feet long.
40 " " 6x2 " 7 feet 8 in. long.

Now in store and for sale by

RAYMOND & FULLERTON,
45 Cliff street.

**Wheel, Forge and Foundry
Iron.**

LOCUST GROVE Wheel Iron of great strength and superior chilling property.

Balt. Charcoal Forge Iron, from Patuxent, Curtis Creek and Gunpowder furnaces.

Elkridge Foundry Iron, of superior strength and softness. Antiracite and Charcoal Iron from Pennsylvania and Virginia. Gas and Water Pipes, Lamp Posts from Elkridge furnace.

LEMMON & GLENN,
62 Buchanan's Wharf, Baltimore.

Railroad Iron.

1650 Tons, weighing about 61 lbs. per yard, 40 tons, weighing about 52 lbs. per yard, and 825 tons, weighing about 53½ lbs. per yard, of the latest and most approved patterns of T rail, for sale by

BOORMAN, JOHNSTON & CO.,
119 Greenwich street.

New York, Aug. 26, 1850.

N.B.—B. J. & Co. are also prepared to take contracts for English rails, delivered in any of the Atlantic ports of the United States.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract to deliver Rails of superior quality, and of any size or pattern, to any ports of discharge in the United States.

COLLINS, VOSE & CO.,
74 South St.

New York, June 1, 1850.

Tredegar Iron Works.

ROLLING MILL FOUNDRY AND MACHINE SHOPS. The undersigned continues to manufacture at his Works in this city (from best charcoal metal) Bar Iron of every description, embracing—

Rounds and Squares, from ½ to 5 inches diameter. Flats, from ½ to 7 inches, all thicknesses. Bands and Scrolls, all sizes. Boiler plate and Plough Iron. Railroad and Locomotive Axles and Tires. Locomotive Frames, Spikes and Plates. Hoops, Ovals, Half Ovals, Half Rounds, Angle, T, L, and indeed every description of Iron usually manufactured, all of which he warrants to be equal to any made in this country.

He also manufactures at his Foundry and Machine Shops all descriptions of Railroad Work, say, Locomotives, Railroad Wheels and Axles complete and ready for the road, Railroad Chairs, etc. Also, Marine and Stationary Engines all sizes, Sugar mills and Engines, Horse mills, and every kind of Machinery usually required for the operations of the country. He has paid particular attention to getting up machinery, etc., for Gold Mine operations, and those in want of such work might find it to their advantage to give him a call.

J. R. ANDERSON.
Richmond, Va., Sept. 10, 1850.

CUT NAILS OF BEST QUALITY, BAR IRON (including Flat Rails) manufactured and for sale by

FISHER, MORGAN & CO.,
75 N. Water St., Philadelphia.

Car Wheel Iron.

100 Tons "Columbia" No. 2 Cold Blast Charcoal Iron.

300 Tons "Salisbury" No. 1, do. do.

For sale by CHARLES T. GILBERT,
No. 80 Broad st.

New York, Sept. 21, 1850.

Railroad Spikes.

THE subscribers are prepared to make and execute contracts for Railroad Spikes of a superior quality, manufactured by the New Jersey Iron Company, at Boonton.

DUDLEY B. FULLER & CO.
139 Greenwich st. corner of Cedar.

**S. S. Keyser & Co.,
IRON WAREHOUSE,**

Corner of South and Pratt Streets,
BALTIMORE, MD.

Selling Agents for the Rough and Ready Bar Iron and Elk Boiler and Flue Iron Rolling Mills, Sarah and Taylor Furnaces, and Wrightsville Hollow Ware Foundry, and Dealers in Bar and Sheet Iron, and Cast, Sheer, German, Blister, Spring and Electroplated Steel, etc., etc.

Tubes.

The undersigned are in direct communication with the Birmingham Patent Lap Welded Iron Tube Company, for the sale of their very excellent and superior Boiler and Gas Tubes in large or small quantities.—These Tubes are sold very extensively in England and on the continent of Europe are sold exclusively by

WM. BIRD & CO.,
Iron and Tinplate Merchants,
44 Wall st., New York
5 Martin's Lane, City, London,
and 140 Buchanan st., Glasgow.

Railroad Spikes, Boiler Rivets, etc.

THE Subscribers, Agents for the sale of James S. Spencer's, Jr., Railroad and Boat Spikes, Boiler Rivets, and Wrought Iron Chairs for Railroads, made at his Works near this city, will execute all orders with promptness, despatch, and of the best quality.

ALSO IMPORTERS of English refined and Merchant bar iron; Extra refined Car and Locomotive Axles (from 3½ to 6½ inches in diameter); B. O. Locomotive Tire (welded by Baldwin). Also, supply Boiler and Flue Iron cut to pattern or otherwise.—Spring, Shear, and Cast Steel, etc., etc., etc.

T. & E. GEORGE.

Philadelphia, November 14, 1850.

Railroad Iron.

THE UNDERSIGNED, HAVING made arrangements abroad, are prepared to contract for the delivery of Foreign rails, of approved brands upon the most favorable terms.

They will also make contracts for American rails, made at their Trenton works, from Andover Iron, in whole or in part, as may be agreed upon.

They are prepared to furnish Telegraph, Spring and Market Wire; Braziers and Wire Rods; Rivets and Merchant Bars to order, all made exclusively from Andover Iron. The attention of parties who require iron of the very best quality for special purposes, is respectfully invited.

COOPER & HEWITT,
17 Burling Slip, New York.

February 15, 1850.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract for the delivery of English, Welsh and Scotch Rails, of any pattern and weight, also for every description of English, Welsh, Scotch, and Swedish Iron, Railway Chairs and Spikes, Rivets, Bolts, Nuts, Washers, Chain Cables, Anchors, Tin Plates, German Spelter, Iron Castings, and every description of Machinery.

WILLIAM BIRD & CO.,
Iron and Tin Plate Merchants,
44 Wall st., New York.

And at 5 Martin's Lane, City, London,
and 140 Buchanan st., Glasgow.

July 27th, 1850.

Railroad Iron.

THE "Montour Iron Company" is prepared to execute orders for Rails of the usual patterns and weights, and of any required length not exceeding 30 feet per rail. Apply at the office of the Company, No. 73 South 4th st., Philadelphia.

Or to the Agents,
CHOUTEAU, MERLE & SANFORD,
NO. 51 New st., New York.

September, 1850.

Railway Iron.

THE Subscribers will contract to deliver, in the course of the ensuing Spring and Summer, the best English Rails, made by a particular specification, and of any pattern required.

DAVIS, BROOKS & CO.,
68 Broad st.

On hand for sale, English rails of 53 lbs. to the yard, made by particular specifications.
January 10, 1851. 2m

Railroad Iron for Sale.

THE Mansfield and Sandusky City Railroad Co. have on hand from twelve to fifteen hundred tons of American Flat Bar Railroad Iron, weighing 38 lbs. to the lineal yard, which they offer for sale at reasonable rates.

The iron has been in use about four years, and is sound and in good condition. It is 2½ by ½.

It will be ready for delivery at short intervals between the opening of navigation in the spring and the 1st September next.

For further particulars inquire at the office of the company at Sandusky City, Ohio.

C. G. FORBES, President.

December 24, 1850.

American Railroad Iron.

1000 Tons, weighing 50 lbs. per yard, manufactured by Reeves, Abbott & Co., at the Safe Harbor Iron Works, and now lying in yard at Brooklyn, for sale by

CHOUTEAU, MERLE & SANFORD,
No. 51 New street.

Spikes, Spikes, Spikes.

ANY person wishing a simple and effective Spike Machine, or a number of them, may be supplied by addressing
J. W. FLACK,
Troy, N. Y.
March 6, 1850.

Railroad Iron.

2000 Tons, weighing 55 pounds per lineal yard, of the most approved pattern of T rails, in store and to arrive, for sale by

COLLINS, VOSE & CO.,
74 South St.

New York, June 1, 1850.

Railroad Spikes, Wrought Chairs and Fastenings.

THE subscribers continue to manufacture, with increased facilities, Hook and Flat Head Railroad Spikes and Chairs. The points being finished by HAND, have a long taper, and sharp point, and are much superior to those made entirely by machinery.

We are also prepared to furnish Wrought Chairs, Clamps and Fastenings of every description, either punched or plain. The best quality of refined iron is used in the above articles, and our prices will be made as favorable as any in the country.

The patent Clinch Spike will be found an improvement to secure the rail at the joints. They drive in the manner shown and are not liable to work loose.

All communications, addressed to the undersigned, will meet with prompt attention.

SMITH & TYSON,
No. 25 South Charles st., Baltimore Md.

India-rubber for Railroad Cos.

RUBBER SPRINGS—Bearing and Puller—Fuller's Patent—Hose from 1 to 12" diameter Suction Hose. Steam Packing—from 1-16 to 2 in thick. Rubber and Gutta Percha Bands. These articles are all warranted to give satisfaction, made under Tyer & Helm's patent, issued January, 1849. No lead used in the composition. Will stand much higher heat than that called "Goodyear's," and is in all respects better than any in use. Proprietors of railroads do not be overcharged by pretenders.

HORACE H. DAY,
Warehouse 23 Courtlandt street
New York, May 21, 1849.

UNION WORKS,

North street, opposite the Railroad Depot,
BALTIMORE.

Poole & Hunt,

Manufacturers of Steam Engines and Mill Gearing, Machinists' Tools, and all kinds of heavy and light Machinery.

Also put up Arrangements of Wrought Iron Pipes for heating buildings and conveying steam or water. Castings of every kind furnished at short notice.

Every exertion will be made to insure the satisfaction of customers.

Great Work on Bridge Building, etc., etc.

JUST published in medium folio, One Dollar, 75 cts. to subscribers.

Part IV of a "THEORETICAL AND PRACTICAL TREATISE ON THE CONSTRUCTION OF BRIDGES IN STONE, IRON AND WOOD." Including the Equilibrium of Arches, the mathematical principles of the Oblique Arch, Suspension Arch, etc., etc. Construction of Foundations in Water, Centering, Oblique Arches, etc., the application of Iron to Railroad Structures, Practical Tunnelling, Suspension Bridges, etc.: illustrated by numerous accurately executed Plans, Elevations, Sections and Details of Stone, Iron and Wood Bridges, Viaducts, Tunnels, Culverts, Machines, etc., constructed by the most eminent Architects and Engineers in Europe and the United States, and numerous Original Designs for Bridges, Viaducts, Culverts, etc. The whole calculated to meet the exigencies of Engineers, and assist Draughtsmen, Bridge Builders, Mechanics and Students. By George Duggan, Architect and Civil Engineer.

The present part contains beautifully executed plans, elevations, sections, and details of the Iron Lattice Bridge 140 feet span over the canal in the suburbs of Dublin on the line of the Dublin and Drogheda R.R., Plans, elevations and sections of the Timber Bridge over the Schuylkill, at Market st., Philadelphia, with Arches 160 and 190 feet span. Plans, elevations and sections of a Timber Bridge with Arches 155 and 200 feet span over the Delaware. Also, plans, elevations, sections and details of Lattice and Frame Wood Bridges, explanatory of Nathaniel Towns and Colonel S. H. Long's methods of constructing Bridges of Wood, with the continuation of the Articles on Cofferdams, Concrete, Limes, Mortars, Cements, etc.

Published by George Duggan, 300 Broadway, New York, to whom all communications should be addressed and subscriptions forwarded.

Parties remitting Mr. Duggan \$5. and the remainder \$4 when they have been supplied with the first six parts of the "Theoretical and Practical Treatise on Bridge Building, etc., etc." shall receive it monthly as published. To those making Mr. Duggan a present remittance of \$9, the work will be forwarded post free to any part of the United States.

Great American Engineering

AND MECHANICAL WORK, just published in medium folio One Dollar, 75 cts. to Subscribers.

Part X. of "Specimens of the Stone, Iron & Wood Bridges Viaducts, Tunnels, Culverts, &c., &c., of the United States Railroads." By George Duggan, Architect and Civil Engineer.

The present part contains beautifully executed plans, elevations, and sections of the Timber Bridge with Arches 136 feet span, over the Mohawk river, on the line of the Utica and Schenectady R.R. Plans elevations, sections and isometrical views of Timber Piers 100 feet high. a Timber Bridge of 55 feet span, and Ice Breakers, on the line of the Little Schuylkill and Susquehanna R.R.

Also plans, elevations, sections, isometrical views and details of an Iron Bridge 356 feet long, with Arches 81 feet span, erected by the N. York Iron Bridge Co. over Moore's Creek, on the line of the Virginia Central R.R., and plans, elevations and sections of an Iron Plank Road Bridge 160 feet span, erected over Buffalo creek by the same company, with a description of Col. Long's method of constructing Bridges in Iron, and an explanation of the causes that led to the failure of the Iron Bridge 60 feet span, near Lackawaxen, on the line of the New York and Erie R. R., at midday, on the 31st July last, by which several lives were lost, and a great amount of property destroyed.

Published by GEORGE DUGGAN,
300 Broadway, New York.

To whom all communications should be addressed and subscriptions forwarded.

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.

August, 16, 1849.

6m33

For Sale.

TWO Locomotive Engines—10½ tons weight, built by Baldwin. Also Four Eight-wheeled Passenger Cars, with side seats, all in good running order. Apply to

WM. E. MORRIS,

Office of Philad., Germantown & Norristown Railroad Co., 9th and Green sts., Philadelphia. 3m5

TO RAILROAD COMPANIES, CAR MANUFACTURERS, etc.

THE Undersigned hereby gives public notice, that the Commissioner of Patents, pursuant to his decision in relation thereto, on the 8th day of October, 1850, issued to him a Patent for the sole right to manufacture, and exclusive use of the INDIA RUBBER CAR SPRING, on account of priority of invention of said Spring.

F. M. RAY

New York, Oct. 23, 1850.

Iron Trade of Pennsylvania.

DOCUMENTS and Statistics relating to the Manufacture of Iron in the State of Pennsylvania—giving a history of the manufacture from its commencement to this date, illustrated by diagrams. Also tables giving the address and capacity of every establishment in the State. Prepared by direction of the late convention of the trade held in Philadelphia. For sale by

LINDSAY & BLACKISTON, Philadelphia.

FIELDING LUCUS, Jr., Baltimore.

HENRY G. NICHOLS, 79 Water st., N. Y.

or at this office—price \$1 00.

It will be sent by mail to any order enclosing the money, and post paid.

Ulster Iron.

THE ULSTER IRON WORKS, Saugerties, N. Y., continue in full operation. Orders for round, square, flat, band, hoop and scroll iron, will be received and promptly executed by

J. & L. TUCKERMAN,
69 West St., New York.

Patent Machine Picket Fence

SIX DIFFERENT STYLES of this fence are now made by patent machinery; and is by far the most economical fence for Railroads, Farms, Yards, etc., ever yet offered to the public, costing only from 4 to 30 cents per foot, according to pattern; and is so put up as to be shipped at a trifling expense. Full particulars will be furnished, by addressing the subscriber, to whom all orders should be sent.

N. STRATTON, Troy, N. Y.

Providence Tool Co.,

MANUFACTURERS OF

Plane Irons, Tooth Irons, Soft Moulding and Rabbit Irons, Cornice Irons, Plow Bits, and Planing Machine Knives:

NUTS, WASHERS AND BOLTS.

—ALSO—

PLATE HINGES AND PICK AXES.

They are prepared to execute orders for all descriptions of Cold Punching and Job Work.

WM. FIELD, Agent. RUFUS WATERMAN, Treas.
PROVIDENCE, R. I.

Lovegrove's Patent Cast Iron Water and Gas Pipes.

THE Subscriber, the Inventor and Patentee of the Centrifugal mode of giving form to metallic substances while in a molten state, is preparing to make Cast Iron Water and Gas Pipes, of any dimensions, at prices much lower than they can be made in the old manner, and the pipes warranted to stand a pressure of three hundred pounds to the square inch, and to be soft enough to drill. Steam Engines and all kinds of machinery. Cast Iron Doors and Frames, and Mill Castings of every description, made to order.

THOMAS J. LOVEGROVE,

Machinist and Founder,

West Falls Avenue, below Pratt st., Baltimore.

Patent Metallic Measuring Tapes.

A New Article, made from Vegetable and Mineral substances combined, entirely free from the objections made to all other tapes, arising from contraction and elongation in consequence of atmospheric changes. Fine wires, of a material not affected by dampness or dryness, are woven into the warp of the Patent Tape, rendering it not subject to variations in length, like all other tapes heretofore manufactured. Instead of being merely painted, it is immersed in a peculiar solution of gums, and the fibres being solidly compacted together, it acquires substance and strength presented by no other article. They are enclosed in patent cases, superior to all others in lightness, strength and durability.

Imported and for sale only—together with every description of Drawing and Profile Paper, Tracing Paper in rolls, Vellum or Tracing Cloth, Field Books, Mouth Glue, and a general assortment of Engineer's materials—by J. WILLARD FELT,
Importer of Stationery, 191 Pearl st., N. Y.

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phoenixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll sounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y.

P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery for making Spikes, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

CHILLED RAILROAD WHEELS.—THE UNDERSIGNED are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

Brown's Old Established SCALE WARE HOUSE,
NO. 234 WATER ST., NEW YORK.

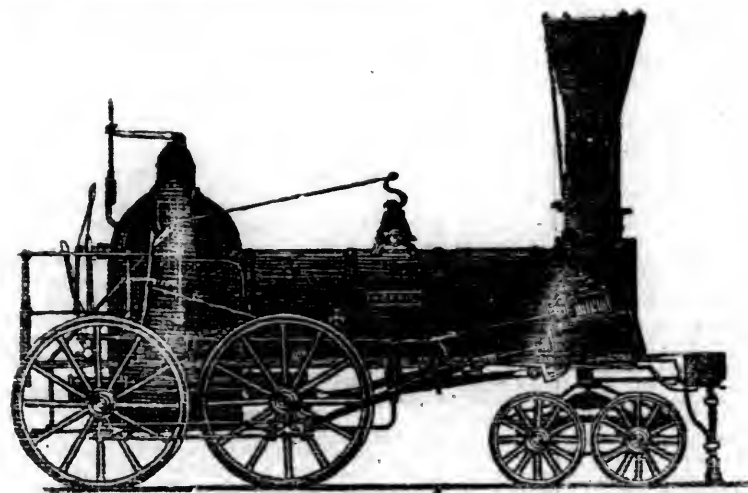
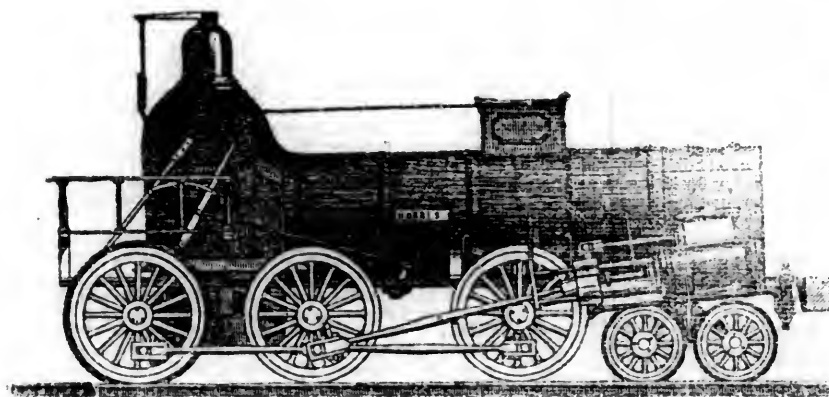
THE Subscriber, Practical Manufacturer of Scales of every description, respectfully asks the attention of Railroad Companies to his Improved Wrought Iron Railroad Track and Depot Scales which for strength, durability, accuracy, convenience in weighing, and beauty of workmanship, are not surpassed by any others in this country.

He is aware that this is rather a bold assertion for him to make, yet he can say with confidence that they have but to be tried to give them precedence over all others.

J. L. BROWN.

Bank Scales made to order, and all Scales of this make Warranted in every particular.

References given if required

NORRIS' LOCOMOTIVE WORKS.
BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,

THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size. Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tyres are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS

PATENT MACHINE MADE HORSE-SHOES.

The Troy Iron and Nail Factory have always on hand a general assortment of Horse Shoes, made from Refined American Iron.

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AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

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GEN. CHAS. T. JAMES, *For Manufactures and the Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & CO., 136 NASSAU ST.

Saturday, April 5, 1851.

Hempfield Railroad:

The following is a synopsis of the act which recently passed the Legislature of Virginia, granting the right of way to the Hempfield railroad company.

Sec. 1, authorises the opening of books in Wellsburg, and Bethany, Va., for the purpose of receiving subscriptions to the amount of two hundred thousand dollars, divided into shares of one hundred dollars each to construct a joint capital stock for the purpose of constructing a railroad from the town of Bethany, in said county, to such point on the Pennsylvania State line as the president and directors of the company hereinafter incorporated may select.

Sec. 2. Whenever 400 shares have been subscribed, the company shall be considered as incorporated by law.

Sec. 3. In case any railroad shall hereafter intersect the railroad by this act authorised to be constructed, the company of the said Wellsburg and Bethany railroad shall carry the passengers and tonnage from the point of intersection to either

terminus of the said road at the rates per mile that they charged for the through passengers and tonnage.

Sec. 4, authorises the town of Wellsburg to subscribe for 500 shares of the stock, and the branch of the N. W. Bank at Wellsburg, 400 shares.

Sec. 5, provides for the town of Wellsburg issuing scrip, bearing 5 per cent. interest.

Sec. 6, authorises the Hempfield railroad company to extend their railroad from a point on the western boundary of Donegal township, in Washington county, Pa., though the territory of Virginia, to the city of Wheeling; provided they shall commence within three years, and complete the same within six years from the passage of this act.

Sec. 7. If the said Hempfield railroad be not constructed by way of Wellsburg, in the said county of Brooke, the said Hempfield railroad company shall, on pain of forfeiting the privileges granted to them in this act, construct a branch of their railroad to some convenient point on Buffalo creek; at which the Wellsburg and Bethany railroad may connect with the same, and said branch shall be completed as soon as the said Wellsburg and Bethany railroad shall be completed from Wellsburg to the said point of connection.

Sec. 8. The said Wellsburg and Bethany railroad shall not, nor shall any branch thereof, be constructed to any place further eastward than Bethany, except on a proper route to make the said connection with said branch of the Hempfield railroad, and for that purpose only; and the said Wellsburg and Bethany railroad shall not connect with, nor transport freight or passengers to or from any railroad, which may be constructed in the State of Pennsylvania, except the said Hempfield railroad. But the foregoing provisions of this section shall cease to have effect if the said Hempfield railroad be not commenced within two years and completed within six years from the time of passing this act.

Sec. 9. If the said Hempfield railroad company accept the privileges herein granted, they shall make no greater charges for the transportation of freight or passengers on their road, to or from the said Wellsburg and Bethany railroad, than on freight or passengers carried to or from that part of the Hempfield railroad in this State for like distances and under like circumstance.

Sec. 10. Neither the said Hempfield railroad company nor the said Wellsburg and Bethany railroad company shall construct any part or branch of their railroad northward of Wellsburg aforesaid.

There is now no obstacle to the construction of this road, but money; and this we cannot believe will belong wanting. It cannot be that the friends of the Pennsylvania Central railroad will suffer the above project to flag; one that is so important to the interests of the Central road, and to Philadelphia.

The directors of the Hempfield company held a meeting at Washington, Pa., on the 18th ult., at which it was resolved to proceed at once to the work of construction, as soon as the necessary surveys can be completed. This meeting was adjourned to meet at Wheeling on the first Wednesday of May next, for the purpose of conferring with the directors of the Ohio Central road, which is the virtual extension of the Hempfield road west.

For the American Railroad Journal.

H. V. POOR, Esq.,

The following article from the Cincinnati Gazette, and from the pen of one of the most intelligent and scientific gentlemen of the west, exhibits very fairly the resources and prospects of the mineral region of Ohio.

The mineral resources of that portion of the State are coal, iron and salt. These minerals underlie a rich soil, productive in all the cereal grains, and in every fruit for which men tax mother Earth within that climate. The German emigrants in that country are making extensive plantations of the grape in that region, and very intelligent men are looking forward to the time when the Ohio will be as celebrated for its wines as the Rhine.

Yours truly, I. DILLE.

New York, March 31, 1851.

CENSUS STATISTICS OF THE OHIO MINERAL REGION. ITS GROWTH AND TOWNS.

Our fourth section view of Ohio includes what is called the Mineral Region. We must premise that this does not mean the whole mineral region of Ohio, by any means. On the contrary, that runs in a broad belt from the Ohio river to Lake Erie; and is everywhere full of mineral productions of the richest quality. We can give a brief view of it in a few words, as preliminary to the particular section we are about to describe.

The COAL FIELD of Ohio underlies the surface of about 28 counties, extending from a little east of Portsmouth to the Ohio east, and Lake Erie north, and is supposed to embrace at least 12,000 square miles. A comparison of this field with some of those in Europe, will but illustrate its magnitude and value.

Coal field of Ohio.....	12,000 square miles.
" Great Britain.....	11,850 "
" France.....	1,719 "
" Belgium.....	518 "

England has in fact not more than one-fourth the

workable coal field of Ohio! Ohio has about one-tenth of the workable coal fields of the now United States. She has coal enough to supply all the fires and machinery of the United States and Great Britain through countless ages to come. The question of amount, therefore, is of no consequence, when we have amount enough to supply the world.

The IRON FIELD is much narrower, but still one of great magnitude. It extends from the Ohio river to Lake Erie, and from Brush Creek, in the county of Adams, to the counties of Meigs and Muskingum, and is found in various forms—from the varieties of lime ores to the bog ores found chiefly near the lake. The workable strata, however, is much narrower, and with the exception of some works in Licking, Lake, etc., is chiefly confined to the counties of Scioto, Lawrence, Jackson and Hocking.

The SALIFEROUS REGION adjoins the Iron Field east, and is also very extensive. Salt water has, indeed, been found in many parts of Ohio, but the locality in which the water is strong enough to be profitable, is comparatively small. In the early settlement of the State, salt water was found in Trumbull county, by Gen. Parsons, but the salt-making is confined chiefly to Muskingum, Morgan, Athens, and Meigs counties.

The Mineral Region, as it is generally termed, referring to that which unites all the minerals of Ohio, and is chiefly valuable for that species of resources, consists of the Hocking valley and the lower part of the Muskingum valley, and so we shall consider it. We shall include the county of Monroe in this section, both, because it is watered by the branches of the Little Muskingum and because it contains both iron and coal.

Below are the counties, population and growth of this section. It has been said, in reference to our article on the "Scioto Valley," that Jackson county belonged to that valley. So it does, in one sense—but it belongs to the "Mineral Region" more. The county of Adams, on the other hand, belongs more to the Scioto than to any other district, and the exchange was, therefore, sufficiently correct and more convenient to our purpose.

	1840.	1850.	Rate in increase.
*Athens.....	19,109	18,218	Decrease.
*Fairfield.....	31,924	30,221	Decrease.
*Gallia.....	13,444	17,066	27 per cent.
*Hocking.....	7,741	15,875	62 "
Jackson.....	9,744	12,825	32 "
Lawrence.....	9,738	15,392	60 "
Meigs.....	11,452	17,988	56 "
Monroe.....	18,521	28,378	53 "
Morgan.....	20,852	28,326	36 "
Muskingum.....	38,749	45,043	16 "
Perry.....	19,344	20,744	8 "
Vinton.....	New county.	9,353	
Washington.....	20,694	29,770	48 "
	223,312	289,199	31 "

* Athens lost six of its original townships in the change of counties: three to the new county of Vinton, two to Morgan and one to Fairfield.—Jackson lost three townships to make the county of Vinton. Fairfield lost two townships to Hocking, to make up for two of Hocking put into Vinton. In the aggregate, however, the original territory of this district is the same. We thus see, that while this district has had no commercial advantages whatever, and no large towns, which has added so much to the growth of other districts, its increase is, notwithstanding, equal to the general increase of the State. But, if we take out the great agricultural counties of Fairfield, Perry and

Muskingum, whose mineral resources are comparatively undeveloped, we shall find that the residue of the district has increased 45 per cent., more than any other section of the State! And, we find further, that the counties of Lawrence, Meigs, Jackson and Hocking have increased 50 per cent., and these are the counties in which the largest part of Ohio iron and coal is got out. The east end of Scioto county for iron, and the county of Morgan for salt, should be added.

As a consequence of these facts, the question naturally arises, if, without large towns, without railroads, and almost without commerce, this region has grown so rapidly, what will it be when capital, commerce and railroads come to it? We hazard nothing in saying that it will be the great workshop of raw materials for the Ohio valley.—There is the greatest abundance of coal and iron and salt in other places, but where is one which will compare with it for convenience and cheapness to CINCINNATI?

Let us now look to its comparative growth:

Mineral Region in 1820....	90,524	Increase.
" " 1830.....	141,441	55 per cent.
" " 1840.....	223,312	58 "
" " 1850.....	289,199	31 "

The growth of this section has been very nearly parallel with the average growth of the State, and when we consider that it has neither had the large towns—nor the commercial advantages—nor the superior lands of the other parts of the State, this fact speaks much in regard to its future development.

The mineral region contains (as we have bounded it) about 6000 square miles—a little less than the Scioto valley—and about equal to the Western Reserve. Its density of population is 48 to the square mile. Its towns are not large, though their growth has, in the last decennial period been very rapid.

	1830.	1840.	1850.
*Zanesville.....	3,094	6,192	10,335
Lancaster.....	1,800	2,120	3,483
*Marietta.....	1,550	2,506	4,142
McConnellsville....	375	957	1,660
Gallipolis.....	755	1,221	1,686
Athens.....	600	710	898
Somerset.....	600	1,006	1,240
Logan.....	97	560	798
*Pomeroy.....		400	3,400
Ironton.....			570
Total.....	8,871	15,606	28,802

* In Zanesville is included Putnam, connected with it by a bridge. In Marietta we have included Harmer, connected with it in the same way, and in Pomeroy is included Coalport, and the series of villages which taken together, make up the town. Of these towns, some three or four are destined to be large manufacturing places.

The mineral region is more variegated by hills, and less alluvial in soil, than any other part. It is the only part, we believe, which contains any considerable portion of pine trees and evergreen plants. TAR has for many years been made in Jackson county, and sold in Chillicothe, and a large part of that district yet contains pine stumps. SALT has recently been made in some new localities, where the water promises to be very strong. This is specially the case in Pomeroy. Opposite that town, in Virginia, (of course in the same geological formation) we are told that a very large salt furnace has been erected, from which some samples of salt have already reached this city. Our space forbids our further description of this interesting section; but we may add that the mineral

hills of Ohio are among the very healthiest localities in the Ohio valley, where the breezes of summer refresh and strengthen, and fevers seldom appear.

American and Foreign Building Stones.

Comparison of Experiments on American and Foreign Building Stones, to determine their relative Strength and Durability, by Professor Waller R. Johnston, of Washington, D. C.

Continued from page 195.

1. Trials of two-inch cubes of the coarse-grained "alum limestone," used at the National Washington Monument, to ascertain its resistance to crushing. By Dr. Charles G. Page.—The specimens were stated to have been furnished by the owners of the quarries, and the testing to have been performed by the aid of a "powerful hydraulic press," so arranged as to "indicate accurately the amount of pressure." Not having witnessed any of the experiments or the arrangements of the machine, the writer feels bound to say that these allegations respecting the machine have been published by the architect, by the superintendent, and by others concerned in building the monument at Washington. The experiments were communicated to the writer by Dr. Page.

No. of the trial.	Crushing weight in pounds per square inch.
1.	910
2.	1372
3.	2281
4.	2312
5.	2437
6.	2531
7.	2625
8.	2650
9.	2750
10.	2843
11.	2968
Average strength.....	2334

Note.—From the above it appears that the greatest strength per square inch, when tested in two inch cubes is 2968 pounds, and the least 910 pounds, the latter being about 30 per cent. of the former number.

2. Trials by Dr. Page of the other building materials to obtain results, on two-inch cubes, comparable with those afforded by the "alum limestone."

No. of trial.	Kind of stone.	Crushing weight in lbs. per square inch.
1. Fine-grained marble of Symington...		4562
2. Another sample of do.....		4400
3. White veined marble, East Chester, N.Y., used at the General Post Office		4081
4. Do. another specimen.....		3906
5. Italian marble.....		3156
6. Patapasco granite.....		2941
7. Do. another specimen.....		2593
8. Seneca sandstone, (Smithsonian building,).....		2691
9. Do. do. another specimen.....		2691
10. Stockbridge marble, Mass.,.....		2410
11. Alum Limestone (casing of monument), average as above.....		2334
12. Stockbridge marble 2d specimen.....		2093
13. York road freestone, (a friable brown sandstone).....		2125
14. Aquia Creek sandstone, (Patent Office)		2093
15. Do. do. do. 2nd specimen		1875
16. Do. do. do. 3rd do....		1441
17. Do. do. do. 4th do....		1234
18. Common building brick.....		1000

Arranging in order of the average strength, we have the following succession, a column of relative values being added in which the alum limestone is represented by 100.

	Average strength per square inch.	Relative value
1. Maryland fine-grained marble....	4481	192
2. East Chester (N.Y.) marble....	3993	171
3. Italian marble.....	3156	135
4. Patapasco granite.....	2767	118
5. Seneca (Smithsonian) stone....	2691	115
6. Alum limestone (monument)....	2334	100
7. Stockbridge marble.....	2251	96

8. York road freestone.....	2125	91
9. Aquia Creek (Patent Office) sandstone.....	1660	71
10. Common brick.....	1000	42

Note.—The two sandstones, numbers 5 and 8, have a mean strength of 2408, which is three per cent. higher than that of the "alum limestone," which has its place between them in the above series. The four trials of the Aquia Creek sandstone give an average strength of 1660 pounds, and the first three experiments of Dr. Page on the alum limestone gave an average of 1521 pounds, showing the inferiority of at least some portions of this limestone to that "material which now disfigures the architecture of the Treasury building and the Patent Office."*

3. *Experiments on different building materials, published by Mr. Robert Mills, architect of the Washington National Monument. Specimens of the same size as the preceding.*

No. of trial.	Kind of stone.	Strength per square inch.	Relative value.
1.	Symington's fine-grained marble	6344	271
2.	Baltimore granite, Sumwalt and Grayson's.....	6250	267
3.	Blue rock from Potomac, used as the backing Stone of the National Monument.....	3750	160
4.	Granite of the east, <i>Port Deposit</i>	3250	139
5.	Granite of Normandy,†.....	2628	112
[6.]	Alum limestone, monument.....	2334	100]

4. *Marbles and limestones tested and reported on by Mr. Rennie in England.‡*

No. of trial.	Kind of stone.	Lbs. per sq. inch.	Relative value.
1.	White Italian veined marble, (tried in 1½ inch cubes).....	9681	414
2.	Black Brabant marble, tried in 1½ inch cubes.....	9281	395
3.	Purbeck stone, ditto.....	9160	392
4.	Black compact limestone, Limerick, Ireland, tried in 1½ in. cubes.....	8855	379
5.	Compact limestone, do.....	7713	330
6.	Devonshire red, marble do.....	7187	308
7.	White statuary marble not veined, ditto.....	6058	259
8.	White Italian veined marble, tried in one inch cubes.....	3216	137
[9.]	Alum limestone (as above).....	2334	100]

Note.—From his own reading of the original memoir of Mr. Rennie, the writer was led to suppose that all the above samples of stone numbered from 1 to 6 inclusive, had been tested in two inch cubes, and that the Numbers in the philosophical transactions (1848) referred to blocks of four square inches on the base; but in the Encyclopedia Britannica Mr. Tredgold has given the dimensions 2.25 square inches for the base. Barlow has apparently understood Mr. Rennie in the same way. On this latter area the above numbers are computed. On the supposition of a four inch base they would stand as follows:—

No. 1 gave per square inch.....	5445 lbs.
" 2 " " ".....	5185 "
" 3 " " ".....	5152 "
" 4 " " ".....	4981 "
" 5 " " ".....	4338 "
" 6 " " ".....	4178 "

These numbers change the relative values but they do not alter the position of the "alum limestone," which stands, as proved by Dr. Page, far below all the limestones and marbles, tested by Mr. Rennie, whether the latter were in 1, 1½ or 2 inch cubes.

5. *Experiments by Mr. Rennie on granites, tested in 1½ inch cubes.*

	Lbs. per sq. inch.	Relative value.
1. Aberdeen blue granite.....	10,913	467
2. Peterhead hard close-grained granite.....	8,282	354
3. Cornish granite.....	6,356	272
[4.] Alum limestone, as above.....	2,334	100]

* Hints on Public Architecture, p. 114.

† See below some accounts of other granites of Normandy, tried in two-inch cubes by Rondelet.

‡ Transactions Royal Society, 1818.

6. Mr. Rennie's experiments on sandstones.

	Lbs. per sq. inch.	Relative value.
1. Very hard freestone, 1½ in. cubes	9446	404
2. Dundee sandstone, breccia, do.	6630	284
3. Bramley falls sandstone, near Leeds, do.....	6063	259
4. Craigleith white freestone, do.....	5487	234
5. Portland Stone, do.....	4570	195
6. Killaly white freestone, do.....	4561	195
7. Derby grit red friable sandstone, average of two varieties, do.....	3743	160
8. Portland stone in a 2 inch cube	3729	159
[9.] Alum limestone of Maryland, as before	2334	100]

Note.—The weakest of the above sandstones is 27 per cent. stronger than the strongest specimen of the alum limestone tried by Dr. Page.

7. *Experiments by Messrs. Daniel and Wheatstone, on the magnesian limestone of Yorkshire, Derbyshire and Nottinghamshire in England, employed in building the new houses of Parliament.* Tested in two inch cubes in duplicate.*

	Lbs. per sq. inch.	Relative value.
1. Stone of Kiveton.....	10,695	458
2. " Stone-ends.....	9,209	394
3. " Bolsover Moor.....	8,288	355
4. " Kiveton, 2d variety... 6,163	284	
5. " Norfall.....	5,879	252
6. " Steetley, yellow variety 5,171	221	
7. " Steetley, white do... 3,192	136	
[8.] Alum limestone of Maryland, as before	2,334	100]

Note.—The average strength of the seven varieties of stone above compared is exactly three times as great as that of the "alum limestone."

The stone used for the houses of Parliament is described as standing, in its natural site, high above the ground, in large masses or perpendicular walls, with its smooth, bleached, time-worn surface, discolored only by a few lichens with a little moss or ivy—facts clearly indicating its strength and durability.

8. *Experiments on Marbles made in France by Rondelet, Gauthey, Suflot and Perronet,† on two inch cubes, the weights and measures being reduced to English to conform to the other series.*

	Lbs. per sq. inch.	Relative value.
1. Black marble of Flanders.....	11,218	480
2. Cerveles marble of Flanders... 5,738	245	
3. White Statuary marble.....	4,652	199
4. Blue Turquin marble.....	4,328	185
5. Veined white marble.....	4,241	181
6. Veined white marble called Pauf 3704	158	
[7.] Alum limestone of Md., as above	2,334	100]

Note.—With the exception of the first of the above trials the French experiments conform pretty nearly with those of Mr. Rennie on similar materials supposing the numbers given by the latter were obtained from two inch cubes; but they fall far below his results, admitting, with Tredgold, that his blocks were 1½ inch cubes. Gregory appears to have understood that all Rennie's experiments were made on 1½ inch cubes unless otherwise expressly stated.

9. *Experiments of Rondelet and other French experimenters on two inch cubes of granite.*

	Lbs. per sq. inch.	Relative value.
1. Oriental rose granite.....	12,518	536
2. Granite of Normandy called <i>Champ du Bout</i>	11,628	498
3. Granite of Normandy called <i>Gallicien</i>	9,987	428
4. Granite of Bretagne.....	9,303	398
5. Green granite of Vosges.....	8,798	376
6. Beola granite used in Milan... 6,603	282	
7. Grey granite of Vosges.....	6,020	257
[8.] Alum limestone of Maryland... 2,334	100]	

The average relative value of the seven granites above cited is 396, or almost four times that of the "alum stone."

10. *Experiments on stones used in the construc-*

* See "Lithology, or observations on stone used for building," by C. H. Smith, p. 22.

† Traite theorique et pratique de l'art de batir. Par Jean Rondelet, tom. I. p. 211-214.

tion of various ancient edifices, reported by Rondelet. —size two inch cubes.

	Lbs. per sq. inch.	Relative value.
1. Caserte stone of Italy.....	8,584	363
2. Stone of Istria used by Palladio, Sarcovino and Scamozze in the edifices of Venice and Vicenza.....	7,395	316
3. Fourneaux stone, pillars of All Saints Church at Angers.....	6,317	270
4. Grey stone of Florence.....	6,096	261
5. Stone of the bridge of St. Maxence.....	5,404	231
6. Travertin, material of ancient Roman buildings.....	4,301	183
7. Bagneaux stone, columns of the Pantheon, Paris.....	3,484	149
8. Stone of the temple of Paestum.....	3,258	130
[9.] Alum limestone Maryland.....	2,334	100]

The average relative value of these ancient building stones is 238.

11. *Experiments on two inch cubes of Basalt and Porphyry, by Gauthey and Rondelet, reported by the latter in the work above cited.*

	Lbs. per sq. inch (Eng.).	Relative value.
1. Basalt and Auvergne.....	29,549	1266
2. Porphyry.....	28,455	1219
3. Swedish basalt.....	27,196	1165
4. Basalt of Auvergne 2d variety 25,172	1078	
5. do. do. 3d variety 16,416	703	
[Alum limestone.....]	2,334	100]

The average relative value of the basalts and porphyries is 1086.

12. *Experiments on the alum limestone of Maryland in blocks of other dimensions than two inch cubes, published by Mr. Dougherty, the superintendent of the Washington National Monument, as having been made at the Navy Yard Washington.*

	Average.
1. A 1-in. cube, (1 sq. in. base) 2000	
2. Another block of same size, do.....	2000 Expt. 1 & 2 2000
3. A cube of 3½ in. on a side (12½ base).....	3265
4. Another cube of same size, do.....	3765 Expt. 3 & 4 3515
5. A slab 4½ in. sq. 2½ in. thick 22.56 base.....	5629
6. do. 4½ sq. 4½ high, do... 2659	
7. A 4 in. cube 16 in. base. 5687 Expt. 5 & 7 5658	

The 6th experiment is alleged to have been made on a block of unequal thickness and therefore not to give a fair result.

The first two of the above experiments give results considerably below the average of Dr. Page's trials on two-inch cubes. The only standard with which we can at present compare them, is the one inch cube of the Italian veined marble tried by Mr. Rennie, which gave 3216 lbs. per square inch. Their relative values, by this comparison, are 100 and 160. Comparing the three averages above given, there is an evident increase of strength per square inch of base, dependent apparently in some measure on the increased size of the specimens.

We are furnished by the paper of Mr. W. Wyatt of England with a considerable series of experiments on marbles, granites, and sandstones, tested in cubes of about the same size as the largest of those above given. His investigations were made with the aid of the hydraulic press of Messrs. Bramah & Sons, and in this respect all appear to be comparable with those made on the alum limestone in large blocks. Each of his results is the mean of two trials.*

To be continued.

Ohio.

Report of the Board of Public Works.—The productive public works of this State under the control of the Board of Public Works, are the Ohio canal and its feeders, extending from Portsmouth to Cleveland, the Walhonding canal, the Hocking Valley Canal, the Miami and Erie canal, the Muskingum Improvement, the National road, and the Western Reserve and Maumee road.

* See Transactions of the Society of Civil Engineers, vol. I. p. 235.

The receipts of the several works for the past year for tolls, fines, water and rents, were as follows:—

	1850.	1849.
Ohio Canal.....	\$397,332 57	\$362,630 48
Walbonding Canal...	2,555 09	1,594 72
Hocking ".....	8,078 67	8,368 57
Miami and Erie Canal.....	315,162 60	323,764 67
Muskingum Improvement.....	36,724 29	43,018 70

Total receipts from canals for 1849 and 1850.....\$759,852 62 \$739,377 14

The expenditure on account of the same works for repairs, maintenance, collection of tolls, etc., are as follows:

	1850.	1849.
Ohio Canal.....	\$115,539 48	\$141,465 71
Walbonding Canal...	1,966 61	2,423 52
Hocking ".....	11,819 06	10,302 06
Miami and Erie Canal.....	113,035 29	187,093 23
Muskingum Improvement.....	39,925 29	56,711 50

Total expenses for 1849 and 1850.....\$282,285 73 \$370,996 02

Showing an excess of receipts in 1850 over 1849 of \$20,475 48, and a decrease of expenses of \$88,710 29, or a net increase of \$119,186 57.

The receipts from the two roads were as follows:

	1850.
National road.....	\$42,636 08
Expenditures for repairs, etc.....	44,547 19

Excess of expenses over receipts..... \$1,911 11

	1850.
Western Reserve and Maumee road.....	\$11,568 67
Expenses.....	8,808 79

\$2,759 88

The canals were kept in good order, with slight exceptions, during the whole season.

The total tonnage on the Ohio canal, which arrived and cleared at Portsmouth and Cleveland for the years 1849 and 1850 is as follows:

	1849.		1849.	
	Cleveland.	Arri- ved.	Clear- ed.	Portsmouth.
Wheat & flour...	66,458	537	3,262	123
Coal.....	63,946	207	—	1,057
Corn.....	14,769	317	5,540	—
Pork, bacon and lard.....	4,725	5	16,563	26
Iron—all kinds— and nails.....	9,303	2,752	29	6,392
Lumber.....	1,445	10,529	254	12
Salt.....	—	11,083	419	371
Merchandise	1,500	6,606	251	4,614
All other articles.	31,468	19,668	8,856	2,751
Totals.....	193,514	51,704	35,174	15,346

	1850.		1850.	
	Cleveland.	Arri- ved.	Clear- ed.	Portsmouth.
Wheat & flour...	75,860	111	4,046	60
Coal.....	83,851	90	—	1,344
Corn.....	23,287	659	13,341	—
Pork, bacon and lard.....	4,785	10	9,447	10
Iron—all kinds— and nails.....	8,927	8,495	41	6,780
Lumber.....	1,063	11,944	722	3
Salt.....	4	9,070	325	138
Merchandise	898	5,456	175	3,990
All other articles.	34,054	16,216	11,218	2,763
Totals.....	232,729	52,048	39,315	15,088

The tonnage on the Miami and Erie canal is as follows:

	1849.		1850.	
	Tons.	Clear- ed.	Tons.	Clear- ed.
At Cincinnati..	104,608	36,216	117,655	42,784
At Toledo.....	104,566	30,211	122,580	61,391

Below we copy from the report of 1849, the following statistics of the canals of Ohio, which presents an interesting summary of these works:

Names of Canals.	Length in miles	Cost.
Ohio canal, from Cleveland to Portsmouth, including the Columbus Feeder, &c.....	334	\$4,695,203 67
Walbonding canal, from Rochester, on the Mohican river, to Roscoe, on the Ohio canal....	25	607,268 99
Miami canal, from Cincinnati to Dayton, including Hamilton Basin.....	66	1,020,000 00
Warren county canal—from Lebanon to Middleton.....	19	217,552 16
Miami extension canal, from Dayton to Junction, where it intersects the Wabash and Erie canal.....	115	2,239,517 92
Sidney Feeder, (part of the same work).....	13	392,258 32
St. Mary's Feeder and Reservoir, (part of the same work).....	11	528,222 07
Wabash and Erie canal, from Indiana State-line to Manhattan, including Maumee and Toledo Sidecuts.....	91	3,057,177 24
Hocking Valley canal and slackwater, from Athens to Ohio canal at Carroll.	56	975,481 01
Muskingum Improvement (slackwater navigation) from the Ohio canal at Dresden, to Marietta, on the Ohio river.....	91	1,627,318 27
Total.....	821	\$15,359,999 6

The chambers of the locks on all the canals are from 87 to 99 feet in length, in the clear, and 15 feet wide—admitting boats 78 feet in length and 14½ feet wide to pass through them. The locks on the Muskingum Improvement have chambers 75 feet long and 36 feet wide, for the passage of steamboats, with the exception of one above Zanesville, which is only 120 feet long and 22 feet wide.

The ascent of the Ohio canal, from Cleveland to the Portage summit, is 396 feet, which is overcome by 43 locks. From Portage summit to Webbsport the descent is 239 feet, which is overcome by 31 locks. From Webbsport to Licking summit, the ascent is 166 feet, which is overcome by 20 locks, and from Licking summit to Portsmouth, where the canal empties into the Ohio, the descent is 419 feet, which is overcome by 55 locks, making the total ascent and descent 1,220 feet, and the number of locks 149.

The ascent of the Miami canal, from Cincinnati to Dayton, is 297 feet—the number of locks 32.

The descent of the Warren county canal, from Lebanon to Middleton, is 46 feet—the number of locks, 6.

The ascent of the Miami extension canal, from Dayton to its junction with the Wabash and Erie canal, is 213 feet, requiring 27 locks—the descent is 235 feet, requiring 27 locks—making the ascent and descent 448 feet—the number of locks 53.

The Wabash and Erie canal, from Manhattan to the Indiana State-line, has an ascent of 176 feet, requiring 26 locks. The Toledo sidecut, a part of the same work, one mile in length, has a descent of 15 feet, requiring two locks—the Maumee sidecut, 2 miles in length, has a descent of 63 feet, requiring 6 locks.

The Walbonding canal, from Rochester to the Ohio canal, at Roscoe, (25 miles in length) has a descent of 90 feet, overcome by 11 locks.

The Hocking canal, from Carroll, on the Ohio canal, to Athens, (56 miles) has a descent of 203 feet, which is overcome by 26 locks.

The Muskingum Improvement, from Marietta, on the Ohio river, to Dresden, on the Ohio canal, (21 miles) has an ascent of 126 feet, overcome by 12 locks and 11 dams.

The average per centum paid by the Ohio canal, on the cost of construction, since 1833, after deducting costs of collections, repairs, &c., is \$5 53 on the 100 dollars. The average per cent on the cost of construction on the Miami canal between Dayton and Cincinnati, is \$3 83 on the 100 dollars. That of the Miami extension canal, for 3 years past is \$1 27 on the 100 dollars. The Wabash and Erie canal, for five years past, \$2 53 the 100 dollars. These are the only improvements that have paid expenses.

During the five years ending with the last fiscal year, the Muskingum Improvement has sunk \$75,629 32 in repairs, cost of collection, &c., over the above receipts. The Hocking improvement, in the same time, has sunk \$9,257 31, and the Walbonding canal, within the past five years, has in like manner cost the State \$6,235 59 over and above its entire receipts.

Boardman's Patent Boiler.

Among the many new things of this age of improvements, in this section of the country, we notice one of "Kirk's Patent Steam Hammers," and also one of "Boardman's Patent Improved Steam Boiler's," belonging to Messrs. Myers & Cadwell, and which are now in full and successful operation in the manufacture of car axle-trees, at their forge in Clayburgh. This hammer is so constructed, that it can be made to strike a very heavy or a very light blow, at the will of the operator; and so perfectly is it controlled, that it can be run at the rate of one hundred motions a minute, without even touching the anvil. It in fact rides on the steam. It is worked with one of H. Boardman's patent improved steam boilers. This boiler is an invention of our townsman, Mr. Horace Boardman, and it seems likely soon to take the place of all other steam boilers. It is said to be fully demonstrated that it saves at least fifty per cent of the fuel over all other boilers in use. Believing this to be true, we do not see how it can prove otherwise than of immense value to the public, and especially to persons immediately interested in the generation of steam. Being always pleased to learn of the prosperity of those around us, we are happy to hear of the success that is attending Mr. Boardman's invention.—*Clinton Co. Whig.*

Institution of Civil Engineers.

"On the Construction of the Building for the Exhibition of the Works of Industry of all Nations," by Mr. M. D. Wyatt, Assoc. Inst. C.E.

The subject naturally divided itself into the consideration of the requisites demanded, the design, and the actual construction of the building.

The features of all the buildings in which previous exhibitions had been held, both abroad and at home, were then carefully reviewed, and the points of difference between the present cosmopolitan exhibition and all its predecessors were distinctly enunciated, and shown to have induced the invitation to the world at large, to contribute their suggestions for the building, the results of which were shown to the public in the Theatre of the Institution of Civil Engineers, in the two hundred and forty plans there exhibited. None of these plans being found to embrace the necessary requisites, the Royal Commissioners devised a plan, for the execution of which tenders were invited in June, 1850.

The reservation having been made, that *bona fide* tenders for any construction, offering greater advantages than that proposed by the commissioners, would be considered, Mr. Paxton brought forward his proposition; and it being contended, that certain advantages in celerity of construction, facility of removal, the adaptability of the materials to the required forms, and the amount of cost, were inherent in the design for the proposed structure, to be entirely composed of wood, iron and glass, the oth-

cr tenders were rejected, and that of Messrs. Fox, Henderson & Co., for Mr. Paxton's design, was accepted.

Such was the origin of the present building, which being adapted to the site selected for it in Hyde Park, by H.R.H. Prince Albert, was shown to consist of a nave 72 feet wide, and 64 feet high, with a series of side aisles, two of 48 feet and six of 24 feet wide, of the respective heights of 43 feet and 23 feet; the whole spreading to a width of 436 feet.

A transept, 408 feet long, and 72 feet wide, intersected the building at right angles in the centre; this transept was covered with a semi-circular roof, springing at a height of 64 feet from the level of the ground, and making the entire height 100 feet.

The details of the construction were very minutely given, from the concrete filling of the holes in the ground, under each support, through the base plate, the columns, 8 inches in diameter, the connecting pieces, to which were attached the girders for the galleries, the second and third set of columns and the roof trusses, the box gutters and the "Paxton" gutters, which latter were intended to provide at the same time for conveying away the rain from the roof, and the condensed moisture from the inside. The total area of the ground floor was equal to 772,784 square feet, and that of the galleries to 217,100 square feet.

Details were also given of the mode of conveying the rain water, &c., into the adjoining sewers, through the interior of the supporting columns; of the ventilation by means of sets of louvres, of galvanized cast iron, placed between the columns of the side aisles, and in the upper part of the roof; of the supply of water for the extinction of fire, and add for the supply of the fountains; and of the experiments for testing the girders and trusses, by the hydraulic press erected in the building, and by which the strength of the whole was proved before they were used.

In examining the power and dexterity with which the design had been realized by Messrs. Fox, Henderson & Co., or, in other words, in the actual construction of the building, it was necessary to bear in mind, that their tender was only verbally accepted on the 26th of July, 1850; that possession of the site was obtained on the 30th of July; that the first column was fixed on the 26th of September; and at the present time (only 145 working days since the commencement) but little of the vast building remained to be finished. To give an idea of the vast size of this building, it was noticed, that the width of the main avenue was within 10 feet double that of the nave of St. Paul's Cathedral, whilst its length was more than four times as great. The walls of St. Paul's were 14 feet thick, those of the glass building in Hyde Park were only 8 inches. St. Paul's occupied 35 years in building, whilst the Hyde Park building would be finished in less than half that number of weeks. The celerity of the construction was very remarkable. As many as 308 girders had been delivered on the ground in one week. Seven of the great trusses of the nave were raised in one day. Each man fixed about 200 superficial feet of glass per day.

In order to perform this work, it was necessary to devise and employ various contrivances for economising labor; such as the sash-bar machine, the gutter machine, the morticing machine, the painting machine, the glazing machine, besides many others of an equally ingenious nature—all of which were described; and, when listening to the details, it was universally felt that England possessed mechanical and physical energies, far exceeding those which gave form and being to the most celebrated monuments of antiquity.

In the course of the paper, Mr. Digby Wyatt, (the author,) to whom, from the commencement, had been intrusted the active superintendence of the construction of the building, paid a well-merited tribute of praise to Mr. C. H. Wild and Mr. Owen Jones, who had been associated with him; to Mr. Barry and Mr. Brunel, who, as members of the Building Committee, had made very valuable suggestions; as well as to Messrs. Fox & Henderson, and to Mr. Brounger, Mr. J. Cochrane, and others, for their exertions in the execution of the construction; and he concluded by reminding the members, that the weight of responsibility, the arduous duty of supervision, the honor of acting as

the master mind, to weigh the requisites, to determine the design, and to govern the construction of this great apparatus, has been reserved for Mr. Cubitt, the President of the Institution of Civil Engineers.—*Prac. Mechanics' Jour.*

The Hydrostatic Log.

The object of this invention is to obtain a register of the speed of ships, by a column of mercury, in such a manner that the height of the column shall depend upon the velocity alone, and not be affected by any disturbing causes; such as alteration of draught of water, pitching and rolling &c.

The principle embraces that of Pitot's tube, inasmuch as the force of the resistance due to the velocity is communicated through a small pipe projecting into the water below the bottom of the ship; this force, acting upwards, compresses a portion of enclosed air in a small cylinder, which air communicating by means of a little pipe with the bulb of a glass tube—bent like a common barometer—raises the mercury in the tube, by depressing it in the bulb.

But as any single column of water and air thus acting upon the surface of the mercury in bulb alone, must depend not only upon the resistance due to the velocity, but also upon the distance of the cylinder from the water line, which distance or height varies with every sea, and alters more permanently as the draught of water changes, a compensation was necessary; and the inventor has found one which he considers perfect for all these variations, by applying a second column of water and air to press upon the other surface of the mercury, viz., that in the glass tube. The second column is precisely like the first as regards the pipe and cylinder, and communicates with the sea by an aperture or apertures, presented in such a direction that velocity does not produce any increase of pressure. Thus the mercury in the indicator is placed between two columns of water and air, which are always equal to each other in length; and the mercury rises according to the difference between the pressures upon its two surfaces, the result of resistance or velocity alone.

The air pipes may be conducted in any direction—and the indicator, which swings upon gimbals, may be placed in any part of the ship. The two water pipes are conducted into one tube in the bottom of the ship, divided into two separate chambers for the different forces.

In addition to the speed, the true course or lee-way of the vessel is indicated upon a horizontal segment divided into degrees, over which a needle is moved by a rod connected with the above mentioned double tube; and the whole is kept continually in the true direction of the ship's motion by a float or vane attached to the lower end of the tube in the water.—*Proceedings of the Royal Society.*

The Production of Gold in Russia.

The production of gold in Russia was, in 1847, about £4,000,000: in 1848, it was rather more; and in 1849, it was about £3,450,000. The return for 1850 has not yet been published, but in 1848 and 1849 the exportation of gold was prohibited, and in 1850 the state of the exchanges was entirely unfavorable to gold being sent out of the country; on the contrary, a large portion of the 4½ per cent loan contracted at London, was paid in gold and silver. Still, the circulation of gold coin does not seem to have augmented, and, indeed, gold appears but very rarely in the ordinary transactions of business at St. Petersburg and Moscow. We can only explain this state of things by the accumulation of bullion in the government coffers, and by the diffusion of gold coin through the provinces, and in all parts of this vast empire. The purchases made by the government for the army, etc., being generally liquidated in gold, the Russian half-imperials have lately acquired a large currency in Germany, and it may thus be supposed that a rather important amount of our gold coin has gradually passed into circulation in this manner.

The augmentation of the population, and the increase of comfort, and even luxury, among a large class of the community, will also account for a more considerable absorption of gold; but even all these circumstances taken together, do not sufficiently explain the state of our circulation when compared with the production of Russia, which

furnishes so large a proportion of the general production of the globe, excluding California. The production of gold by Russia has, contrary to the assertions made by some newspaper correspondents, been decreasing since 1847, which may in part be attributed to a progressive tax on the produce of the produce of the mines and washings, in proportion to the quantity produced, established since that period. The government possessing a monopoly of the melting of the precious metal, the produce of private mines, yielding more than three-fourths of the total production, is handed over to government, which coins it, or disposes of it otherwise. The Russian government has naturally followed with attention the fluctuations of gold in other parts of Europe; but the recent prohibition of the exportation of gold seems to indicate that it will not meddle with the position of its gold coinage.—*St. Petersburg Journal, Feb. 8.*

From Appleton's Mechanics' Magazine.

The Application of Iron to Railway Structures.

Continued from page 179.

Power of beams of cast iron to sustain long-continued impact.—"The effect of impact and vibration upon structures was a leading object of inquiry with the Commission; and the first series of experiments instituted upon this subject was, to determine the power of beams to sustain impacts many times repeated. For this purpose sixteen bars were cast, and five at least of the sixteen were found to be slightly defective at some place where they gave way. Whether these small defects were more numerous than would be found in practice, it would be difficult to determine. Six of the bars were 15 feet long and 3 inches square, and placed on supports 13 feet 6 inches asunder; seven were each 10 feet long and 2 inches square, and 9 feet between the supports; and three were each 5 feet long, 1 inch square, and 4½ feet between the supports. Of these bars six were bent through one-third of their ultimate deflection at each blow, and five of them bore each 4000 blows without breaking; the sixth was broken at a flaw with 1,085 blows. One large bar bent by impact through five-twelfths of its ultimate deflection, was broken at a defective place with 1,350 blws. Of six bars bent by blows through half their ultimate deflection, five were broken with less than 4000 blows each; one with 29; another with 127, &c. The only bar which bore the 4000 blows was one of the smallest kind, or 1 inch square. Of three bars, one bent to seven-twelfths, and two to two-thirds the ultimate deflection, all were broken; the two latter with 127 and 474 blows respectively; the former required 3,700 blows to break it. Of ten bars of Low Moor Iron No. 2, each ten feet long and two inches square, placed on supporters 9 feet asunder, and struck in the middle with long continued impacts, as before, four broke at defective places, and two at sound ones. Three were subjected to impacts bending them through one-third of their ultimate deflection, and bore the test without fracture; of three bent by blows through half their ultimate deflection, two were broken; those bent through two-thirds were all broken. On the whole, it appears that no bar but one, and that a small one, stood 4000 blows, each bending it through half its ultimate deflection; but all the bars, when sound, stood that number of blows, each bending them through one-third their ultimate deflection. It must, however, be borne in mind, that a cast iron bar will be bent to one-third of its ultimate deflection with less than one-third of its breaking-weight, laid on gradually; and one-sixth of the breaking weight laid on at once, would produce the same effect, if the weight of the bar was very small compared with the weight laid on it. Hence the prudence of always making beams capable of bearing more than six times the greatest weight which will be laid upon them." Mr. Hodgkinson makes the following,

Remarks on some of the leading results of horizontal impacts upon cast iron beams:—1st. The bars in tables I., II., and III., were of the same sectional area, length, and weight, nearly, but differed in the form of their transverse section. They were placed on supports at the same distance, 13½ feet asunder, and struck horizontally by the same ball, 603 lbs. weight, suspended by a radius of 17 feet 6 inches.

From the results, it appears that the beam 3 inches square, and the rectangular beams 6 by 1½ inches section, struck on the broader and narrower sides respectively, had all very nearly the same strength to resist impact. These conclusions are drawn from a mean between two experiments in each case. In table XV., six bars, each 2 by 1 inch section, and 5 feet long, were laid on supports 4½ feet asunder, and all struck by the same ball, 75½ lbs. weight, with arcs of a radius 17 feet 6 inches. Three of them were struck on the broader and three on the narrower sides, and their mean chords of impact to produce fracture were 70 inches and 71.67 inches respectively, or nearly the same, agreeing with the results of the experiments upon the former bars."

"2nd. In table IV. the bars were of the same dimensions in section as those in table I., or 3 inches square, but the distance between the support was reduced one-half. The resulting breaking deflection 1.23 inch, was somewhat greater than one-fourth of that in table I., or 4.875 inches, and the vertical descent to produce fracture was nearly one-half, but rather more, the depth fallen through in the two cases being 639 inch and 1.238 inch. Comparing, in like manner, the half and whole bars in tables V. and II., the depths are 5521 inch and 1.2071 inch respectively. This result, coupled with the former one, shows that the depth fallen through to break the half bar is nearly half of that required to break the whole one. Comparing the results in tables VIII. and XII., and also tables X. and XIII., it appears also that a bar of half the length of another resists with nearly half the energy, but somewhat more.

"3rd. The experiments in tables I., II., III., IV., & V., afford illustrations of some of the conclusions in the large generalization of Dr. Young, deduced from neglecting the inertia of the beam. (*Nat. Phil. Lecture XIII.*) "The resilience of a prismatic beam, resisting a transverse impulse, follows a law very different from that which determines its strength, for it is simply proportional to the bulk or weight of the beam, whether it be shorter or longer, narrower or wider, shallower or deeper, solid or hollow. Thus a beam 10 feet long will support but half as great a pressure without breaking, as a beam of the same breadth and depth which is only 5 feet in length; but it will bear the impulse of a double weight striking against it with a given velocity, and will require that a given body should fall from a double height in order to break it.

"4th. The experiments in table VI. were made to compare the effects of striking a bar midway between the centre, and one support with those of striking similar bars at the centre, as in table IV. The great impacts, so near to the support in these cases, would necessarily cause it to yield slightly, and thus increase the resisting powers of the bars to sustain impact. In experiments made by the author several years ago, given in the fifth report of the British Association, page 112, on bars one inch square, some subjected to impacts in the middle, and others at half the distance between the middle and one support—the cord of impact necessary to produce fracture was nearly equal in the two cases. The ratio of the deflections, from equal impacts at the middle and at one-fourth span, was nearly constant under different increasing degrees of impact; the deflections at the middle from equal impacts being those at one-fourth span as 10.7 nearly. The relative ultimate deflections of the beam in the middle, and at a point half way between the middle and one end, ought to be as 10:7.5 nearly.

"5th. The bars in tables VIII., IX., and X., were all of the same iron and size, and the only difference was in the weight of the striking balls. The distances fallen through, and the work done by the balls to produce fracture being respectively 3159 and 190 488 with the 603 lb. ball, 1.2856 and 195,447 with the 151½ lbs. ball, and 3.0506 and 230 32 with the 75½ lb. ball, affording a good illustration of the resistance from the weight of the bar.

"6th. The bars in table XI. were of the same iron as the others, but remelted, to ascertain the effect of melting this iron a second time, without mixture, upon its power to bear impact. The strength to resist blows was increased, but the iron was harder and much more unsound than before. The work done by the ball to break the beam in each case was increased in the ratio of 261 to 194.

"7th. The deflections in cast iron beams were

always found to be greater than in proportion to the velocity of impact; whilst in wrought iron they were nearly constant with impacts of very different velocities. This fact shows that there is a falling off in the elasticity of cast iron through impact, analogous to that through pressure. The difficulty of obtaining a satisfactory theory of the power of cast iron beams to sustain impact is considerably increased by this falling off in elasticity, but it is hoped that the varied nature of these experiments will tend much to reduce it."

Appendix B contains a report of experiments for determining the effects produced by causing weights to travel over bars with different velocities, made in Portsmouth Dockyard, and at Cambridge, by the Rev. R. Willis, F.R.S., Jacksonian Professor, &c., Capt. H. James, R. E., F.R.S., and Lieut. D. Galton, R.E., together with experiments made in Portsmouth Dockyard on the strength of rectangular bars of cast iron; on the effects of reiterated depressions of iron bars, by traversing weights, &c. &c., with a "Preliminary Essay," by the Rev. R. Willis, on the effects produced by causing weights to travel over elastic bars. The bars in all the experiments were laid in parallel pairs, and tested by passing a loaded car at various rates of velocity over them. The first series of these experiments were made with bars of cast iron 9 feet long between the points of support, 1 inch broad and 2 inches deep. The weight of the load was increased at each transit till one or both of the bars broke, the velocities being obtained by letting the car run down an inclined plane from various heights. In Experiment No. 4, the car at rest on the centre of the bars, weight 1120 lbs., caused a deflection of .88 inch, and a set of .20 inch. The same load impelled at the velocity of 15 feet per second, or 10.2 miles per hour, produced a central deflection of 1.24 inch, and a set of .21 inch. 1760 lbs. at the same velocity produced a central deflection of 3.00 inches, and a set of .91 inch. An ultimate load of 1876 lbs. broke one of the bars. Experiment No. 5, load 1120 lbs. at rest, deflection at centre .86 inch, set .25 inch. Same load at velocity of 10.2 miles per hour increased deflection to 1.11 inch, the set remaining the same. A load of 1844 lbs. increased the deflection to 4.17 inches, the set to 1.59 inch, and eventually broke one of the bars. In Experiment No. 6, a load of 1120 lbs. at rest on centre of bars produced a deflection of .62 inch, and a set of .12 inch. The same load, passed at the rate of 10.2 miles per hour, increased the deflection to .74 inch, with the same set as before; a load of 1792 lbs. at the same speed deflected the bars 2.90 inches, with a set of .67 inch; and a load of 1816 lbs. broke one of the bars. In Experiment No. 7, a load of 1120 lbs. at rest upon the centre of the bars caused a deflection of .64 inch, and a set of .12 inch. The same load propelled at the velocity of 24 feet per second, or about 16½ miles per hour, increased the central deflection to 1.02 inch, and the set to .15 inch. A load of 1412 lbs. at the same speed produced a deflection of 3.16 inch, and a set of .72 inch; and a load of 1440 lbs. broke both bars. In Experiment No. 8, 1120 lbs. at rest on centre as before, showed a deflection of .65 inch, and a set of 11 inch. A velocity of 24 feet per second increased the deflection to .87 inch, and the set to .14 inch. 1496 lbs., at the same velocity, produced a deflection of 3.94 inches, and a set of 1.07 inch; and 1524 lbs. broke both bars. In Experiment No. 9, a load of 1120 lbs. at rest on the centre, deflected the bar .74 inch, with a set of .18 inch. The same load at a velocity of 24 feet per second, caused a deflection of 1.14 inch; and 1580 lbs. at the same velocity, produced a deflection of 3.08 inches, and a set equal to .68 inch. 1604 lbs. broke both bars. In Experiments 10, 11 and 12, 1120 lbs. at rest, showed deflections from .95 to 1.17 inch, and a velocity of 29 feet per second, or nearly 20 miles per hour, increased them from 1.80 to 2.54 inches. The breaking-weights varied from 1204 to 1240 lbs. at the same velocity, and the greatest observed deflections from 1.80 to 3.36 inches. In Experiments 13, 14, and 15, the velocity was increased to 33 feet per second, or 22½ miles per hour, the static deflections being from .81 to 1.30 inch, the breaking loads from 1148 to 1288 lbs., and the last observed deflections from 2.67 to 3.65 inches. In Experiments 16, 17 and 18, the velocity was increased to 36 feet per second, and the greatest breaking-weight was 1204 lbs., the

maximum observed deflection being 2.31 inches.

The Second Series comprised 15 experiments upon bars 9 feet long between the supports, 1 inch broad, and 3 inches deep. The breaking-weights at rest on the centre varied from 4126 to 4388 lbs., the maximum central deflection being 2.71 inches. With a velocity of 16 feet per second, the greatest breaking-weight was 3496 lbs., and deflection 2.70 inches. A velocity of 29 feet per second reduced the breaking-weight to 3167 lbs.; 36 feet per second reduced it to 2468 lbs., greatest deflection 2.08 inches. A velocity of 43 feet per second reduced the greatest breaking-weight to 2242 lbs., deflection 1.87 inch. From these results, it appears that a small load moving at a great velocity breaks a bar before it has suffered the whole of the deflection which a greater load produces, moving at a less velocity.

To be continued.

U. S. Mint.

The North American furnishes the annexed statistics of the operations of the Mint:—

We are indebted to E. C. Dale, Esq., Treasurer U. S. Mint, for the subjoined statement of the coinage and operations of that institution for the month of March. It will be observed that the coinage during the month reached the unprecedented sum, we believe, of \$6,298,672. This fact demonstrates the present working facilities of the mint to be equal to any emergency, in meeting the demands of the country, that may possibly arise. The total coinage of the year thus far, amounts to \$14,119,213. In order to show the coinage in each of the past three months, and the total aggregate, we have compiled the following table, which, as the export of gold has commenced at New York, may possess some interest for our commercial readers:—

	Gold.	Silver.	Copper.	Total.
January ..	\$2,620,966	\$76,950	\$7,277	\$2,705,705
February ..	5,082,987	15,500	16,861	5,115,348
March...	6,285,735	6,400	6,537	6,298,672

Total...\$13,989,688 \$98,850 30,675 \$14,119,213

The deposits, during the same period, of the precious metals, were \$10,687,100, of which \$10,671,000 was in gold and \$16,100 in silver. Of the gold, California contributed \$10,434,000, as will be seen by the annexed table:

January	\$1,940,000	\$60,000	
February	2,860,000	140,000	7,700
March	2,634,000	37,000	8,400

Total.....\$10,434,000 \$237,000 \$16,100

COINAGE IN MARCH, 1851.

Gold Coinage.

	Value.
284,197 Double Eagles.....	\$5,683,940 00
48,663 Half Eagles.....	243,315 00
38,104 Quarter Eagles.....	95,260 00
263,220 Gold Dollars.....	263,220 00

634,184 pieces.....\$6,285,735 00

Silver Coinage.

128,000 Half Dimes.....\$6,400 00

Copper Coinage.

653,799 Cents.....\$6,537 99

1,315,983 pieces.....\$6,298,672 99

Total gold bullion deposited for coinage, from 1st to 31st of March, 1851, inclusive:

From California.....\$2,634,000 00
From other sources.....37,000 00

Total.....\$2,671,000 00

Silver bullion deposited in same time.....\$8,000 00

All deposits made at the Mint since March 11th have been paid promptly on the ascertainment of their value, and a large surplus of coin has been accumulated in the Treasury; the amount now on hand, available for payments, is over \$2,000,000. Deducting \$500,000 for old deposits payable but undrawn, and \$200,000 for deposits not ascertained, and we have a surplus beyond all demands of \$1,300,000.

Preparations are making for a large issue of

three cent pieces from the Mint at an early day. By authority from the Treasury department, a great part of the silver bullion fund will be converted into these pieces; and after receiving a sufficient supply for the various government offices, the balance will be exchanged for deposits of foreign silver coins or bullion, and also for *American gold and silver coins*. A fund is likewise provided for procuring future supplies of silver bullion for this coinage, so that all the public demands may be promptly satisfied. To prevent undue accumulation of these coins in single hands, a discretion is allowed to decline selling more than \$150 worth at a time to one applicant. The least amount to be sold is \$30 worth. Authority is also given to deliver the coins in distant cities, at the cost of the Mint for transportation, as is now the case in distributing the copper coinage. Notice will hereafter be given of the time at which applications for the new coin will be received.

Freight on Coal Roads and Canals.

The reduction made by the Reading railroad company, a few days since, in the tariff of charges, has been followed by a corresponding reduction in the charges of all other companies. Schuylkill navigation company, Lehigh navigation company, Delaware division of Pennsylvania Canal, Lehigh Canal Company, and the Delaware and Hudson Canal Company, have all made their rates lower than those of last year. The price of coal has, however, fallen more than the freight. To give some idea of the spirit of competition prevailing, we annex the prices to be paid for Lackawanna coal, delivered on board vessels at Rondout, during the period of canal navigation in 1851, subject to the specified conditions:

	After To July 15.	Sept. 15.	Sept. 15.
Lump coal.....	\$3 30	\$3 40	\$3 56
Grate do. or large broken	3 45	3 55	3 65
Slide dock do. or range	3 40	3 50	3 60
Pea coal or Pea & Chesnut	2 65	2 75	2 85

With fifty cents per ton added to these rates, it is understood the coal will be delivered from Rondout to New York city, making the price of anthracite, in New York city, \$3.80 per ton. The company, however, "does not bind itself to the price &c. now offered, for any definite period; but reserves to itself the right of advancing the price or making any alteration it may deem proper, until orders are given and accepted in writing."

The Note of Preparation

About five hundred canal boats, barges, &c., have been laid up, during the past winter, in the Atlantic Dock Basin. They were placed abreast each other, in regular "tiers," and though in close contact, covered an area equal to several acres.—The families of the boatmen who have passed the winter in these floating dwellings, are sufficient in number to form a respectably sized town. About twenty boats have left the basin within a short time, and much activity is displayed by the whole flotilla in caulking, painting, &c., preparatory to the commencement of business on the 15th instant, when the canals are to be opened. Some eastern freight has offered, but little or no western. In this particular, the spring forwarding business is rather more backward than usual.—*New York Journal of Commerce.*

Scranton.

A correspondent of the Pittston Gazette, under date of March 4th, says:

As most if not all the readers of the Gazette are aware, a railroad, starting at this point and intersecting the York and Erie road at the Great Bend, near Binghamton, is in course of construction on or before the 4th of July next. In connection with this road, large and commodious workshops are being erected near its terminus in this place, the largest of which when completed will be 350 feet in length by 200 in width, sufficiently large to admit the employment of from four to six hundred mechanics. These shops are intended for the construction and repairing of locomotives, cars, and the general equipage of the road. This department is under the superintendence of D. H. Dotterer, Esq., formerly of Reading.

In close proximity to the depot, a hotel of exten-

sive dimensions, to contain two hundred rooms, is to be erected the coming season, at an expense of twenty thousand dollars. The funds have been secured by selling stock for the required amount.

Maryland.

We copy from the *Cumberland Civilian*, the following account of what is doing in that quarter, in reference to Railroads:—

Railroad Extension.—The Mount Savage Company are now engaged in extending their railroad, up the valley of Jennon's run to the valuable properties at the foot of the hills in the vicinity of the town of Frostburg. The substitution of a regular track for the present tram road will be of immense advantage in facilitating the delivery of the coal of the Frostburg, Allegany and other mining companies at the various canal basins at this place.

Laying the Track.—We notice that the rails are being laid on the extension of the Baltimore and Ohio railroad, west of Cumberland. The plan adopted by the company is to carry the rails on the track as it is laid, and thus deliver them as wanted along the line. In this way some four or five miles have been finished, and already has the steam whistle been heard in the valley of the Potomac above Cumberland.

New Railroad.—We are gratified that the Georges Creek coal and iron company are about to construct a railroad from their valuable property at Lonaconing, to intersect the Baltimore and Ohio railroad at some point near Westport, probably the Piedmont station. The road will be nine or twelve miles in length, according to the point of intersection finally fixed upon. It will be commenced immediately under the direction of Wm. H. Smith, engineer and superintendent of the Company, and, when finished, will open the rich coal properties in the George's Creek valley that are now without any outlet to market. We regard this as a very important improvement and have no doubt that it will be prosecuted with energy and vigor until completed.

Kentucky.

Lexington and Maysville and Lexington and Danville Railroad.—The proposition recently submitted to the people of Fayette county, to subscribe \$200,000 to each of the above roads, to aid in their construction, has been answered in the affirmative by the following majorities:—

	Maysville Road.		Danville Road	
	For.	Ag't.	For.	Ag't.
Lexington	1226	427	1104	473
Athens	40	135	31	137
Yarnalton	4	96	3	97
	1270	658	1138	707
	658		707	
Maj. M. road	612	D. road	431	

French's Locomotive.

The legislature of Virginia, some time since, appointed a committee to examine the invention of Mr. French, and report upon its merit, and the practicability of its adoption. The report, portions of which we give below, is favorable to the claims of the inventor; and upon its presentation, the House of Assembly passed a resolution, which, however, was not concurred in by the Senate, authorizing the construction of a road not over five miles in length, upon the principle of the invention. We copy from the report the following account of the experiment, with a description of the track and the machinery:—

"The road is constructed on the Manchester side of the river, a few hundred yards above the Petersburg road; is about 1900 feet in length, and, with the exception of 100 feet at the lower extremity, rises the remainder of the distance about 200 feet to the mile, the incline being nowhere less than 1 foot in 30. The road differs but little from the common railway with wooden superstructure. The same sized timbers are used, and the string pieces, instead of being secured by wedges as is usual, are

notched into the sills and secured by iron bolts—the ends of the sills are cut off flush with the sleepers, and the iron, which is a flat bar 6 inches wide, $\frac{1}{4}$ thick, is placed on the outer edge of the string piece, projecting over it $2\frac{1}{2}$ inches. The road has a very firm and solid appearance, and the iron has in no way been displaced by being used. The ends of the sills being cut off flush with the sleepers, and the iron projecting over $2\frac{1}{2}$ inches, there is thus formed a free and open space the depth of the sills and string pieces for the wheels to play revolving up against the rails.

The driving wheels of the engine are cast solid and concave, the cranks are fixed on the outer ends of the axle, and between the cranks and the inner surface of the wheels, suspended from the axle, are the friction wheels which revolve upon the rails. These friction wheels by means of a compound lever, the long arm of which rests by the side of the engineer, are pressed up against the rails, and the axle of the driving wheels being the fulcrum, the driving wheels are pressed down upon the rails and made to produce any requisite degree of adhesion. In this consist the chief features of the invention.

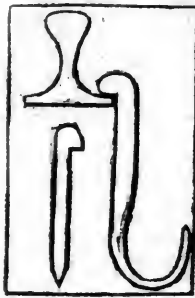
The friction wheels, when not in use, assume by their gravity a position about one inch below the rails, and pass freely along without rubbing or touching either the iron or the road. When brought up against the rails they partake of the revolving motion of the driving wheels above, and by means of springs accommodate themselves to any varying thickness in the iron. In addition to this, by means of a small steam cylinder, they are made to pass at pleasure from under the rails, and assume a position some inches above them, the engine different then in no way from the common locomotive.

The machinery on the road consists of an engine and a passenger car capable of seating sixty passengers. The engine has attached to it a small water-tank, and weighs about $3\frac{1}{2}$ tons; its driving wheels were 32 inches in diameter, cylinders 8 inches, with 16 inch stroke. The committee have examined the working of the engine, and have been repeatedly drawn over the road, and have witnessed experiments enough to convince them that, by means of Mr. French's invention, a far greater adhesion is rapidly produced than is due to the weight of the engine, and that the apparatus is entirely manageable and convenient. In simplicity, ease of application, and effectiveness, this invention excels all the ingenious contrivances hitherto proposed for attaining similar ends. On a road on Mr. French's plan, any locomotive engine runs readily, and the common railway, to take advantage of this principle of adhesion, would have to be changed only on the inclines."

The committee report that the engine was unable to ascend the grade without the friction gear, but immediately started forward upon its application. This was repeatedly tried, not only on one, but on almost every part of the plane, and always with the same result. The power of the engine, the exact value of the mechanical adhesion, was not exactly ascertained. As many as one hundred passengers at a time have been drawn over the plane, at a speed of twelve to fifteen miles an hour, the train all the time, both in stopping and starting, being perfectly manageable. The brake and friction rollers were disengaged after ascending the plane, and the train allowed to run down (the point where the brake was applied being marked) in order to make an estimate of the resistance occasioned by the brake. After it descended a hundred yards or more, the brake was applied, and the train was readily stopped. The velocity in the ascending was at least 12 miles per hour. The friction rollers were examined, and "they were well supplied with oil and not at all heated," so far as the committee could ascertain. The report states that the great end attained by the invention is the reduction in the disproportion between the paying freight and the dead weight, and that they believe this end has been fully accomplished.

Railroad Spikes, Wrought Chairs and Fastenings.

THE subscribers continue to manufacture, with increased facilities, Hook and Flat Head Railroad Spikes and Chairs. The points being finished by hand, have a long taper, and sharp point, and are much superior to those made entirely by machinery.



We are also prepared to furnish Wrought Chairs, Clamps and Fastenings of every description, either punched or plain. The best quality of refined iron is used in the above articles, and our prices will be made as favorable as any in the country.

The patent Clinch Spike will be found an improvement to secure the rail at the joints.—

They drive in the manner shown and are not liable to work loose.

All communications, addressed to the undersigned, will meet with prompt attention.

SMITH & TYSON,
No. 25 South Charles st., Baltimore Md.

Stickney & Beatty, DEALERS IN IRON AND IRON MANUFACTURERS.

AGENTS for the Baltimore City Rolling Mill, (Works of Messrs. Ellicott) also agents for the sale of the Laurel, Locust Grove and Gunpowder (Balt.) Forge Pig Irons; Hupp's Cold Blast Columbia Wheel Iron, Port and anti-Eatam Pig Irons. Caledonia, Columbia and Capon Cold Blast Boiler Blooms, warranted; Wm. Jessop & Son's Steel; Old Colony and anti-Eatam Nails; Bar Iron, Boiler Plates, Hoop, Sheet, Oval, Half Oval, Horse Shoe and other Iron. Exchange Place, Baltimore.

AMERICAN RAILROAD JOURNAL.

Saturday, April 5, 1851.

The Stock and Money Market.

Since our last a favorable change has taken place in the stock and money market. Prices have improved, under a growing confidence that money is to remain abundant. Large orders for the shipment of specie have been countermanded. The mint has thrown into circulation the large amount of gold which had accumulated there. Foreign exchange is abundant, trade has generally improved, and every thing indicates an abundance of money during the coming season. Railroad securities begin to share in the general improvement; but we would advise those having such to offer, not to offer them till a further improvement shall have taken place. The coming bids fair to be a very prosperous season. The receipts of our roads are greatly in advance of any former year, and this will tend to create increased confidence in bonds and stocks; and the increased volume of agricultural products which our rapidly extending public works are throwing upon the market, will largely add to our means for their further prosecution.

A good deal of interest is felt in this city and the State, in reference to this institution, the object of the organization of which, is to compel country banks to redeem their bills in this city; or in other words, to introduce into the banking operations of New York the same system of par redemption which has so long prevailed in the New England States.

The system which prevails there is simply this: all the banks in those states have mutually entered into an agreement to make their bills equal to specie in Boston, the great monetary centre of the country in which they are situated. As a part of this agreement, the Suffolk bank takes up, or redeems, all the bills of all the banks that are parties to this

agreement, for which service it receives a small compensation. As fast as the bills are received, or at stipulated times, the country banks are notified, and are obliged to redeem their notes in specie, or in current notes of other banks.

Such are the main features of the Suffolk Bank system, which is attempted to be introduced into this city, through the agency of the Bank of the Metropolis.

The advantages of this system of redemption are apparent at once. It gives to the notes of all banks that are parties to the arrangement the attribute of *specie* funds, at the counter of every bank in New England. The bills of any bank in any State, are as good in the payment of a note as are those of the bank receiving the money. A merchant in Eastport, Maine, pays his notes with the bills of the New Haven, Conn., banks, just as well as with gold and silver. He requires no intervention of a broker, neither are his pockets stuffed with every variety of uncurrent funds, of every degree of value. With the Suffolk system, the currency of New England therefore always possesses the attribute of *money*, because it is always, and without cost to the holder, convertible at will into gold and silver, which are alone recognised as a legal tender.

That it is of very great advantage for the community, that bills of banks should always possess the attribute of instant convertibility, requires no argument to prove. The saving effected by this is measured by the amount paid to brokers to redeem, and by the time wasted in effecting this—no considerable item. By the "Suffolk system," all this burden is borne by the banks. In New York it is thrown upon the people. It is the object of the Bank of the Metropolis to throw this burden where it belongs—upon the banks themselves. It is simply compelling them to make their bills, what they purport to be, *money*, wherever they circulate. If banks put out their bills as money, and receive for them, money, what injustice or hardship is there in compelling them to make their bills equal to money, instead of throwing this burden upon the people?

As a popular measure, therefore, its adoption would be a very useful one to the community at large, in relieving it of a burden which is a severe tax upon every business man. But this is not all. The adoption of a system similar to the one proposed, is absolutely necessary to protect the public against the extravagant issues, and consequently unsate management of banks. In New England, the books of the Suffolk bank show the weekly issue of the several country banks, with nearly as much accuracy as the books of such banks. If these receipts are beyond the regular and safe limits, this suspicious circumstance at once receives attention, and calls forth inquiry and investigation as to the cause of such excess. And if no good reason can be shown for it, the public are immediately, and very properly, cautioned against receiving its bills. The bank making the over issues is at once called upon to make good its account, and if it cannot do this, it then becomes the subject of legal interposition. With the check which this system imposes, no bank can long go on beyond its regular means. It detects the first symptom of weakness, and exposes the danger, in most cases, before the public can be harmed.

In New York, to be sure, the bills of most of the banks are secured by a deposit of State stocks, so that no loss, as a general thing, can happen to the bill holder. This may be very true, and at the

same time a bank may do itself, and the public, great injury, by issues beyond the wants of business. The abundance of money should, in the long run, bear an uniform relation to the amount of property in a community to be moved from hand to hand. All issues of banks beyond the amount required for this purpose, promote speculative movements, and create an unhealthy state of things. The sole office of money is to effect an exchange of commodities. Bank bills are not property, but merely the representative of its value. The notes of a merchant are not property, but merely promises to pay, and where in either case the issue represents a sum larger than the property possessed by such bank or merchant, and more than they severally can pay, the holder of such notes or bills is not justified in treating them as property, and in incurring liabilities upon the strength of such. His means are in supposition only, and he becomes involved in the embarrassment of those upon whom he is trusting. Under the Suffolk system, a bank cannot keep up a circulation beyond the regular wants of the community it is doing business for. Its bills, the moment they are issued, flow at once to the monetary centres, where they must be redeemed by current funds.—Banks are in this way prevented from throwing a fictitious capital upon the community, to become the basis of new schemes of speculation, or business not called for, nor justified by the amount of property which actually exists.

We consider, therefore, the introduction of the Suffolk system into this State, as of the highest importance in the tendency it would have to regulate and confine within a proper limit, the issues of banks, and to prevent their becoming the instruments of speculation, and to relieve the community of the immense tax now paid for the redemption of bills. As far as parties are concerned, the banks are on one side and the people on the other. We rejoice in the attempt that is about to be made to improve our currency, and we trust that it will be entirely successful.

SALES OF STOCK IN NEW YORK.

	April 2. Sales.	March 26. Sales.
U. S '67 Loan.....	116	116
Erie R.R.....	84	79½
Harlem R.R.....	70½	67½
Stonington.....	43	41
L.I. R.R.....	24	22½
Norwich & Wor....	64	61½
Del. & Hudson....	129½	129½
Reading.....	56½	54½
Morris Canal.....	18½	18½
Erie income.....	93½	92½
" " Bonds.	103	104
Canton.....	65	62
Farmers Loan.....	65½	64

SALES OF STOCKS IN BOSTON.

	April 1.	Mar. 25.
Old Colony Railroad.....	68½	68½
Boston and Maine R.R.....	104½	105½
Eastern Railroad.....	102	103½
Fitchburg Railroad.....	111½	111½
Michigan Central Railroad....	94½	92
Northern Railroad.....	70½	70½
Vermont Central Railroad.....	34½	34½
Vermont and Mass. R.R.....	31	28½
Western Railroad.....	103½	104½
Ogdensburg Railroad.....	38½	38½
Rutland Railroad.....	57½	58½
Boston and Worcester Railroad.	103½	103½
Rutland Railroad Bonds....	97	85
Ogdensburg Railroad Bonds....	97½	99
Vermont Central R.R. Bonds....	92½	92
Boston and Providence R.R.....	83½	84
Philadelphia, Wilm'gton & Balt.	29	29½
Concord R.R.....	56	56
Manchester and Lawrence.....	90	90

Ohio.

Akron Branch Railroad.—The following gentlemen have been recently elected directors of this road:—Simon Perkins, J. W. McMillen, M. W. Henry, H. A. Miller, E. N. Sill, James Butler, H. N. Day.

The officers of the board are Simon Perkins, President; J. W. McMillen, Treasurer; H. N. Day, Secretary.

Pennsylvania.

Central Railroad.—The Northern Liberties corporation have subscribed \$500,000 to the Central railroad. The sum of \$1,500,000 has already been subscribed by the city of Philadelphia, leaving but \$1,000,000, which it is said will be speedily taken, to complete the sum of \$3,000,000, necessary to carry the road over the Alleghenies.

The Philadelphia Pennsylvanian says that the contractors are now busily engaged in laying the rails on the Central road, between Johnstown and Lockport, in Westmoreland county. It is expected that the cars will be running west as far as Lockport, which is 26 miles east of Greensburgh, by the 1st of July next. It is believed that the road will be completed to within eight miles of Greensburgh by the first of October. The heavy cutting and tunnelling at Greensburgh will probably prevent the cars from running through from Philadelphia to Pittsburg before the spring of 1852.

East Tennessee and Georgia Railroad.

Twelve miles of the Georgia and East Tennessee railroad are in full operation. Forty miles will be finished to the Hiwassee by the 1st of June. The road will reach Athens by the 10th of October.

Ohio.

Cincinnati and Belpre Railroad.—The Chillicothe Gazette says that the committee of the Belpre railroad have contracted with the house of Cushing, Wood & Co., Boston, for the construction of the line of their road, from Greenfield, Highland county, to a point eleven miles east of Chillicothe, in Ross county. They are to grade the line and prepare the rails, the bridging only excepted, and a large portion of the payments is to be made in the stock of the company. They were the lowest bidders out of sixty competitors.

European and North American Railway.

The Halifax Sun speaking of the mission of Mr. Howe, the Provincial Secretary, now in England, for the purpose of obtaining the aid of the home government for the above work, says:—

"We have it on the most reliable authority, and hasten to lay before our fellow citizens the gratifying news that the whole affair of the railroad has been settled. The mission of the Hon. Mr. Howe has been entirely successful. The British government had consented to guarantee the whole amount to build the railroad to Quebec and Montreal, at 3½ per cent. Mr. Howe was in great spirits, nor was it at all apprehended that any change of ministry contingent upon the unsettled state of parties, could in any wise affect the negotiations, which had been virtually brought to a close. The local provincial government have the power to connect with any branch railroad to the American territory."

The Province of New Brunswick has appropriated the sum of \$1,250,000 in aid of the above work through her territories, and proposes to commence work upon this division in the month of June next.

This great project is moving forward with ex-

traordinary rapidity, and we shall soon see every portion of it under construction.

Pennsylvania.

York and Cumberland Railroad.—The bill fixing the tax on freight carried over this railroad passed the Senate of Pennsylvania on Monday. The rate is three mills per ton per mile, the same, we believe, as that charged on the other public works of Pennsylvania. Attempts were made to raise the rate to fifteen, then twelve, and then ten, but they all failed by decisive votes. In the passage of this bill we have an earnest of that wise and national policy which should ever control the counsels of the States, that looks to the benefit of the whole people, and will not allow itself to be controlled by State lines and local influences.

Mr. Asa Whitney.

This gentleman sailed for England in a late steamer, for the purpose, it is said, of laying before the British government, his plan for building a railroad across this continent. It is also stated that Mr. Whitney has, for some time past, been receiving overtures from that power to transfer his plan from the American to the British territory, and make the latter the route through which the commerce of the world is to flow. Mr. Whitney, according to the journals devoted to his interests, has for a long time turned a deaf ear to all solicitations from abroad, in his desire to secure to his own country the vast boon which he had to bestow. But as our people ungratefully refuse to accept it, and the infinite blessings which are to follow in its train, Mr. Whitney, worn out by our ingratitude, has now turned his back upon us, and has gone to sell our birthright to our rival and ancient enemy!

All this is very fine talk. Mr. Whitney's going to Europe is undoubtedly a mere ruse, to operate upon Congress during the next session. Until that assembles, he can as well be in England as the United States. In the meantime, he can fabricate the last great humbug of politicians or supplicants for government patronage, some story of British aggression or interference; or some design to secure to herself a monopoly of right of way across this continent, to operate further upon popular credulity.

But if Mr. Whitney has gone to England for the purpose of placing his plan before the English government, it only proves the delusion under which he is laboring. The idea of constructing a railroad around the head of Lake Superior, to make that the route of travel and commerce across the country, is too preposterous for any sane man to entertain. To urge this, shows how utterly wanting he is in a proper appreciation of the difficulties, and uses of such a work.

We freely admit that Mr. Whitney possesses some qualities which eminently fit him to head a great enterprise. He is enthusiastic, and possesses to a remarkable degree the capacity of inspiring others with his own views. He is deterred by no obstacle, and discouraged by no defeats. But here his qualifications for conducting to a successful issue a work of such immense magnitude as that of a railroad from the Atlantic to the Pacific, end. He is self-confident without experience or training, arrogant in his opinions, and overbearing towards all who differ from him. He has a hearty contempt for the whole engineering profession, and loses his temper the moment that one of that class talks about tunnelling, bridging, excavating, etc., which are certainly the great annoyances in railroad construction, and which have made others, besides

Mr. Whitney, lose temper. He can never tolerate the introduction of such disagreeable topics as these, but is never tired of pouring over maps, and enlarging upon the grandeur of his scheme. So long as his mission was confined to the matter of arousing the attention of our people to the importance of the proposed work, his success was remarkable. The moment he came to the question of construction, his plans failed to receive respectful attention. Congress in fact refused the courtesy of printing extra copies of his bill, for circulation, and turned the cold shoulder upon the whole scheme. As far as a railroad to the Pacific is concerned, the public voice is unanimous in its favor; but in reference to the plan for construction, that of Mr. Whitney's has hardly a defender. We are sorry for his disappointments, and heartily wish he would adapt his scheme to the practical ideas of the present day, and of which he appears to have not the least appreciation.

Taxing our Railroads.

An attempt, and we hope an ineffectual one, is being made in our Legislature to impose a tax upon the freight carried by the Erie and Ogdensburg railroads, for the benefit of the Erie canal. The Central line is now compelled to pay canal tolls upon the freight carried over it. There is not so much injustice in this, as we believe this was provided for in the charters of the companies which compose this line; but to compel the Erie and Ogdensburg to pay canal tolls, is the rankest kind of injustice. If such a thing had been anticipated, neither road would have been built. Both of them have been private enterprises, carried on for the public good; and both have been completed at a great sacrifice of private means. For the State, now that they are completed, and threaten to encroach upon the business of the canal, to interfere with their operations, is a wrong, based upon no other principle than might. We hope that such principles will never obtain in our legislature.

The State cannot afford to adopt any other but the most liberal policy in relation to our railroads. We must remember that these works, both in magnitude and cost, are fast throwing the canal into the shade. Our people will soon have four times as much invested in railroads as they have in canals, and unless our legislature adopts and pursues a most liberal course toward them, they will unite and make common cause against the work, that stands in their way to success. We shall soon find, that instead of the canal legislating for railroads, these will dictate the management of the canal.—Such an event cannot be long distant. If that work cannot stand upon its own merits, it will go down. The people of this State will never consent that it shall be supported by a tax upon other works, having a similar object. Such a policy would be impolitic and unjust, and cannot be sustained if adopted. Let the State complete the work of enlargement at the earliest moment, and place it in a position to retain its business by the cheapness of carriage, rather than by punishing other works for underbidding the canal. Freight, in the end, will always take the cheapest route, and the interest of the great mass of the community is sure to control our legislature. The State of Ohio, after having expended an enormous sum for unproductive works, authorises parallel lines of railroad whenever asked for, without any restriction whatever. Because she has built unprofitable canals, she does not repeat her mistake, by taxing profitable to support unprofitable enterprises.

Canada.

Chamblis Canal.—Another link in the Northern chain of water communication with the St. Lawrence is being agitated. The Montreal Patriot learns that great exertions are making to complete the improvement in the Chamblis canal, the link connecting Lake Champlain with the River St. Lawrence by the River Sorel. It is added that the active competition between the Ogdensburgh route and the St. Lawrence renders the improvement of the canal of vast importance to Canada. About two miles and a-half of the canal requires to be deepened throughout from 6 to 12 inches—and the locks of the canal must be proportionally elevated.

New York.

A meeting is to be held at Lebanon Springs, Columbia county, on the 10th inst, for the organization of a company to build a railroad from Chatham Four Corners to Hoosic river, to connect with the Western Vermont road, now building from Rutland to the Hoosic river. The projectors have great confidence in their undertaking, as by such a road a direct communication will be had between Vermont and the city of New York.

Maine.

Penobscot and Kennebec Railroad.—The adjourned meeting of the stockholders of the A. and K. railroad holden at Winthrop on Thursday week was characterized by great unanimity of action and harmony of feeling. The proposition submitted by the directors at the previous meeting, to the effect that the A. and K. railroad should unite with the Atlantic and St. Lawrence in leasing the Penobscot and Kennebec road for twenty years provided the Legislature should grant the necessary power, was unanimously adopted. A committee consisting of Messrs. Ware, Morrell, Goodenow and Noyes were appointed to make an arrangement with the Atlantic and St. Lawrence directors in relation to the terms upon which the lease should be taken, and adjust the relative proportion of freight and fares of the respective roads, and report to a special meeting to be called by the directors.

The action of the Atlantic and St. Lawrence and the Kennebec and Andros Coggin railroads, in guaranteeing a dividend upon the stock of a road from Banger to Waterville, will secure the immediate commencement of this link. The most gratifying progress is now making in the whole line from Waterville to Halifax.

New York.

Saratoga and Sackett's Harbor Railroad.—This company is to be organized at Troy on the 10th instant. Could the project be carried out, it would become a formidable rival to the other routes between the lakes and tide water.

Vermont Railroads.

The Boston Journal says:—The Vermont, Central and Rutland railroad companies have so far adjusted matters as to establish equal rates for the transportation of passengers and freight to all competing points. An arrangement has also been made to connect the two roads at Burlington, thus giving to the Rutland the advantage of a continuous railroad communication with Rouse's Point.

Indiana.

Indianapolis and Bellefontaine Railroad.—The laying of the iron on the Indianapolis and Bellefontaine railroad has been commenced between Pendleton and Anderson, should the weather prove favorable, it is expected the road will be in running order to the latter place by the 10th of April.

New York.

Syracuse and Binghamton Railroad.—We judge from present favorable indications that this road will shortly be commenced. As yet it is doubtful whether the road will have its terminus at the latter place; this rests, it is stated, with the citizens of Binghamton. If the requisite amount of money is subscribed by them, the road will very likely terminate there. The construction of the road will commence as soon as \$500,000 of the stock is taken. It is said that Onondaga and Oswego counties will subscribe \$250,000, provided that Broome subscribes \$100,000 and Cortland \$150,000. There are as present as many as four routes, each warmly advocated by its friends. This certainly shows an appreciation on the part of the inhabitants along the respective routes, of the prospective advantages likely to accrue to them from the construction of the road. A survey has been made to the Tully Summit, and one through Christian Hollow, and the engineers are now running a line through Sherman Hollow. These places are all in Onondaga county. Truxton in Cortland county will subscribe \$75,000 if their route is taken. As soon as a sufficient amount of stock is taken, (\$500,000) and the route decided upon, the work will be commenced.

New York.

Eric Railroad.—The receipts of the Eric railroad for March prove to be considerably larger than was expected, and show an amount of \$8,400 beyond the estimate. The figures are as annexed:

Passengers and mail	\$68,800 13
Freight	94,600 86
Total	\$163,400 99
March, 1850	130,578 68
Increase, 25 per ct.	\$32,822 31
The receipts of the first three months of the year are	\$433,414
Same time in 1850	345,745
Increase in 1851	\$87,669

Electro-Magnetic Locomotive.

The National Intelligencer says that on Thursday last Professor Page made a preliminary trial on the railroad for the purpose of testing the best mode of attaching the battery, which seems to be a difficult point, owing to the jostling and oscillations of the locomotive. It was run out over two miles, and the best speed on a straight track was ten miles an hour. The locomotive weighs ten and a half tons, and has five feet drivers with two feet stroke.

Railroad from New Orleans to Texas.

A correspondent of the New Orleans Crescent recommends that a railroad should be constructed from New Orleans to the Sabine, with the view of continuing it, when the population of Texas becomes sufficiently dense, to the San Antonio or Rio Grande. He urges that this road, if constructed to Houston and the Sugar region of the lower Brazos and Colorado, would pay better than any other line leading to or from New Orleans.

Houston is situated nearly due west from New Orleans, and Bexar about a degree south of Houston. The road might be so constructed as to avoid Sabine Lake and Galveston Bay, and after reaching Houston bend a little to the south, so as to touch the upper line of the sugar region of Texas, and extend by Columbus on the Colorado, and Gonzales on the Guadalupe to Bexar. This great line would then furnish facilities of transportation for all the sugar region of Southern Texas, which is three or four times more extensive than that of Louisiana, and for a cotton growing region capable

of furnishing one or two millions bales annually. New Orleans might, by means of this railroad, restore to her markets a trade infinitely more valuable than that she has lost by the northern railroads that have tapped the commerce of the Mississippi, but she might also by this road open a new channel of commerce that would pour into her lap the rich trade of Northern Mexico and California. The commerce of the Father of Rivers would scarcely be more valuable than the commerce that might ultimately be directed to this great avenue. The people of New Orleans have not dreamed of the immense wealth that might flow into the Crescent city from this great garden of the southwest. Stretching from the Sabine to the Rio Grande, lies a planting region which, when its resources are fully developed, will yield a larger annual product of cotton, sugar, tobacco, and the other great staples of the south, than the present product of all the southern States east of the Sabine.

The whole trade of this fertile and extensive region can be directed to New Orleans. If the Crescent city will but extend her iron arms to embrace the riches of this beautiful and fertile region, her golden horns will be filled with plenty.

Ohio.

Columbus, Piqua and Indiana Railroad.—The company constructing this road, have issued a circular in relation to the bonds issued by the trustees of Washington township, in which is included the corporation of Piqua, Miami county, in payment of a subscription of \$50,000 to the stock of the above company. These bonds are 7 per cents, and are payable on the 1st of August, 1870, in this city. The interest payable semi-annually. The taxable property of the township (\$952,910) is mortgaged to secure the payment of the bonds. A tax sufficient to pay the interest when due, and to create a sinking fund for the redemption of one bond annually, has been assessed by the trustees of the township. This will leave but \$30,000 to be redeemed when the bonds become due. The circular refers to the condition and prospects of the township, and particularly to those of the city of Piqua situated within its limits.

The city is situated on the Great Miami river, 75 miles north of Cincinnati, and with the Miami canal running through it. It has a population of some five thousand inhabitants. In it is situated the "Piqua Branch of the State Bank of Ohio," with a capital of \$100,000. Some \$225,489 is employed in various manufactures of the city. The aggregate amount of value of the different articles manufactured reaches annually over \$372,835.—The township is entirely free from debt; and has in her treasury, applicable to the payment of incidental expenses, a large surplus. During the past year there were shipped from the port of Piqua 24,284 barrels of flour, 164,871 bushels of corn, and 3,118,522 feet of lumber, besides a large quantity of other merchandise.

The above road is 86 miles in length. At the date of the circular, February 10, 1851, some 22½ miles of grubbing, grading and masonry was under contract, and it was then expected that the remainder would be let early this spring. The estimated cost of the road, ready for the superstructure, is \$4,000 per mile. Of the whole road, 60 miles is nearly a straight line. It will connect with the Indianapolis and Bellefontaine, the Central Ohio, and the Columbus and Cleveland railroads. Running west from Columbus, it passes through the west part of Franklin, and through Madison and Union

counties, to Urbana, the county seat of Champaign county, situated on the Mad River and Lake Erie railroad, thence to the city of Piqua, on the Miami canal; thence to Greenville, the county seat of Darke county, and thence to the State line, where it intersects a road being constructed by the citizens of Winchester, Indiana.

Memphis and Charleston Railroad.

At last accounts from New Orleans, Governor Jones had obtained subscriptions to the amount of \$100,000 in that city, to this great work.

We learn from a friend, that the citizens of Charleston have recently manifested a very lively interest in the success of this enterprise. Several of them, we understand, have transmitted assurances to Governor Jones that "Charleston is ready to subscribe whatever may be lacking after he concludes his labors at New Orleans."

Whether this be true or not, it cannot be doubted that Charleston has far more at stake in the completion of this, than in that of the Nashville and Chatanooga road, to which she subscribed \$500,000. Besides the immense tide of travel it will turn through Charleston, it will have a powerful tendency to make that city the importing mart of the South. When the road from Memphis to Charleston is completed, we believe that a large portion of the trade now thrown by our merchants into the lap of the North, will at once be transferred to Charleston. In many places in the south the opinion seems to be gaining ground (and the wish too) that New Orleans is to be the great exporting city, while Charleston is to be the great importing metropolis of the south.—*Memphis Eagle*.

The celebrated British engineer, Mr. Robt. Stephenson, in a recent visit to Egypt, has surveyed the country between Cairo and Alexandria, with a view to the construction of a railroad between the two places. Another account states that Mr. S. was then on his way to Suez to examine the route for a ship canal between the Mediterranean and the Red Sea. This survey is said to form part of a conjoint survey directed by England, France, and Austria, the former being represented by Mr. Stephenson, France by M. Paulin Talabot, and Austria by M. Negrelli. These latter have completed their labors; and on the completion of Mr. Stephenson's survey, the route will be determined on the conjoint evidence of the three reports.

Pennsylvania.

Railroad Route to Sunbury and Erie.—A report has recently been submitted to the State Senate, by Mr. Walker of Erie, with regard to the connection. Accompanying it is an important communication from G. A. Nicolls, Esq., of Reading, the intelligent Superintendent of the Reading railroad, which is full of information on the subject. He presents several routes which we briefly notice as follows.

1st. From Philadelphia to Schuylkill Haven, via Reading railroad; thence to Coal Castle; thence to Shamokin, and thence to Sunbury, via Danville and Pottsville railroad. Whole distance 150 miles, of which only *thirty-two* miles (from Coal Castle to Shamokin) would require constructing, at a cost of about \$1,280,000. The balance of 118 miles is already built and in operation.

2d. Philadelphia to Pottsville, and thence to Sunbury, via Mt. Carbon railroad. Whole distance 146 miles, of which *thirty-three* miles would require to be constructed, at an estimated cost of \$1,450,000.

3d. Philadelphia to Mount Carbon, and thence by the Millcreek railroad, via Port Carbon, St. Clair, New Boston and Shamokin to Sunbury—in all 152 miles, 118 of which are built, and 5 on the Millcreek road partially graded, leaving 29 to be constructed at a cost of about \$1,200,000.

4th. Philadelphia to Port Clinton, via Reading railroad; thence to Tamaqua, via Little Schuylkill road; thence to junction with Catawissa rail-

road; thence to Catawissa and thence to Sunbury—in all 167 miles, of which 98 are constructed, and thirty-five of the Catawissa road graded, leaving only 34 to be made, at a probable cost of \$1,350,000.

All these routes, says Mr. Nicolls, pass over or through the first and second coal fields of Pennsylvania, containing the richest measures of anthracite coal in the United States; accessible at every point, by any of the routes, and therefore abundantly able to afford a local coal business sufficient to justify their construction. For want of these improvements, thousands of acres of most valuable coal land in the second coal field, are held at a nominal value only, and rise or fall in price, as the prospect of a railroad improves or diminishes.

Mr. Nicolls further states that by the Schuylkill valley lies the shorter route from Philadelphia to Elmira (on the New York and Erie railroad) than from the latter point, by the same railroad, to the city of New York, thus:

Philadelphia to Elmira (via Port Clinton, Catawissa and Williamsport).....	265 miles.
New York to Elmira.....	283 "

Difference in favor of Philadelphia.... 18 "

Mr. Nicolls justly remarks that the northern tier of counties in Pennsylvania, is quite equal in fertility of soil, and far superior in mineral wealth, to its southern portion. The former have not increased in wealth or population, as have their more favored southern brethren, aided by large expenditures from the State and the capitalist. Let the northern territory of Pennsylvania, says he, have but a fraction of such outlay expended in constructing such an improvement as this railroad, and with the natural advantages already possessed, she will exhibit results as brilliant as ever witnessed in the history of our progress; and assist more materially in establishing, in 1860, the Keystone State in the proud position she is proved to occupy by the last census—the first of the Atlantic States in the increase of her population!

Wisconsin.

Milwaukee and Mississippi Railroad.—We have the report of the Engineer of this road, B. Kilbourne, Esq., of the operations of this company for the past year. Since its publication, the road has been opened for business to Waukesha, 20½ miles from Milwaukee. The cost of this section of the road is stated in the report as follows:—grubbing, grading, ballasting and bridging, \$68,069 52; timber ties for superstructure, \$14,344 26; rail, \$89,280; and laying same, \$6,400; other expenses, such as ballasting, engineering, salaries of different officers, etc., \$16,565 45; or a total of \$194,659 23. The cost of the line from Waukesha to Whitewater, 30 miles more, is estimated at \$265,747 23. Of this sum, \$89,665 36 is allowed for grubbing, grading, ballasting and bridging, \$19,640 for ties for superstructure, \$122,720 for iron rails, \$15,500 for laying track, and \$18,221 87 for engineering, superintendence and incidental expenses. For equipment, the estimate is \$95,850 58, of which amount \$21,850 58 have been heretofore expended. The cost of depots, shops, water stations, and other fixtures, will make a total of \$146,754 35; and including \$10,744 84 for right of way, real estate, etc., the whole cost of the road ready for business, from Milwaukee to Whitewater, a distance of 50 miles, will be \$607,160 81. There has been expended of this amount, on the first division, the following sums, viz:—east of Waukesha, for construction, \$189,474 23; west of Wau-

kesha, for iron, engineering and incidental expenses, \$88,300 10; and for fixtures and equipments, \$52,804 35. The sum of \$3,212 85 has also been expended on the second section.

Owing to the non-fulfillment on the part of the contractors of their contract, the company were compelled to relet such portions of the work as were delayed by the above cause. This, in part, increased the expense of the road from Milwaukee to Waukesha to \$15,007 23 beyond the estimates in the report of the board for 1849. The backwardness of stockholders in paying in their instalments, and other unforeseen and uncontrollable contingencies and accidents, have helped to bring about this necessary extra expenditure. The work as far as it has progressed, is stated to be of the highest character for excellence, and will favorably compare with any in the Union. Although the company had to encounter, as is usual in the construction of railroads in a thinly settled country, many difficulties and drawbacks, yet, without the aid of the State, which upon the projection of the road was expected, they have finished and put in running order, in the most substantial manner, over 20 miles of line, and have purchased iron and paid for sufficient for 30 miles more, which will carry the road to Whitewater, in the Rock river valley, a sufficient distance to secure to it the carriage of the lead of Wisconsin, most of which is now forwarded by way of New Orleans. As soon as the above point is reached the road will become the route to the lake of the immense products of that fertile valley. Three years more we hope will complete the extension of this road to the Mississippi valley. Such an extension would constitute one of the most important roads in the country. We have no doubt that it will prove a most profitable enterprise upon the completion of its first division.

We omitted at the time to notice the opening celebration of this road, which came off at Waukesha on the 25th ult. with great eclat, at which the Mayor of Milwaukee and other dignitaries made the customary speeches, and other proceedings proper in the premises were had. The event was hailed as an era in the history of Wisconsin. That State may be proud of the fact that, taking her age into consideration, she has built more miles of railroad than any other State in the Union. There every interest seems to move forward with equal pace.

Exhibit of the Terre Haute and Richmond Railroad.

We copy below a portion of the recent exhibit of this road. It is a work which has been pushed forward with an energy and vigor which have given to its securities a high character in the market, and caused them to be sought for, at an advance of the ordinary rates. It is not too much to say that no work of the kind in the country has been better managed, or in better hands, or has advanced more rapidly in public estimation. Its success is due principally to its able President, who has had the chief management of its affairs.

The Terre Haute and Richmond railroad company was chartered January 26, 1847; the road to extend from the west line of the State of Indiana to Richmond, near the Ohio State-line, a distance of 149 miles. The charter is liberal and perpetual.

By an amendment, passed on the 20th of January, 1851, the road was divided at Indianapolis, making two companies, entirely distinct and independent of each other, the western division from Indianapolis to the west line of the State retaining the original title.

The part of the road now in progress of construction, and which we propose to mortgage, extends from Terre Haute to Indianapolis, a distance of 72 2-10 miles; the grading and masonry is nearly completed, and the superstructure is under contract, and will be ready for the iron the first of May, and we expect to have it in running order by the 1st of December next. Iron of the most approved pattern of T rail, weighing sixty pounds to the yard, has been contracted for, to be delivered at New Orleans in season to be brought up the river during the spring freshets, and we have just been advised that most of it has been shipped to that city.

The requisite locomotives have also been contracted for, and will be finished by the time we are ready to use them.

The right of way, 100 feet in width, has been favorably secured, and the cost will not exceed \$5,500.

We think this road is the most important link in the great chain of railways uniting the Atlantic cities with the Mississippi; from Indianapolis various lines eastward, and from Terre Haute various lines branch south and westward, between which points this road forms a link without competition.

It runs through a tier of the most productive counties in the State, in all of which there is scarcely an acre of waste land, and they now contain a population of 79,805 inhabitants, which is scarcely a tithe of the population they can easily sustain. Along the line of the road are extensive quarries of lime stone, and in its immediate vicinity, for several miles along the line, are inexhaustible beds of bituminous coal. During the past winter upwards of 70,000 hogs have been packed in the county of Vigo, mostly in Terre Haute.

The portion of the country which must be tributary to this road, only awaits development to show the immense extent of its surplus productions, and insure to the road a vast local business.

To make some calculations of the through business and travel which it will take, examine a map of the country, and view its connection at Indianapolis with every leading road east, between the lakes and the Ohio river. The three main lines to New York, Philadelphia, and Baltimore, are all located, and not to exceed one hundred miles, on either line, that is not under contract or completed, and all will probably be finished in less than two years from the present time.

The Peru road has just been completed twenty miles; the Bellefontaine has twenty-eight miles finished and in successful operation, and twenty-four miles more will be completed the present year; the central line to Richmond and thence to Dayton, Ohio, is mostly under contract for grading, and will be pushed forward to early completion. A line will branch off from near Richmond to Eaton, Hamilton and Cincinnati, forming a very favorable line to that city; another line is also in progress of construction from Cincinnati by Lawrenceburgh, Greensburgh, and Shelbyville to Indianapolis; then, there is the Madison and Indianapolis road, with its immense business, and the Jeffersonville road, soon to intersect it at Columbus; all concentrating their westward-bound freight and travel at Indianapolis, and pouring the same inevitably upon this line of road.

Illinois has granted a liberal charter for a road from Alton to the State-line near Terre Haute; the road has been located, and a large amount of stock subscribed along the line, and its construction will doubtless be commenced the coming spring, and be completed within three years from the present time, and we are in hopes to soon obtain a charter direct to St. Louis. There is also a road in progress of construction from Evansville to Terre Haute, and twenty-eight miles will be completed the present year.

The road to Alton will doubtless branch to Springfield, thence to Quincy, and Hannibal, Missouri, connecting at that point with the road to St. Joseph.

It will also intersect the great central road of Illinois from Cairo to Chicago, at Shelbyville, thereby forming the shortest and most direct route of southern travel through Terre Haute and Indianapolis to the east.

The estimated cost of the road from Indianapolis

to Terre Haute, ready for the iron—as made by Captain Morris, Chief Engineer, on the 6th of January last, including the right of way, depots and machine shops, water stations, grading, bridging, superstructure, and one-third the Union tract and one-third the Union lot for a joint passenger depot at Indianapolis and incidental expenses—amount to \$498,451 52-100.

To meet which we have a subscription to the capital stock of the company, including the amount paid and payable to contractors, of \$450,250, and have made a loan of \$50,000, payable on the 1st of January, 1855, making in all \$500,250, which will be amply sufficient to prepare the road for the iron.

To Contractors.

ENGINEER'S OFFICE CENTRAL OHIO R. R., }
Zanesville, March 20, 1851. }

SEALED PROPOSALS for the Masonry of a Railroad Bridge across the Muskingum River at Zanesville, will be received at this office until the 15th of May next.

Also for the Iron or Wooden Superstructure of said Bridge, and for draw bridge across the Canal. Plans and specifications furnished on the 1st of May next. Bidders may furnish their own plans and specifications, if filed at this office prior to that day.

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NO. 8 LIBERTY STREET,
NEW YORK.

Railroad Instruments.

THEODOLITES, TRANSIT COMPASSES,
and Levels, with Fraunhoffer's Munich Glasses,
Surveyor's Compasses, Chains, Drawing Instruments,
Barometers, etc., all of the best quality and workmanship, for sale at unusually low prices, by
E. & G. W. BLUNT,
No. 179 Water St., cor. Burling Slip.
New York, May 19, 1849.

IRON.**Iron.**

Pig Iron, Anthracite and Charcoal; Boiler and Flue Iron, Spring and Blistered Steel, Nail Rods, Best Refined Bar Iron, Railroad Iron, Car Axles, Nails, Stove Castings, Cast Iron Pipes of all sizes, Railway Chairs of approved patterns for sale by
COLEMAN, KELTON & CAMPBELL,
109 N. Water St., Philadelphia.

Iron Store.

THE Subscribers, having the selling agency of the following named Rolling Mills, viz: Norristown, Rough and Ready, Kensington, Triadelphia, Pottsgrove and Thorndale, can supply Railroad Companies, Merchants and others, at the wholesale mill prices for bars of all sizes, sheets cut to order as large as 58 in. diameter; Railroad Iron, domestic and foreign; Locomotive tire welded to given size; Chairs and Spikes; Iron for shafting, locomotive and general machinery purposes; Cast, Shear, Blister and Spring Steel; Boiler rivets; Copper; Pig iron, etc., etc.

MORRIS, JONES & CO.,
Iron Merchants,
Schuylkill 7th and Market Sts., Philadelphia.
August 16, 1849. 1y33

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. **J. F. WINSLOW, President**

Troy, N. Y.
ERASTUS CORNING, Albany;
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md

November 6, 1848.

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phoenix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehanna river; which two establishments are now turning out upwards of 1800 tons of finished rails per month.

Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.

REEVES, BUCK & CO.
45 North Water St., Philadelphia.

March 15, 1849.

**L A P — W E L D E D
WROUGHT IRON TUBES**

FOR

TUBULAR BOILERS,
FROM ONE AND A QUARTER TO SEVEN
INCHES IN DIAMETER.

THE ONLY Tubes of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER & SON, Patentees,
28 Platt street, New York.

Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron.

THOMAS B. SANDS & CO.,
73 New street,
New York.

February 3, 1849.

Glendon Refined Iron.

Round Iron, Band Iron, Hoop Iron,
Square " Flat " Scroll "
Axles, Locomotive Tyres,

Manufactured at the Glendon Mills, East Boston, for sale by:
GEORGE GARDNER & CO.,
5 Liberty Square, Boston, Mass.
Sept. 15, 1849. 3m37

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for rail roads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.

JOHN F. WINSLOW, Agent.
Albany Iron and Nail Works, Troy, N. Y.
The above Spikes may be had at factory prices, of Erastus Corning & Co. Albany; Merrill & Co., New York; E. Pratt & Brother, Baltimore, Md.

AMERICAN PIG IRON.

"POUGHKEEPSIE" brand, Dutchess Co., N. Y.
"GLENDALE" brand, Lehigh county, Pa.
Orders for the above two well known brands will be received, and promptly executed, by

J. & L. TUCKERMAN,
69 West St., New York.

**Faggotted Car and Engine
Axles**

FORGED by **RANSTEAD, DEARBORN & Co.,**
Boston, Mass.
These Axles enjoy the highest reputation for excellence, and are all warranted.

Bowling Iron. Stamped B.O.

Railway Tire Bars
Locomotive and other Axles
Boiler Plates
Rivet Iron
Locomotive Frame do
Bars,
and every other description of this superior Iron.

The subscribers, agents for the sale of Bowling Iron, are prepared to execute orders for importation, especially for railway and machinery uses, with despatch from the manufacturers.

RAYMOND & FULLERTON, 45 Cliff st.

**Ibbotson, Brothers & Co's
CELEBRATED CAST STEEL**

AND

Best Cast Steel Royal Improved Files, well known as better adapted for Engineers' and Machinists' purposes than any now in use in the United States.

Every description of Square, Octagon, Flat and Round Cast Steel, Sheet, Shovel and Railway Spring Steel, etc., and Steel to order for any purposes—manufactured at their works in Sheffield—and universally known by the old stamp "Globe."

HENRY I. IBBOTSON, Agent,
218 Pearl st., New York.

**Smith & Tyson,,
IRON, COMMISSION MERCHANTS,
BALTIMORE.**

REFINED Juniata Charcoal Billet Iron for Wire.
Do. for Bridging, of great strength.

Flat Rock, Boiler and Flue Iron, rolled to pattern.
Elba, Wheel Iron of great strength and superior chiling properties. Elba Forge Iron, American Shot Iron, Cut Nails, Spikes and Brads, Nail and Spike rods, Railroad Spikes of superior quality, Wrought Chair plates of any pattern, punched or plain,

**WILLIAM JESSOP & SONS'
CELEBRATED CAST-STEEL.**

The subscribers have on hand, and are constantly receiving from their manufactory,

PARK WORKS, SHEFFIELD,

Double Refined Cast Steel—square, flat and octagon.
Best warranted Cast Steel—square, flat and octagon.
Best double and single Shear Steel—warranted.
Machinery Steel—round.

Best and 2d gy. Sheet Steel—for saws and other purposes.

German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.

Genuine "Sykes," L. Blister Steel.

Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by

WM. JESSOP & SONS,

91 John street, New York.

Also by their Agents—

Curtis & Hand, 47 Commerce street, Philadelphia.

Alex'r Fullerton & Co., 119 Milk street, Boston.

Stickney & Beatty, South Charles street, Baltimore.

May 6, 1848.

Railroad Iron.

B. O. Railway Tires, Railway Wheels,
Scotch Pig Iron, Tin Plates and Banca Tin,
Muntz Patent Metal Sheathing,
Baltimore Copper.

Contracts for Rails made on behalf of the manufacturers, for delivery at any ports in the United States, at fixed prices.

Bowling Tires and Tire Bars and Scotch Pigs imported to order.

Muntz's Ship-sheathing, and a general stock of Tin Plates and Banca Tin in store, and for sale by

RAYMOND & FULLERTON, 45 Cliff st.

IRONDALE PIG METAL, MANUFACTURED
and for sale by the Bloomsburg Railroad Iron Co.
LINDLEY FISHER, Treasurer.

75 N. Water St., Philadelphia.

Car Wheel Iron.

THE celebrated cold blast "Conowingo" Pig Iron, for Railroad Wheels, Chilled Rolls, etc., for sale by

E. PRATT & BROTHER,

Baltimore, Md.

Railroad Iron.

3,000 TONS C. L. MAKE 63½ lbs. per yard, now landing and to arrive.

Also contracts made for future delivery of above superior make English Iron.

300 Tons Banks Best Iron, Round, Square and Flat.
200 " English Bar " " " "

10 " 9-16 Square Iron for Railroad Spikes.
For sale in lots to suit purchasers by

DAVID W. WETMORE.

New York, March 26, 1850. 3m

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

**JOHNSON, CAMELL & Co's
Celebrated Cast Steel,**

AND
ENGINEERING AND MACHINE FILES,
which for quality and adaptation to mechanical uses, have been proved superior to any in the United States. Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cyclops Steel Works Sheffield.

JOHNSON, CAMELL & CO.,
100 William St., New York.

November 23 1849.

Bowling Tire Bars.

40 Best Flange Bars 5½x2 inches, 11 feet long.
40 " " 5½x2 " 7 feet 8 in. long.
40 " Flat " 6x2 " 11 feet long.
40 " " 6x2 " 7 feet 8 in. long.

Now in store and for sale by

RAYMOND & FULLERTON;
45 Cliff street.

**Wheel, Forge and Foundry
Iron.**

LOCUST GROVE Wheel Iron of great strength and superior chilling property.

Balt. Charcoal Forge Iron, from Patuxent, Curtis Creek and Gunpowder furnaces.

Elkridge Foundry Iron, of superior strength and softness. Anthracite and Charcoal Iron from Pennsylvania and Virginia. Gas and Water Pipes, Lamp Posts from Elkridge furnace.

LEMMON & GLENN,

5m9 62 Buchanan's Wharf, Baltimore.

Railroad Iron.

1650 Tons, weighing about 61 lbs. per yard, 40 tons, weighing about 52 lbs. per yard, and 825 tons, weighing about 53½ lbs. per yard, of the latest and most approved patterns of T rail, for sale by

BOORMAN, JOHNSTON & CO.,
119 Greenwich street.

New York, Aug. 26, 1850.

N.B.—B. J. & Co are also prepared to take contracts for English rails, delivered in any of the Atlantic ports of the United States.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract to deliver Rails of superior quality, and of any size or pattern, to any ports of discharge in the United States.

COLLINS, VOSE & CO.,
74 South St.

New York, June 1, 1850.

Tredegar Iron Works.

ROLLING MILL FOUNDRY AND MACHINE

SHOPS. The undersigned continues to manufacture at his Works in this city (from best charcoal metal) Bar Iron of every description, embracing—Rounds and Squares, from ½ to 5 inches diameter. Flats, from ½ to 7 inches, all thicknesses.

Bands and Scrolls, all sizes. Boiler plate and Plough Iron. Railroad and Locomotive Axles and Tires. Locomotive Frames, Spikes and Plates. Hoops, Ovals, Half Ovals, Half Rounds, Angle, T, L, and indeed every description of Iron usually manufactured, all of which he warrants to be equal to any made in this country. He also manufactures at his Foundry and Machine Shops all descriptions of Railroad Work, say, Locomotives, Railroad Wheels and Axles complete and ready for the road, Railroad Chairs, etc. Also, Marine and Stationary Engines all sizes, Sugar mills and Engines, Horse mills, and every kind of Machinery usually required for the operations of the country. He has paid particular attention to getting up machinery, etc., for Gold Mine operations, and those in want of such work might find it to their advantage to give him a call.

J. R. ANDERSON.

Richmond, Va., Sept. 10, 1850.

CUT NAILS OF BEST QUALITY, BAR IRON
(including Flat Rails) manufactured and for sale by
FISHER, MORGAN & CO.,
75 N. Water St., Philadelphia.

Car Wheel Iron.

100 Tons "Columbia" No. 2 Cold Blast Charcoal Iron.

300 Tons "Salisbury" No. 1, do. do.
For sale by CHARLES T. GILBERT,
No. 80 Broad st.

New York, Sept. 21, 1850.

Railroad Spikes.

THE subscribers are prepared to make and execute contracts for Railroad Spikes of a superior quality, manufactured by the New Jersey Iron Company, at Boonton. DUDLEY B. FULLER & CO.,
139 Greenwich st. corner of Cedar.

**S. S. Keyser & Co.,
IRON WAREHOUSE,**

Corner of South and Pratt Streets,
BALTIMORE, MD.

Selling Agents for the Rough and Ready Bar Iron and Elk Boiler and Flue Iron Rolling Mills, Sarah and Taylor Furnaces, and Wrightsville Hollow Ware Foundry, and Dealers in Bar and Sheet Iron, and Cast, Sheer, German, Blister, Spring and Electrodes Steel, etc., etc.

Tubes.

The undersigned are in direct communication with the Birmingham Patent Lap Welded Iron Tube Company, for the sale of their very excellent and superior Boiler and Gas Tubes in large or small quantities.—These Tubes are sold very extensively in England and on the continent of Europe are sold exclusively by

WM. BIRD & CO.,

Iron and Tinplate Merchants,
44 Wall st., New York

5 Martin's Lane, City, London,
and 140 Buchanan st., Glasgow.

Railroad Spikes, Boiler Rivets, etc.

THE Subscribers, Agents for the sale of James S. Spencer's, Jr., Railroad and Boat Spikes, Boiler Rivets, and Wrought Iron Chairs for Railroads, made at his Works near this city, will execute all orders with promptness, despatch, and of the best quality.

ALSO IMPORTERS of English refined and Merchant bar Iron; Extra refined Car and Locomotive Axles (from 3½ to 6½ inches in diameter); B. O. Locomotive Tire (welded by Baldwin). Also, supply Boiler and Flue Iron cut to pattern or otherwise.—Spring, Shear, and Cast Steel, etc., etc.

T. & E. GEORGE.

Philadelphia, November 14, 1850.

Railroad Iron.

THE UNDERSIGNED, HAVING made arrangements abroad, are prepared to contract for the delivery of Foreign rails, of approved brands upon the most favorable terms.

They will also make contracts for American rails, made at their Trenton works, from Andover Iron, in whole or in part, as may be agreed upon.

They are prepared to furnish Telegraph, Spring and Market Wire; Braziers and Wire Rods; Rivets and Merchant Bars to order, all made exclusively from Andover Iron. The attention of parties who require iron of the very best quality for special purposes, is respectfully invited.

COOPER & HEWITT,
17 Burling Slip, New York.

February 15, 1850.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract for the delivery of English, Welsh and Scotch Rails, of any pattern and weight, also for every description of English, Welsh, Scotch, and Swedish Iron, Railway Chairs and Spikes, Rivets, Bolts, Nuts, Washers, Chain Cables, Anchors, Tin Plates, German Spelter, Iron Castings, and every description of Machinery.

WILLIAM BIRD & CO.,
Iron and Tin Plate Merchants,
44 Wall st., New York.

And at 5 Martin's Lane, City, London,
and 140 Buchanan st. Glasgow.

July 27th, 1850.

Railroad Iron.

THE "Montour Iron Company" is prepared to execute orders for Rails of the usual patterns and weights, and of any required length not exceeding 30 feet per rail. Apply at the office of the Company, No. 73 South 4th st., Philadelphia,

Or to the Agents,
CHOUTEAU, MERLE & SANFORD,
No. 51 New st., New York.

September, 1850.

Railway Iron.

THE Subscribers will contract to deliver, in the course of the ensuing Spring and Summer, the best English Rails, made by a particular specification, and of any pattern required.

DAVIS, BROOKS & CO.,
68 Broad st.

On hand for sale, English rails of 58 lbs. to the yard, made by particular specifications.
January 10, 1851. 2m

Railroad Iron for Sale.

THE Mansfield and Sandusky City Railroad Co. have on hand from twelve to fifteen hundred tons of American Flat Bar Railroad Iron, weighing 33 lbs. to the lineal yard, which they offer for sale at reasonable rates.

The iron has been in use about four years, and is sound and in good condition. It is 2½ by ½.

It will be ready for delivery at short intervals between the opening of navigation in the spring and the 1st September next.

For further particulars inquire at the office of the company at Sandusky City, Ohio.

C. G. FORBES, President.

December 24, 1850.

UNION WORKS,

North street, opposite the Railroad Depot,
BALTIMORE.

Poole & Hunt,

Manufacturers of Steam Engines and Mill Gearing, Machinists' Tools, and all kinds of heavy and light Machinery.

Also put up Arrangements of Wrought Iron Pipes for heating buildings and conveying steam or water. Castings of every kind furnished at short notice.

Every exertion will be made to insure the satisfaction of customers.

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.

August, 16, 1849.

6m33

Railroad Paint.

FOR depot buildings, bridges, burthen cars, wheels and axles, pipes, steam joints, fences, and every description of work requiring protection from the action of the elements. Price per barrel of 300 pounds, nine dollars.

Orders addressed to J. M. HALL, 36 South street, New York, will receive prompt attention.
March 18, 1851. 3m*

To Engineers and Ship Builders.

THE Advertiser is desirous of a situation in a respectable concern, he has acquired a practical knowledge of his business in the establishment of R. Napier, Esq., Glasgow, has since for several years had the management of the works of an extensive Steam Packet Co., for whom he designed and built some Iron Screw Ships, whose capabilities and performances give the highest satisfaction. While acquainted with all the most approved modes of construction of marine engines, he is prepared to submit original designs. In modelling and draughting he has had much and successful experience. Can produce the highest testimonials as to character and abilities from the first engineer on the Clyde.

Address ENGINEER, box 2315 lower postoffice.

**Lawrence Scientific School,
HARVARD UNIVERSITY,
CAMBRIDGE MASSACHUSETTS.**

SPECIAL Students attend daily from 9 o'clock A. M. till 5 o'clock P. M., in the Laboratories, and under the direction of the following Professors:

Louis Agassiz, L.L.D., Professor of Geology and Zoology. Jeffreys Wyman, M.D., Professor of Comparative Anatomy and Physiology. Henry L. Eustis, A.M., Professor of Engineering. Eben Norton Horsford, Professor of Chemistry.

Instruction is also given by Prof. Peirce in Mathematics, Prof. Lovering in Physics, and the Messrs. Bond at the Astronomical Observatory.

All lectures delivered to under graduates of the College are free to members of the Scientific School.

For further information apply to

E. N. HORSFORD, Dean of the Faculty.

Boston Locomotive Works,

—Late Hinkley & Drury—
No. 380 Harrison Avenue,
BOSTON.

Locomotive and Stationary Steam Engines; Boilers; Iron, Brass, Copper and Composition Castings; Coppersmith's Work, and all kinds of Railroad Machinery furnished at short notice.

ALSO

**Van Kuran's Improved Railroad Wheel,**

Patented May 1, 1849. Manufactured under the personal superintendence of the Patentee, as above.

Orders for any quantity of wheels executed with dispatch, and wheels and axles fitted in the very best manner and at the lowest rates. Address

DANIEL F. CHILDS, Treasurer, Boston.

**Providence Tool Co.,**

MANUFACTURERS OF

Plane Irons, Tooth Irons, Soft Moulding and Rabbet Irons, Cornice Irons, Plow Bits, and Planing Machine Knives:

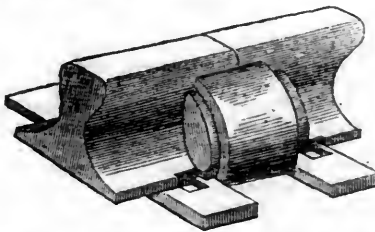
NUTS, WASHERS AND BOLTS.

—ALSO—

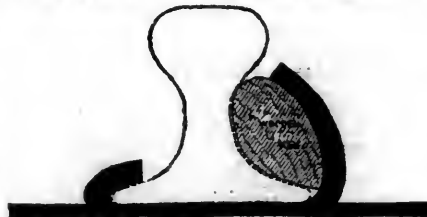
PLATE HINGES AND PICK AXES.

They are prepared to execute orders for all descriptions of Cold Punching and Job Work.

WM. FIELD, Agent. RUFUS WATERMAN, Treas.
PROVIDENCE, R. I.

**Railroad Iron,
SPIKES, AND****WROUGHT IRON CHAIRS.**

THE Undersigned, Agent for Manufacturers, is authorized to contract for Welsh Railroad Iron of the best quality, and deliverable at any port on favorable terms, also Spikes and Wrought Iron Chairs, made from the best iron, and of any pattern and weight. The new Wrought Iron Chair, with the introduction of a "Key," as per the annexed plan, will be found a great improvement on the old pattern.



Boiler Plates of superior quality, perfect regularity in the squaring and thickness, and made with great care.

Samples can be seen at the office, No. 20 Beaver st.
CHARLES ILLIUS.

TO RAILROAD COMPANIES, CAR MANUFACTURERS, etc.

THE Undersigned hereby gives public notice, that the Commissioner of Patents, pursuant to his decision in relation thereto, on the 8th day of October, 1850, issued to him a Patent for the sole right to manufacture, and exclusive use of the INDIA RUBBER CAR SPRING, on account of priority of invention of said Spring.

F. M. RAY
New York, Oct. 23, 1850.

Iron Trade of Pennsylvania.

DOCUMENTS and Statistics relating to the Manufacture of Iron in the State of Pennsylvania—giving a history of the manufacture from its commencement to this date, illustrated by diagrams. Also tables giving the address and capacity of every establishment in the State. Prepared by direction of the late convention of the trade held in Philadelphia. For sale by

LINDSAY & BLACKISTON, Philadelphia.

FIELDING LUCAS, Jr., Baltimore.

HENRY G. NICHOLS, 79 Water st., N. Y.

or at this office—price \$1 00.

It will be sent by mail to any order enclosing the money, and post paid.

Ulster Iron.

THE ULSTER IRON WORKS, Saugerties, N. Y., continue in full operation. Orders for round, square, flat, band, hoop and scroll iron, will be received and promptly executed by

J. & L. TUCKERMAN,
69 West St., New York.

Patent Machine Picket Fence

SIX DIFFERENT STYLES of this fence are now made by patent machinery; and is by far the most economical fence for Railroads, Farms, Yards, etc., ever yet offered to the public, costing only from 4 to 30 cents per foot, according to pattern; and is so put up as to be shipped at a trifling expense. Full particulars will be furnished, by addressing the subscriber, to whom all orders should be sent.

N. STRATTON, Troy, N. Y.

Lovegrove's Patent Cast Iron Water and Gas Pipes.

THE Subscriber, the Inventor and Patentee of the Centrifugal mode of giving form to metallic substances while in a molten state, is preparing to make Cast Iron Water and Gas Pipes, of any dimensions, at prices much lower than they can be made in the old manner, and the pipes warranted to stand a pressure of three hundred pounds to the square inch, and to be soft enough to drill. Steam Engines and all kinds of machinery. Cast Iron Doors and Frames, and Mill Castings of every description, made to order.

THOMAS J. LOVEGROVE,

Machinist and Founder,

West Falls Avenue, below Pratt st., Baltimore.

American Railroad Iron.

1000 Tons, weighing 50 lbs. per yard, manufactured by Reeves, Abbott & Co., at the Safe Harbor Iron Works, and now lying in yard at Brooklyn, for sale by

CHOUTEAU, MERLE & SANFORD,
No. 51 New street.

Spikes, Spikes, Spikes.

ANY person wishing a simple and effective Spike Machine, or a number of them, may be supplied by addressing

J. W. FLACK,
Troy, N. Y.

Railroad Iron.

2000 Tons, weighing 58 pounds per lineal yard, of the most approved pattern of T rails, in store and to arrive, for sale by

COLLINS, VOSE & CO.,
74 South St.

New York, June 1, 1850.

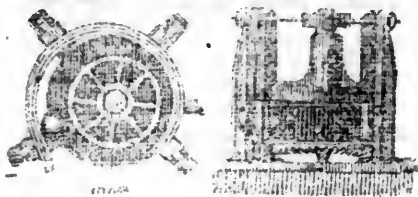
India-rubber for Railroad Cos.

RUBBER SPRINGS—Bearing and Puller—Fuller's Patent—Hose from 1 to 12" diameter. Suction Hose. Steam Packing—um 1-16 to 2 in. thick. Rubber and Gutta Percha Bands. These articles are all warranted to give satisfaction, made under Tyer & Helm's patent, issued January, 1849. No lead used in the composition. Will stand much higher heat than that called "Goodyear's," and is in all respects better than any in use. Proprietors of railroads do not be overcharged by pretenders.

HORACE H. DAY,

Warehouse 23 Courtlandt street.

New York, May 21, 1849.

MACHINERY.**Henry Burden's Patent Revolving Shingling Machine.**

THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phoenixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll sounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y.

P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery for making Spikes, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

CHILLED RAILROAD WHEELS.—THE UNDERSIGNED are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

Brown's Old Established SCALE WARE HOUSE,
NO. 234 WATER ST., NEW YORK.

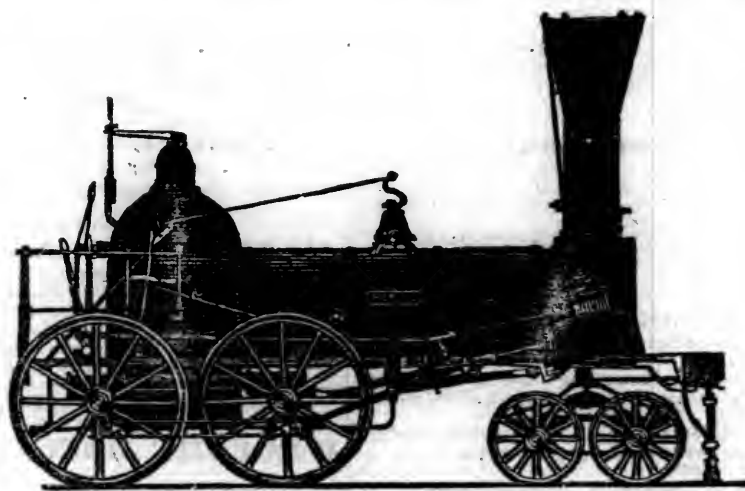
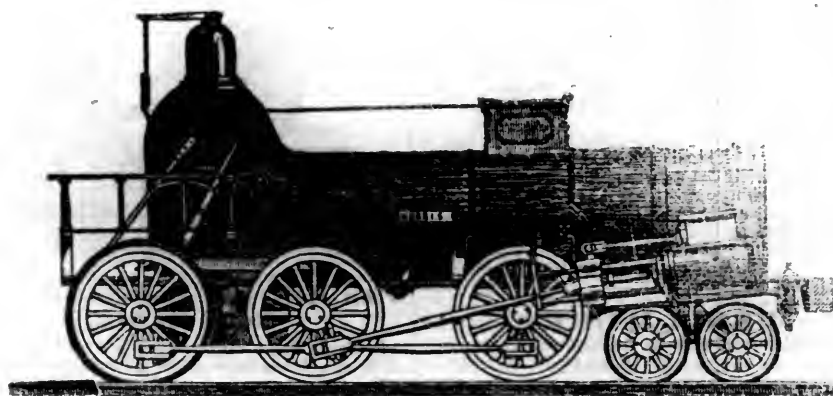
THE Subscriber, Practical Manufacturer of Scales of every description, respectfully asks the attention of Railroad Companies to his Improved Wrought Iron Railroad Track and Depot Scales which for strength, durability, accuracy, convenience in weighing, and beauty of workmanship, are not surpassed by any others in this country.

He is aware that this is rather a bold assertion for him to make, yet he can say with confidence that they have but to be tried to give them precedence over all others.

J. L. BROWN.

Bank Scales made to order, and all Scales of his make Warranted in every particular.

References given if required

NORRIS' LOCOMOTIVE WORKS.
BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,

THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size. Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tyres are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS

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AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

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ASSISTANT EDITORS,

J. T. HODGE, *For Mining and Metallurgy.*
GEN. CHAS. T. JAMES, *For Manufactures and the
Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & Co., 136 NASSAU ST.

Saturday, April 12, 1851.

European and North American Railway. SPEECH OF GENERAL DEARBORN.

In our paper of the 1st of February last, we prepared for publication the speech of Hon. H. A. S. Dearborn, of Massachusetts, delivered at the great Convention held at Portland in aid of this project, on the 31st of July last. By an unfortunate oversight, a portion of the speech was entirely omitted. We were very much annoyed at the mortifying blunder, and we take the only means in our power to correct it, by publishing it again, which we hope General Dearborn will receive as a sufficient apology.

Among the fine things said at the Portland Convention, we think it may be safely asserted that the speech of the Hon. H. A. S. Dearborn, of Massachusetts, bore off the palm. The long public services of Gen. Dearborn, his invaluable experience in all the great questions of public improvement in Massachusetts, his varied attainments in many

departments of scientific enquiry, especially in those of physical geography and commercial statistics, gave much force to his remarks. We have been told by more than one gentleman present, that his allusion to the public services and hardships of Admiral Owen was the finest specimen of stage effect ever produced.

We think the allusion to the great statesman and benefactor of the Empire State, ought not to be forgotten, at least upon the men of our day. Is it not due to the memory of Clinton, that a fitting memorial should place the record of his achievements beyond the reach of forgetfulness. Gen. D. spoke in substance as follows:

I feel utterly unable to occupy so large a space as is opened by the Resolution before us—a resolution to establish a highway that is to become the connecting link, and the great thoroughfare, between two continents, to do it well, to do it speedily. I feel satisfied that it *can* be done; I feel satisfied that it *will* be done—and that, old as I am, I may yet pass over it; that, if the Lord spares my life for five years, I may go to St. John, to Halifax, to Ireland, to London; and crossing from Dover to Calais, I may go from thence by railway to the furthest extremity of Europe. [Cheers.] This may, by some, be deemed extravagant; but already the necessary steps have been taken for the construction of a railway from Calcutta to Bombay. The route from Calais to the Bosphorus may be considered as certain, within a less number of years than I have indicated. Nor shall this highway of nations stop there; for I believe that some Stephenson may yet arise, to throw an iron arch across the Strait between Europe and Asia; and that a visit to the Euphrates may be, to the traveller, but an ordinary excursion. [Cheers.]

It is but twenty-five years since I proposed that a railroad should be constructed from Boston to the Hudson; and that a tunnel would be made through the Hoosic Mountain; for this I was termed an *idiot*! An idiot I may be; but the road is made, and the tunnel through the Hoosic Mountain is in course of construction. [Cheers.] Formerly, scientific men dealt in abstract theories; now, we find the workmen themselves entering into the halls of science, illustrating theory by practice, and teaching knowledge to the world. The time was when weaving was a mystery; dyeing was one of the occult sciences; and even the manufacture of soap depended upon good luck for a favorable result.—But, by the help of practical science, all these matters are now reduced to a certainty.

Gentlemen—I feel satisfied that this railway *must* be constructed. It is true, there are not wanting those who doubt of its success. But let not this deter you. There are not wanting those who will doubt that the sun shines at mid-day, unless they can see it for themselves.

Gentlemen—If all do not comprehend the importance, the practicability, and the profit of this great project, there are enough who do comprehend, to carry the measure to a successful termination. It was forty years after the discovery, by Newton, of the theory of gravitation, before it could be comprehended; now it is practically understood by every school boy. It is but twenty years since the British nation sustained the loss of their statesman, Huskisson, struck down by a car in England, in the first passenger train that passed over its iron rails; but now railways have become the ordinary means of traffic and transportation. We dare even to propose a line to the Pacific; and it is as certain that that line will be constructed, as that the line now in contemplation will extend to the Atlantic shores of Nova Scotia. [Cheers.]

I well remember when the construction of a railway, three miles in length—from a granite quarry in Quincy to Boston bay—was projected; it was esteemed a wonderful undertaking, and looked upon as wild and chimerical. Now, there are over 7,000 miles of railroad in the country. These, connecting with the present vast projects, will almost entirely encircle the world. And these plans will be accomplished, either with the aid of governments, or in spite of them, for it is not in their power to stop them.

All history and all experience show that the necessities of commerce seek out the nearest and shortest routes for travel and business. Calais and Dover have been the points of embarkation, ever since the invasion of Cæsar; and for no other reason but because they were the nearest points between the Island of Great Britain and the continent of Europe. Cape Sunium was the point of concentration for the trade of Greece, simply because it was the nearest point to Egypt.

Why was the Appian Way extended from Capua to Brundisium, on the Adriatic Gulf? Because that was the nearest good harbor near the narrowest place in the Adriatic Sea, in the most direct line from Rome to Constantinople.

Why was the suspension bridge of Telford extended across the Menai Strait, to the Island of Anglesey; and the still more wonderful work of modern times—the Britannia Bridge across the same Strait? Because it was in the most direct line from London to Dublin and Ireland.

If you will examine the map of the world, you will find that in all time past, the points of continents or islands which approach the nearest, have become the highways of their intercourse and commerce. It is for this reason that I believe that the highway for the trade and communication between this country and Europe must be made to the eastern coast of Nova-Scotia. [Cheers.]

We read in ancient history, that Cato once produced before the Roman Senate a bunch of fresh figs, taken from a tree in Carthage only four days before; and I shall see the time when the Rose of England, blending the colors of York and Lancas-

ter, and plucked from the garden of Windsor, shall be twined freshly in America with the beautiful prairie flower "the Queen of the West" and, bound together with the Lilies of Canada, shall compose a fragrant wreath, wherewith to crown the Statue of Concord in the Temple of Peace! [Tremendous applause.]

Look at the map of America and see who will be benefited by the completion of this undertaking?—all of us—from the country bordering on the waters of the St. Lawrence and on the Lakes of Canada, to the fertile valleys of the Mississippi and its tributary streams. There are no less than fifteen States of this Union directly interested in the line, and there are millions upon this territory who will be rejoiced at the prospect opened before them. Fifteen years ago, there was one small schooner for passengers on Lake Erie belonging to the Americans—now the country is intersected by railways, and the Lakes are covered with steamers. Then we were more widely separated from the inhabitants on the borders of these Lakes than we are now from Hindostan. [Cheers.]

But not only will the world be benefited by the productions of these fertile districts being widely distributed, but by freedom of intercourse asperities and misunderstandings between great nations will be softened and removed, and at all events a firm and lasting friendship will be produced between two great nations, speaking the same language, and advocating the same principles of civil and religious liberty; proud am I that the bones of my ancestors lie buried within the shadow of the Cathedral of Exeter; and there is not one worthy descendant of the heroes of Runnymede, wherever he may dwell, that I do not look upon as a brother. [Prolonged cheers.]

The destiny of the Anglo Saxons has but commenced, and more has been done by them for the world, for the common cause of humanity, since my boyhood, than during all time preceding. Man is learning to imitate his Maker, and to do good unto all; there is no time for vice; occupation of the body and the mind is necessary for the age in which we live. Could the commerce and industry of England have been fostered and protected but for the honesty and integrity of her Statesmen? She has taught the nations that right and justice must be done, and where ever, at home or abroad, the flags of England and America float upon the breeze, there her subjects and our citizens, and all speaking our common language, are protected from insult and from wrong. [Cheers.]

To project and to execute works of the description of this, which we are now considering, are among the greatest of public achievements. Our ablest Statesmen have always considered the construction of roads as the means of diffusing knowledge and of increasing the comfort, wealth, and happiness of our country. No sooner was peace declared than George Washington devoted his time, talents and industry to the subject. Gallatin, and other able Statesmen, have expressed the same principles and acted upon them; and in more recent times companies of wealthy and energetic men have carried out the plans which Washington and Gallatin so ably designed and projected. [Cheers.]

I was on the spot where the city of Buffalo now stands, when it was a mere village; and twenty-five years ago it was an inconsiderable town of about 5,000 inhabitants. It is now a city numbering 50,000 people. When De Witt Clinton first opened his great canal to Buffalo, that was almost the extent to which travellers could go west; and the trade was of scarcely any moment, except in furs and in the productions of the forest. Now, it is on the way to the granary of the earth; and the trade which reaches the Erie Canal, from beyond it, is far greater than all it receives this side of Buffalo. A few years ago, standing on one of the Piers at Buffalo, and looking out upon the vessels that moved upon the Lake, and looking back upon the city, spreading itself upon the shore behind me, I felt something of a patriotic sentiment arising within me, when I thought how much was due to his memory. I thought if I could have my way, a colossal statue of Clinton should be raised upon the pier that projects farthest into the Lake,—in the left hand holding a scroll pointing down the line of the Erie Canal—the right hand pointing

westward to the Pacific shores. [Tremendous cheers.]

The project we are now considering is one of equal importance and the accomplishment of which will confer equal honor upon its authors. Vast as the enterprise is, it can still be accomplished.

We must prove that this work CAN BE DONE,—that it WILL BE USEFUL,—that it WILL BE PROFITABLE; and if this can be done, we need not fear that the means will be wanting.

The public mind is already in a great measure prepared for the proper appreciation of a scheme of this international character. If twenty-five years ago, a British Statesman had risen in his place in Parliament, and proposed to throw an iron bridge across the Menai Strait, at a cost of two millions, I have no doubt that some benevolent physician would have been ready with a certificate of lunacy, and that the gentleman who should be so rash and credulous as to propose this, and to believe in the possibility of its accomplishment, would have been promptly provided for in an hospital for the insane! Now we have dared to propose far mightier projects—we would lay the iron rail across the broad continent of America, and would stand upon the shores of the Pacific! But think you we shall only stand upon its shores? No; we must build ships and cross the waters to the far distant shores of China, and shall carry the productions of that country back to us and to you, at its antipodes. [Cheers.]

Gentlemen, I am proud to see among us a gentleman of the naval service of Great Britain*—one who has earned a higher reputation than that which follows upon victory. Some fifteen years since, a work was put into my hand by a friend—A Survey of the Coast of Africa and the Persian Gulf, by a British Naval Officer—it was a scientific and pacific labor; but the service was one of difficulty and danger, far more appalling than the battles of the Nile or of Trafalgar. Sickness and death came upon their expedition, recruits were obtained from England, but man after man fell victims to the fatal disease, until, at the close of the expedition, he alone of all that first went out upon it, he, of officers and men, was the sole survivor! I thought, if I were Sovereign of England, I would make him an Admiral of the White, under the Banner of Peace! This duty was nobly done, and many other duties has he since done for his country, and yet, although time has impaired his strength and frosted his venerable head, you see, gentlemen, that he cannot remain, but has left his home, in the British Provinces, and is here amongst us, ready at the call of his country and of the world, in the front rank of this our enterprise. [Tremendous cheers.]

The speaker closed his remarks, of which the reporter has given but the faintest outline, with a beautiful sentiment of fraternal affection towards the delegates from the Provinces; and concluded by expressing the prayer, that God would give them glory, peace, riches, and happiness.

Upon the conclusion of the speech, Mr. WILMOT sprang to his feet, and proposed three cheers for Gen. Dearborn, which were given with the most hearty enthusiasm. The speech was a most beautiful and eloquent production; and so pleased with it were the delegation from New Brunswick, that they called upon Gen. D. in a body, to express to him their admiration.

Three hearty and generous cheers were proposed and given to Rear Admiral Owen.

From Appleton's Mechanics' Magazine. The Application of Iron to Railway Structures.

Continued from page 213.

In the third series, comprising ten experiments, the bars employed were 9 feet long between supports, 4 inches broad, and 1½ inch deep, being calculated to break with the same statical pressure as the bars used in the second series, but being more flexible. The statical breaking weights were 3968 pounds, and 4332 pounds; the greatest observed deflection (produced by 3968 pounds,) 4.56 inches, and 3.96 inches. By giving to the load a velocity of 15 feet per second, the breaking-weights became 3296 pounds, and 3303 pounds; maximum observed deflection 4.85 inches. With a velocity equal to 29 feet per second, the breaking weight

was reduced to 2670 pounds, and the maximum deflection was 4.14 inches. At 36 feet per second, a load of 2176 pounds broke one of the bars in one experiment, and 2060 pounds broke both the bars in another experiment; greatest observed deflection 3.88 inches. At 43 feet per second, 1778 pounds broke both bars, the greatest deflection being 1.54 inch.

In the fourth series, comprising four experiments, the bars used were of Clyde iron (No. 3,) 9 feet long, 2 inches broad, and 3 inches deep. The statical deflection produced by 1120 pounds was .16 and .17 inch; statical breaking weights 9882 pounds, with ultimate deflection of 1.91 inch, and 9882 pounds, with ultimate deflection of 2.33 inches. With a velocity of 43 feet per second, a load of 3614 pounds produced a deflection of 1.54 inch (the statical deflection of 3643 pounds being only .61 inch,) and a load of 2996 pounds produced a deflection of 1.14 inch, while its statical deflection, as proved by bringing it again to a state of rest, was only .52 inch.

Three series of experiments were conducted on bars 9 feet long between the supports, showing the amount of deflection obtained when the weight is brought on suddenly without impact, and also the breaking weights. The results are as follows:—

First Series.—Bars of 9 feet long, 1 inch broad, and 2 inches deep. Mean weight of bars, 66.5 lbs. Velocity in feet per sec... 0 15 24 29 33 36

Mean breaking weight in lbs. pr. pair of bars. 2281 1842 1523 1216 1213 1176

Second Series.—Bars, 9 feet long, 1 inch broad, and 3 inches deep. Mean weight of bars, 93.5 pounds. Velocity in feet per sec... 0 15 29 36 43

Mean breaking weight in lbs. 4235 3400 3044 2406 2182

Third Series.—Bars, 9 feet long, 4 inches broad, and 1½ inch deep. Mean weight of bars, 195 pounds. Velocity in feet per sec... 0 15 29 36 43

Mean breaking weight in lbs. 4150 3299 2670 2118 1708

Experiments on Railway Bridges to ascertain the increase of deflection produced by the velocity of the load.—The only actual trials of bridges which the commissioners made to determine the effect of velocity in augmenting deflection, were upon two bridges erected upon the Croydon and Epsom, and South Eastern railways, and known as the Ewell Bridge, and the Godstone Bridge, each of which supports the railway over a road.

A scaffold was constructed, which rested on the road, and was therefore unaffected by the motion of the bridge, and a pencil was fixed to the underside of one of the girders of the bridge, so that when the latter was deflected by the weight of the engine or train, either placed at rest or passing over it, the pencil traced the extent of the deflection upon a drawing board attached to the scaffold. An engine and tender, which had been in each case liberally placed under our orders by the directors of the companies, were made to traverse the bridges at different velocities, or rest upon them at pleasure. The span of the Ewell Bridge is 48 feet, and the statical deflection due to the above load rather more than one fifth of an inch. This was slightly but decidedly increased when the engine was made to pass over the bridge, and at a velocity of about 50 miles per hour, an increase of one-seventh was observed. As it is known that the strain upon a girder is nearly proportioned to the deflection, it must be inferred, that in this case the velocity of the load enabled it to exercise the same pressure as if it had been increased by one-seventh and placed at rest upon the centre of the bridge.—The weight of the engine and tender was 39 tons, and the velocity enabled it to exercise a pressure upon the girder equal to a weight of about 45 tons."

Ewell Bridge [Epsom and Croydon railway].—Span 48 feet. Two girders to support each line of rails. Depth of girders at centre, 3 feet 6 inches. Width of bottom flange, 20 inches; thickness of ditto, 3 inches. Weight of two girders, 20 tons. Weight of platform between these girders, 10 tons. Total weight of half the bridge, 30 tons. Weight of engine, 25.2 tons; weight of tender, 13.8 tons. Total, 39 tons.

Velocity in feet per second..... 0 25 30-9 32-3 53-7 75-
Deflection in decimal parts of an inch..... .215 .215 .230 .225 .245 .235

The commissioners remark, that "the deflections do not increase steadily; but this could hardly be expected, from the many causes of disturbance."

Godstone Bridge [South Eastern railway.] Span 30 feet. Three girders support the roadway.—Depth of girders at centre, 3 feet. Width of bottom flange, 15 inches; thickness of ditto, 2½ inches. Weight of two girders, 15 tons. Weight of platform between these girders, 10 tons. Total weight of half the bridge, 25 tons. Weight of engine, 21 tons; weight of tender, 1½ tons. Total, 33 tons.

Velocity in feet per second..... 0 22 40 73
Deflection in decimal parts of an inch..... .19 .23 .22 .25

The remainder of appendix B consists of records of some miscellaneous experiments, comprising a series, made by statical pressure, on the strength of rectangular bars of cast iron, and others with the cam, &c., by Capt. H. James, R.E., F.R.S.—The records of these experiments are tabulated, and the actual mean reduced breaking weights shown in juxtaposition with the calculated breaking weights as obtained from Barlow's formula—

$$s = \frac{16w}{4a^2} = 7620$$

and from the formula given in Hodgkinson's edition of "Tredgold:"

$$45 \times b^2 s$$

$$w = \frac{l}{l}$$

the value of s having been obtained by these writers from the breaking weights of each kind of iron, in bars 1 inch square, and 4 feet 6 inches long. This comparison distinguishes the kind of iron experimented upon, and confirms the value of mixing and remelting in order to obtain the strongest quality of metal. This table is valuable as showing how far dependence may be placed upon calculations of the strength of iron as deduced from experiments made on a small scale.

The experiments made with the cam, &c., were devised to ascertain the effect produced upon iron bars by reiterated strains, corresponding to loads equal to some fractional part of the breaking weight. The cams were worked by steam machinery, and the bars depressed and restored to their original position for a great number of times. Two cams were employed, one of which imparted vibratory motion to the bar during the deflection, the other gently depressed the bar, and suddenly released it when the full deflection had been obtained. From 4 to 7 depressions were made per minute. Three bars tested by the former apparatus to a deflection equal to one-third of the statical breaking weight obtained from similar bars, suffered 10,000 depressions, and afterwards required as much to break them as similar bars subjected to dead weights only. Of two bars subjected to a deflection equal to that due to half the breaking weight, one was broken by 23,602 depressions, and the other sustained 30,000, and did not appear thereby weakened in its resistance to statical pressure. Of the bars tried with the second cam, three sustained 10,000 depressions, each giving it a deflection equal to that produced by one-third of the statical breaking weight, without suffering any apparent loss of power to resist statical pressure; one broke with 51,538 depressions; and one bore 100,000 without any apparent loss of strength. Three other bars, defective by the same cam to one-half the extent liable to be produced by the statical breaking weight, broke with 490, 617, and 900 depressions respectively. "It must, therefore, be concluded, that iron bars will scarcely bear the reiterated application of one-third their breaking weight without injury." A bar of wrought iron 2 inches square in section, and 9 feet long between the supports, was subjected to 100,000 depressions by means of the first mentioned or rough cam, each depression producing a strain corresponding to about five-ninths of the strain that permanently injured a similar bar. These depressions only produced a permanent set of .015 inch. Three wrought

iron bars were subjected to 100,000 depressions each, from the step cam, depressing them through 333 in., .666 in., and .833 in. respectively, without producing any perceptible permanent set. A bar, depressed through 1 in., obtained a set of .06 in. and one depressed 300 times through 2 in.; acquired a set of 1.08 in. The largest deflection which did not produce any permanent set, appears, by an experiment on a similar bar, to be that due to rather more than half the statical weight which permanently injured it. A small box-girder, of boiler plate riveted, 6 in. × 6 in. in section, and 9 feet long, was also subjected to depressions by means of the rough cam, principally with the view of ascertaining whether any effect would be produced on the rivets by the repeated strain; but a strain corresponding to 3,752 lbs., repeated 43,370 times, did not produce any appreciable effect.

Of the evidence given by the several witnesses, it is impossible, within our limits, to present any useful abstract.

The several appendices, accompanying the report, contain very interesting experiments by Mr. R. Stephenson, Mr. Rastrick, Mr. Fairbairn, Mr. Barlow, and others, some of which are to be esteemed as useful accessions to the records of the properties of iron; and we heartily recommend it to "the profession" as the best work of the kind in print, and a valuable auxiliary to our present stock of knowledge on this most important subject—the properties of iron.

From the Merchant's Magazine. Internal Improvements of the State of New York.

A SKETCH OF THE RISE, PROGRESS, AND PRESENT
CONDITION OF INTERNAL IMPROVEMENTS IN THE
STATE OF NEW YORK.

Continued from Page 165.

TOLLS AND TONNAGE OF THE CANALS.

The reports of the officers in charge of the public works furnish accurate statements of the revenues derived from the canals, from 1820, when the middle section of the Erie Canal was opened for navigation, to the present time; but this is not the case in respect to the tonnage or trade of the canals. In the first instance, the Collector at Rome kept an account of the articles passing that place. Afterwards, and until 1834, a statement was kept of the articles passing Utica, without discriminating between the products coming to market, and the merchandise going west. For three years, from 1824 to 1826, the Collector at West Troy kept an account of the articles passing on the Junction Canal—that is, the canal from the point where the Erie and Champlain canals unite, near Cohoes, to Albany. For 1827 there is no account of property coming to, or going from tide-water. For the next two years statements are given of the merchandise going from tide-water, but none in regard to products coming to market. In 1830 the number of tons going up both canals is given, but the tonnage coming to market is limited to the quantity delivered at Albany. Then there is a blank of three years in the articles coming to tide-water, and of one year (1832) in the merchandise going from the Hudson. For these years we have the statements of articles passing Utica, which exhibit the magnitude of the canal business passing at that time, but which does not afford the means of a satisfactory comparison in respect to the growth of a traffic with the west and north, and of the quantity coming to and going from market.

In 1834, fourteen years after the commencement of navigation on the Erie Canal, and eight years after its completion, Mr. Flagg examined the documents and attempted to bring together the statements of tonnage which he found scattered through the various reports of the preceding fourteen years. These are given in tables appended to the report of the commissioners of the canal fund for 1835, (Senate Doc., No. 58,) with such facts in relation to the trade and tonnage of the canals as were procured from the collectors of tolls at Albany, Troy, Buffalo, Utica, Oswego and Whitehall. In 1834 circulars were sent from the canal department to all the collectors of tolls, requiring them to keep statistical tables, which would show the quantity and kind of property first cleared by them, and the same in relation to property left at the place where

the office is located, or at any point short of a neighboring office. And as stated in the report of 1836, (Senate Doc., No. 70, p. 3,) "to insure uniformity in the mode of keeping the tables, George W. Newell, second deputy of the collector in the canal department, who had prepared the forms of the tables, and was familiar with their details, visited each collectors office in the state, and gave such explanations as were needed, to insure accuracy in the returns." Mr. Newell, who was clerk of the canal board, from its first organization, in 1826 to 1848, with the exception of about three years, continued to extend the field of inquiry, and to improve the mode of keeping the tables, until they now number seventy-four, and fill a volume of 200 pages, embodying a vast amount of information respecting the trade of the canals, the price of transportation, and of products, the tonnage of boats; and all prepared with the greatest care and fidelity. A large portion of the tonnage is ascertained from actual weight by the scales; and where estimates are made, this is done by established and uniform rates, and a close approximation to accuracy.

In the following table is given, as far as practicable—1. The amount of tolls collected on all the state canals, from 1820 to 1850. 2. The number of lockages on the Erie canal at Alexander's lock, three miles west of Schenectady, for each year. 3. The number of lockages on the Champlain canal, at its junction with the Erie. 4. The number of boats arriving at, and departing from Albany and Troy, on both canals. 5. The number of tons coming to the Hudson River on both canals. 6. The number of tons going from tide-water in each year, being principally merchandise.

	Tolls on all the canals.	Lock- ages on the Erie Canal	Lock- ages on Ch'm- plain.	No. of boats to and from tide- water.	Tons coming to tide- water on both can- als.	Going from tide- water.
1820	\$5,244	.....	.....	.....	.....	.....
1821	24,388	.....	.....	.....	.....	.....
1822	64,072	.....	.....	.....	.....	.....
1823	153,099	.....	.....	.....	.....	.....
1824	340,761	6,166	.....	18,700	157,446	32,385
1825	566,279	10,985	.....	13,110	185,405	33,438
1826	765,104	15,156	.....	.....	269,795	34,086
1827	859,260	13,004	.....	.....	.....	.....
1828	838,447	14,579	.....	23,662	.....	54,622
1829	813,137	12,619	.....	21,490	.....	48,993
1830	1,056,922	14,674	.....	23,874	182,000	66,626
1831	1,223,801	16,284	.....	26,882	.....	83,893
1832	1,229,483	18,601	.....	25,820	.....	.....
1833	1,463,715	20,649	.....	31,460	.....	107,249
1834	1,340,106	22,911	.....	32,438	553,596	114,608
1835	1,548,108	25,798	11,969	36,690	753,191	128,910
1836	1,614,342	25,516	11,248	34,190	696,347	133,796
1837	1,292,629	21,055	.....	31,082	611,781	122,130
1838	1,590,911	25,962	.....	33,120	640,481	142,808
1839	1,616,382	24,234	.....	31,882	602,128	148,483
1840	1,775,747	26,987	.....	30,456	669,012	129,580
1841	2,034,882	30,320	.....	33,782	774,334	162,715
1842	1,749,197	22,869	8,813	32,840	666,626	123,294
1843	2,081,590	23,184	8,164	32,826	836,861	143,595
1844	2,445,761	28,219	10,099	38,786	1,019,094	176,737
1845	2,645,931	30,452	8,647	40,091	1,204,943	195,000
1846	2,755,593	33,431	9,771	42,936	1,362,319	213,795
1847	3,634,942	43,957	10,174	51,634	1,744,283	288,267
1848	3,252,184	31,911	9,165	43,018	1,447,905	329,557
1849	3,268,226	36,918	10,397	46,520	1,579,946	315,550
1850	3,273,899	38,444	12,861	.....	2,033,863	.....

The quantity in the column "going from tide-water," from 1824 to 1833, does not include salt, wheat and flour, or provisions, coming from the west and going up the Northern canal to Lake Champlain. The salt ranged from 7,000 to 15,000 bushels per annum. In 1833 and 1834 the flour and wheat was equal to 115,000 barrels of flour for the two years.

The tolls of 1849, when compared with those of 1832, show an increase of a fraction more than 165 per cent, and this notwithstanding the rates of toll were reduced in 1833-4 more than 35 per cent., and

* This is the number of boats which passed Rome in 1821.

† This is the number of boats passing on the junction canal, to and from tide-water, in 1824.

‡ This is the tonnage arriving at Albany alone.

in all, between the two periods, nearly 60 per cent. This shows an annual average increase in the tolls of nine and seven-tenths per cent for each of the preceding seventeen years.

The amount of tonnage coming to tide-water, comparing 1849 with 1834, has increased 185 per cent in fifteen years, averaging a fraction more than 12 per cent for each year.

In 1834, 553,596 tons came to tide-water in 16,219 cargoes. In 1849 there came to tide-water in 23,260 cargoes, 1,579,946 tons; thus showing that while the tonnage has increased 185 per cent, the boats that conveyed the products to market have increased only 43½ per cent. This difference is occasioned by the increase in the tonnage of the boats used on the canals.

The increase of the tonnage going from tide-water is 175 per cent, comparing 1849 with 1834—being a fraction more than an average of 11½ per cent for each year.

The tonnage given in the two last columns of the preceding table is the quantity arriving at, and clearing from tide-water. The quantity of products coming to market, or to the tide-waters of the Hudson, from 1846 to 1850, both inclusive, averages more than a million and a half of tons for each of the five years. The quantity of merchandise and other articles going from tide-water averages 286,000 tons per year for the same time. The quantity coming to tide-water for the period referred to is as five and two-tenths tons, to one going from tide-water.

The value of the products coming to tide-water for the last five years, averages about fifty-six millions of dollars for each year. This includes the year 1847, when the increased quantity and high prices of breadstuffs carried the total amount coming to market as high as seventy-three millions of dollars—being twenty-one millions more than in 1849.

The merchandise going from tide-water, from 1846 to 1850, averages about 220,000 tons for each of the five years—the average value for each year being about sixty-four millions of dollars. The value of products coming to market, and merchandise going from tide-water on the canals, does not vary materially from one hundred and twenty millions of dollars, on an average, made up from the business of the last five years.

In 1833, the products arriving at Albany were valued at \$8,419,859 70
In 1833, the products arriving at West Troy were valued at 4,317,823 82

Total value coming to tide-water...\$12,737,783 52

In 1849 the value of products transported in boats which came down the canals, and were towed from Troy and Albany to New York, without breaking bulk, was more than the whole amount coming to tide-water in 1833, being \$14,348,942.

The following table shows, in the first column, the value of all the products coming to tide-water on the canals, from 1834 to 1850. Second, the value of all products coming from the Western States and Upper Canada, by way of Buffalo and Oswego. Third, the value of the merchandise going to the other states by way of Buffalo and Oswego; and the fourth column is made up of the second and third, being the total of the amount of products coming from, and merchandise going to the Western States.

	Val. of prod's coming to tide-water.	Prod's from Mer'dise to Western States.	Prod's from Mer'dise to Western States.	Total of two preceding.
1834	\$13,405,032			
1835	20,525,446			
1836	26,932,470	\$5,493,816	\$9,723,250	\$15,217,066
1837	21,822,354	4,813,626	6,322,750	11,136,376
1838	23,038,510	6,369,645	8,657,250	15,026,895
1839	20,163,199	7,258,968	10,259,100	17,518,068
1840	22,213,573	7,877,358	7,057,600	14,934,958
1841	27,225,322	11,889,273	11,174,400	23,063,673
1842	22,751,013	9,215,808	7,218,900	16,434,708
1843	28,453,408	11,937,943	13,067,250	25,005,193
1844	34,183,167	15,875,558	14,845,250	27,720,808
1845	45,452,321	14,162,239	17,366,300	31,528,539
1846	51,105,256	20,471,939	20,415,500	40,887,439
1847	73,092,414	32,666,324	27,298,800	59,965,124
1848	50,883,907	23,245,353	30,553,920	53,799,273
1849	52,375,521	26,713,796	31,793,400	58,507,196

The preceding table goes no farther back than 1836, in giving the trade with the Western States, for the reason before given. For the preceding seven years, the merchandise and furniture going to the Western States was as given below:—

Years.	By way of Buffalo.	Do. Oswego.	Furniture.
	Tons.	Tons.	Tons.
1829.....	4,881	.....	\$1,415,490
1830.....	6,061	.....	1,939,490
1831.....	9,435	.....	2,736,150
1832.....	8,780	.....	2,546,200
1833.....	14,341	612	4,336,370
1834.....	17,401	871	5,298,880
1835.....	18,466	4,041	6,527,030

All the furniture in the above table was shipped at of Buffalo. The Oswego canal was navigable in 1828, but no returns were made until those given in table F, appended to Senate Doc., No. 58, of 1835, which were furnished by individuals of that place. In 1834 Oswego sent 61,604 barrels of salt to Lake Erie; and in 1835 82,000—receiving 219,868 bushels of wheat from that lake in 1834, and 275,000 in 1835.

The quantity of products which came by way of Buffalo from the Western States, for four of the years covered by the last preceding table, was as follows:—

1830.....	tons 12,876	1832.....	tons 10,957
1831.....	tons 17,384	1835.....	tons 22,124

In 1829 there was cleared at Buffalo, on the canal, 4,335 barrels of flour, and 3,640 bushels of wheat. In 1833 there were 78,666 barrels of flour sent east from Buffalo, and 114,337 bushels of wheat. In 1834 there were 79,324 barrels of flour, and 111,798 bushels of wheat. In 1829 there were 70 tons of butter, and 68 of cheese. In 1833 449 tons of butter and 95 of cheese. In 1834 119 tons of butter, and 138 of cheese sent east, all of which probably came from the west. Table G of Senate Doc., No. 58, of 1835, gives all the products cleared from Buffalo east, from 1829 to 1834, both included.

The aggregate tonnage of all the state canals has been ascertained and kept since 1836. This embraces any article which moves for any distance on the canals, including the materials used in making repairs, or in enlarging the Erie canal, so far as these materials are transported on the canals. This is termed in the tables of the report the "total movement of articles on all the canals." In 1847 the aggregate number of tons of the "total movement" on 700 miles of canals, was 2,869,810 tons, and the tonnage of 1849 exceeding this by 25,000 tons. The tonnage from 1836 to 1842 averaged 1,300,927 tons for each of the seven years. From 1843 to 1849 the average was 2,305,289 tons for each of the seven years.

The aggregate value of these products in 1847 was \$151,563,428. In 1848 it was 10,000,000 less, and in 1849 nearly \$7,000,000 less than in 1847. The average value from 1836 to 1842 was \$68,746,769 for each of the seven years. From 1843 to 1849 the average value was \$117,117,414 for each year.

The following table shows the relative per centage on the products of the forest, of agriculture, of manufactures, of merchandise, and of other articles. The first column shows the proportion which these classes of commodities bear to each other in the tons which make up the "total movement." The second column the relative value, according to this classification; and the third column the proportion of tolls derived by the state from each class of articles.

Class of articles.	Percent of tonnage of value.	Percent of tolls.
Products of the forest.....	43.32	7.71
Products of agriculture.....	29.35	29.44
Products of manufactures.....	7.33	6.76
Products of merchandise.....	8.44	51.96
Other articles.....	11.56	4.13
Boats and passengers.....	.....	8.75
Total.....	100.00	100.00

Merchandise, which makes up less than 8½ per cent of the tonnage, pays to the state nearly one-fourth of the tolls, and is valued at more than half of the commodities transported. Agriculture, on a tonnage of a fraction over 29 per cent, pays 44½ per cent of the revenue to the state, the per centage of its value and tonnage being nearly equal. The

products of the forest exceed 43 per cent of the tonnage, and pay only a little more than 13 per cent of the tolls, whilst the value of this vast amount of tonnage (exceeding one million of tons) is a little more than 7½ per cent of the value of all the products transported.

The Canal Commissioners state in their report of 1850, that there would be in use this year 778 miles of canals and feeders; and that when the Black River and Genesee Valley canals are finished, the extent of the canal and slack water navigation belonging to the state will be 898 miles. The whole expense of the maintenance of the canals, including repairs, collection of tolls, &c., has averaged \$712,575 for each of the last five years, which is a fraction less than 24 per cent of the whole sum received for tolls. The cost of repairs for ten years preceding 1846 averaged \$585,161 for each year, as shown in Convention Doc., No. 73, p. 6, 7. The revenue from tolls has also greatly increased in the last five years.

Another article, in relation to railroads in this State, will bring to a close the promised sketch of "internal improvements in the state of New York."

Railroad Traffic.

The Harlem railroad receipts show a large gain over last year. They are for March:

1851.....	\$42,615 16
1850.....	32,596 23

Increase, 31 per cent.....\$10,018 93

The aggregate increase for January, February and March is \$27,693 94.

The receipts of the Albany and Schenectady road are considerably in advance of the estimates of the company. The March earnings are:

1851.....	\$16,876 17
1850.....	12,311 04

Increase equal to 37 per cent.....\$4,565 13

The March receipts of the Norwich and Worcester road show also a gain over the same month of last year. They are:

1851.....	\$21,631 92
1850.....	21,431 00

Increase in 1851.....\$1,531 92

Macon and Western Railroad.—The earnings of the Macon and Western railroad for March were:

1851.....	\$18,590 06
1850.....	16,952 01

Increase 10 per cent.....\$1,638 65

The cash receipts for sales of land belonging to the Wabash and Erie canal, for the three months ending 31st March, amounted to.....\$61,906 30
The receipts for the same period last year were.....21,893 32

Increase.....\$40,012 98

Housatonic Railroad.—The annual report of the Housatonic railroad has been published, and from it we gather the following facts. The receipts of the year were:

Passengers.....	\$126,988 98
Freight.....	170,081 19
Mails, &c.....	12,993 06

Total.....\$310,063 23
Expenses and repairs.....153,235 34

Rents to Berkshire, Stockbridge and Pittsfield and West Stockbridge roads.....74,811 60

Net earnings of Housatonic road....\$82,016 29
Deduct extraordinary expenses and new equipment.....30,523 00

Net balance.....\$51,493 29

This road commenced working the Stockbridge and Pittsfield road in December, 1849, and the repairs and expenses of that road have consequently gone into the above expenditures. The comparative receipts of 1848, '49 and '50 are as follows:

1848.....	\$274,314
1849.....	287,184
1850.....	310,063

The increase in 1850 is \$22,879. This small increase is ascribed to the depressed condition of the iron business on the line of the road. Several manufacturing establishments will be put into operation this year, which will add to the revenues of the road. The gross earnings of January, 1851, were \$48,454; February, estimated, \$36,000; together, \$84,454, against \$76,176 in the same months of 1850. The net earnings after paying all expenses, ordinary and extraordinary rents and dividend on preferred stock, show a deficiency of \$19,354 27, which was more than absorbed by the extraordinary expenses.

Welland Canal.

The Canadian Department of Public Works have just published a schedule of the rates of toll adopted for the Welland canal for the ensuing season by the board. We take the schedule from the Toronto Globe, and add the rates chargeable last year, by which it will be seen that reductions have been made in some leading articles, varying from 25 to 33 per cent., but on lumber the rates have been put to a much higher figure than last year.—The principal reductions have been in flour, pork, butter, lard, bran, ship stuff, iron, etc.

	1850.	1851.
	s. d.	s. d.
1. Steamboats and other vessels per ton measurement.....	0 1½	0 1½
2. Passengers.....	0 7½	0 0
" over 21 years of age.....	0 0	0 6
" under.....	0 0	0 3
3. Brick, lime, cement, gypsum, sand, stones wrought or unwrought, salt, coal, manures, clay, manganese, ores, barks, per ton, 2000 lbs.....	1 3	1 0
4. Grain, all kinds except wheat and seeds, per ton, 2,000 lbs.....	1 10½	1 6
5. Fish, stoneware and earthenware, furniture and baggage of settlers, pot and pearl ashes, bran and ship-stuffs, raw cotton and wool, hemp, hay, rags, copers, wrought, cast and other iron, charcoal, pig and bar lead, lead manufactured, carts, wagons and sleighs, farming implements, mechanics' tools, machinery per ton, 2,000 lbs.....	2 6	2 3
6. Wheat and flour, per ton, 2,000 lbs..	3 1½	2 3
7. Biscuit, butter, pork, lard, per ton 2,000 lbs.....	3 9	2 3
8. All other goods, per ton, 2,000 lbs....	5 0	5 0
9. Timber:—		
Square in vessels, boats or craft, per M. C. feet.....	20 0	25 0
Square in rafts, vessels passing thro' the canals, per M. C. feet.....	30 0	40 0
Square, round or flatted, in vessels, boats or craft, under 12 in. by 12 in. per M. L. feet.....	15 0	20 0
Square in rafts, do. do., passing thro' the canals.....	20 0	35 0
Boards, plank, scantling or lumber sawed, in vessels, boats or craft, per M feet, inch measurement.....	1 3	1 6
Do. do. in rafts through the canals..	1 3	1 6
Pipe staves and headings, per M.....	10 0	10 0
West India.....	3 9	3 9
Barrel.....	1 3	2 0
Shingle.....	0 3½	0 4
Fire wood, per cord.....	1 3	0 7½
Rafts descending the river—free.		

New York.

Syracuse and Utica and Syracuse and Rochester Railroads.—The following are the rates of way fare established upon the above roads for the present season:

	Cents.
Syracuse to Manlius.....	15
" Kirkville.....	20
" Chittenango.....	30
" Canasara.....	35
" Canastota.....	40
" Wampsville.....	45
" Oneida.....	55
" Verona.....	60
" Green's Corners.....	70
" Rome.....	80
" Oriskany.....	95
" Whitesboro'.....	1 00
" Utica.....	1 06

The way fare on the Rochester and Syracuse railroad has been fixed as follows:

	Cents.
Syracuse to Camillus.....	20
" Marcellus.....	25
" Half Way.....	35
" Junction.....	45
" Sennett.....	55
" Auburn.....	65
" Cayuga.....	95
" Seneca Falls.....	1 05
" Waterloo.....	1 15
" Geneva.....	1 30
" Oak's Corners.....	1 40
" Vienna.....	1 50
" Clifton.....	1 60
" Shortsville.....	1 70
" Canandaigua.....	1 85
" Farmington.....	2 05
" Victor.....	2 10
" Fisher's.....	2 20
" Pittsford.....	2 40
" Rochester.....	2 60

Ohio.

Belpre and Cincinnati Railroad.—Such is the name by which the work is designated, which the Belpre and Cincinnati railroad company propose to construct, under their charter, which authorizes the building of a railway from Cincinnati, across the peninsula of Ohio, through Chillicothe and Athens, to any points on the Ohio river, in the county of Washington, at which it will be most convenient to unite with the railway terminus east of that river.

The length of the route, from east to west, is about 200 miles;—it pursues a course as nearly straight as that of any other great line in the country, and will shorten the travelling distance from Cincinnati to Baltimore and the east, as contrasted with the Ohio river route, 130 miles.

That road will pass through the counties of Hamilton, Clermont, Highland, Ross, Vinton, Jackson, Athens and Washington, in the State of Ohio, crossing through the midst of the richest agricultural districts of our State, and the best mineral region for iron and coal in the great north-west. Designed, as it is, to connect, on the west, at Cincinnati, with the Ohio and Mississippi railroad, to St. Louis, and with the systems of railways projected north westwardly and southwardly, from that city—and on the east with the Baltimore and Ohio railroad, a glance at the map will show that the line is one of the most necessary and important—considered intrinsically or as a connecting link—in the United States. At or near Greenfield, in Highland County, 23½ miles west of Chillicothe, the work of the Dayton, Xenia and Belpre company, chartered at the late session, is designed to connect. This latter, when constructed, will open a direct channel from the mineral region which skirts the Scioto Valley on the east, with the

towns and country of Western Ohio and Central Indiana.

The route of the Belpre road has been surveyed throughout. Much of it has been subjected to instrumental examination; and the whole has proved highly favorable for the construction of a substantial railroad on the most economical basis.—Eighty entire miles of the whole two hundred are through the most abounding surface mines of iron and coal, and (incidentally,) of limestone, salt and burrstone. The active operations of the company have just commenced, and, at the late meeting of the board, 34½ miles of the line were ordered under contract. Subsequently the construction of that portion—extending nearly through the county of Ross—was let to the house of Cushing, Wood & Co., Boston, on terms deemed highly favorable to all parties. It is expected that the most of the contract will be ready for the iron early next year.—The board, also, at a late meeting, directed the President, as soon as practicable, to put under contract another section of the road, eastwardly, to the centre of the coal region.

The present available capital of the Belpre company, is in amount \$475,000, including the subscriptions of Ross and Athens counties. In addition to this, Cincinnati has subscribed \$150,000 on certain conditions, which will doubtless be filled satisfactorily to that city, and the counties of Washington, Vinton and Ross are authorized to subscribe, in the aggregate, \$575,000 more. The terms of the late letting are equal to a subscription of \$100,000 to the capital of the company; and, in all respects, its prospects are most cheering.

The following is the estimated cost for grubbing, grading, etc., of the line from Hillsborough to Chillicothe, Patton Summit and High Line, from Hillsboro to Greenfield 17½ miles, at \$10,479 99..... \$179,889 12
From Greenfield to Frankfort, 11½ miles, at \$10,544 81..... 120,103 30
From Frankfort to Chillicothe, as adopted, 11½ miles at \$11,900..... 131,614 00

\$431,606 42

The officers of the company are W. P. Cutler, of Washington county, President; Hugh Smart and A. Ballard, of Highland county; A. Hegler, J. Sperry, C. Robins, T. Rittenhouse, J. Madeira, F. Campbell, W. Claypool, of Ross; and J. Ballard and A. Walker, of Athens. A. Kennedy, Chief Engineer.—*Scioto Gaz.*

Vermont.

Important Railway Movement.—Boston capital was enlisted in the construction of the Northern railroad of New York, known as the *Ogdensburg railroad*, with the idea of securing to that city a more favorable line for the trade of the west, than that of the *Western* railroad. It is known to all our readers that the effect of this expenditure has been, up to this time, to benefit New York city to a far greater extent than Boston.

We have at all times advocated the policy of allowing the railroad companies the right of bridging Lake Champlain at Rouse's Point. This matter is now pending before the New York Legislature, and we are of opinion that by proper exertions, on the part of the friends of this measure, its success can now be made certain.

The great number of important projects dependent on the bestowal of this grant, may lead the Legislature of New York to adopt, without extraneous effort from any quarter, the enlarged and liberal policy, so clearly pointed out by every consid-

eration of individual or public interest. Supposing the bridge across Lake Champlain accomplished, the question arises, which channel, for the trade of the St. Lawrence, is likely to be preferred?

By looking at the map, it is seen that Portland and Portsmouth are each some fifty to eighty miles nearer to Rouse's Point than Boston, or New York. By extending a line of railway in the valley of the Missisquoi river, an easy connection may be formed with the Portland and Montreal railway in the Connecticut valley.

At the recent session of the Legislature of Vermont, a charter was granted for this purpose, and active measures have since been in progress to carry out this purpose. We have received a copy of the proceedings of a meeting recently held at Troy, Vt., in aid of this project, a copy of which we give below.

RAILROAD MEETING AT TROY, VT.

At a mass meeting of the people of the Missisquoi valley, together with numerous enterprising gentlemen from the eastern part of Orleans county, from Franklin county, and the southern portion of Canada East, convened at Curtis Elkins' hotel, in North Troy, on the 14th ult.

Samuel Sumner, Esq., of North Troy was appointed president, Norman Boardman, Esq., secretary, and Hon. Jairus Stebbens, of Westfield, W. Clapp, Esq., of Berkshire, and Abel Hurlbut, of St. Armand, vice presidents.

On motion of John S. Royce, Esq., a committee of five was appointed by the chair, on resolutions, consisting of Messrs. J. S. Royce, Flint, Chandler, Wilson and Winslow.

Adjourned to one o'clock, P. M., at the Baptist Meeting House.

Met in the afternoon, pursuant to adjournment, when the committee on resolutions reported the following resolutions to the convention, and the same were accepted.

Resolved, That recognising the importance of a railway communication, to the great agricultural and commercial interests of this country, in providing the most expeditious, effective and profitable conveyance for our products to the Atlantic markets, we feel it our duty to make a vigilant use of all honorable means in securing the construction of a railway through the valley of the Missisquoi river, to connect with other roads now in operation and leading to the principal markets of the east and south.

Resolved, That a survey of this route shall be made at the earliest practicable day, with a view to the feasibility, character, expense, and general character of the line with reference to its connection with the various railroads approaching us from Portland, Portsmouth, Boston, Lake Champlain, and Montreal, as we believe that an accurate examination of the country will satisfy the public that it is the most direct and the cheapest route that can be found between those Atlantic cities, Lake Champlain and the St. Lawrence.

Resolved, That Hon. H. E. Royce, and A. J. Rowell, Esq., be requested to act as a delegation from the inhabitants of northern Vermont, to visit Portland and Boston for the purpose of laying before the capitalists of those cities, such information as they may acquire in relation to the practicability of building the Missisquoi valley railroad, and the benefits it would confer upon them and their railroads, by this direct and easy access to the commerce of the waters of the Missisquoi river, Lake Champlain and the St. Lawrence.

Resolved, That I. B. Bowditch, Swanton, Wm. Clapp, Berkshire, S. P. Carpenter, Richford, Curtis Elkins, North Troy, E. Cleveland, Coventry, be an executive committee, to superintend the collection of funds necessary to defray the expenses attending the business of the delegation and the contemplated survey, and also to direct all matters connected with the survey of this line by a competent and suitable engineer.

The resolutions were ably discussed by Mr. Baxter, of Derby Line, Mr. French, of Stanstead, Rev. Mr. Piper, of Troy, and Mr. Royce, of Berkshire, and on motion of Amasa Paine, Esq., of Lowell, unanimously adopted.

On motion of Mr. Royce of Richford, it was Resolved, That the executive committee, either by themselves, or a committee to be by them appointed, be requested to collect statistics in relation to the wealth, mineral and agricultural resources of the country tributary to the Missisquoi valley railroad, with a view to aid our delegation to Boston and Portland in enlisting the capitalists of those cities in our great and important enterprise.

The meeting was well attended, the house filled to overflowing, and an enthusiastic, energetic and determined spirit seemed to pervade all the minds present that the work shall "go forward" and be accomplished.

Voted, That the proceedings of this convention be forwarded to the Orleans County Gazette for publication, with a request that the Stanstead Journal and the presses of Caledonia, Washington and Franklin counties publish the same.

Adjourned.

SAMUEL SUMNER, President.

NORMAN BOARDMAN, Secretary.

It will be seen that the persons taking part in these proceedings are among the most influential citizens of the State.

The productive resources of Northern Vermont and of the Canadian Frontier counties, are equal to those of any portion of New England, and if proper exertions are put forth, the completion of the line, from Rouse's Point to a point of connection with the Portland and Boston roads, may be secured at an early day.

New York Canals.

We have received the various documents issued annually by the canal board and the State Engineer, in relation to these works.

The whole extent of canals authorised by the law and belonging to the State is:—

	Miles.
Erie canal, not including Albany basin.....	363
Champlain canal.....	66
Glenns Falls feeder.....	12
Pond above Troy.....	3
Black river canal.....	90
Chenango ".....	97
Oswego ".....	38
Oneida Lake ".....	6
Oneida river improvement.....	20
Seneca river towing path.....	5
Cayuga and Seneca canal.....	23
Cayuga Inlet.....	2
Crooked Lake canal.....	8
Chemung canal.....	39
Oneida Creek feeder.....	2
Genesee Valley canal.....	118
Feeders, &c. of the Erie canal.....	9
	901

The unfinished canals are the—

Black river.....	52
Genesee Valley.....	68
	120

The whole extent of line in operation the past year has been..... 778 miles.

Of the enlargement there have been

Completed..... 140 9-10 "

To be completed..... 223 11-100 "

The whole amount of expenditure on account of the canals the past year for repairs, superintendence, etc., has been..... \$615,219 28

Some of the most important items which make up this aggregate are:—

Expended on locks.....	\$46,036 73
Lock tending.....	93,231 77
Lock gates.....	35,172 18
Road bridges.....	37,557 09
Repairing tow path and slope wall....	79,591 90
Clearing out canal.....	70,458 14

Below we give some interesting statistics of the movement of property on the canals for the past 15 years.

The total tonnage of all the property on the ca-

nals, ascending and descending, its value, and the amount of tolls collected for the fifteen years preceding, is as follows, viz:—

Year.	Tons.	Value.	Tolls.
1836.....	1,310,807	\$67,634,343	\$1,614,342
1837.....	1,171,296	55,809,288	1,292,623
1838.....	1,333,011	65,746,559	1,590,911
1839.....	1,435,713	73,399,764	1,616,382
1840.....	1,416,046	66,303,892	1,775,747
1841.....	1,521,661	92,202,929	2,034,882
1842.....	1,236,931	60,016,608	1,749,196
1843.....	1,513,439	76,276,909	2,081,590
1844.....	1,816,586	90,921,152	2,446,374
1845.....	1,985,011	100,553,245	2,646,181
1846.....	2,268,662	115,612,109	2,756,106
1847.....	2,869,810	151,563,428	3,635,381
1848.....	2,796,230	140,086,157	3,252,212
1849.....	2,894,732	144,732,285	3,268,226
1850.....	3,076,617	156,397,929	3,273,899

The total tons coming to tide water, for each of the last seventeen years, and the aggregate value thereof in market, was as follows, viz:—

Year.	Tons.	Value.
1834.....	553,596	\$13,405,022
1835.....	753,191	20,525,446
1836.....	696,347	26,932,470
1837.....	611,781	21,822,354
1838.....	640,481	23,038,510
1839.....	602,128	20,163,199
1840.....	669,012	23,213,573
1841.....	774,334	27,225,322
1842.....	666,626	22,751,013
1843.....	836,861	28,453,408
1844.....	1,019,094	34,183,167
1845.....	1,204,943	45,452,321
1846.....	1,362,319	51,105,256
1847.....	1,744,283	73,092,414
1848.....	1,447,905	50,883,907
1849.....	1,579,946	52,375,521
1850.....	2,033,863	55,474,637

The whole quantity of wheat and flour which came to the Hudson river, from 1834 to 1850, inclusive, with the aggregate market value of the same, and the amount of tolls received on all the wheat and flour transported on the canals in each year, from 1837 to 1850, inclusive, is as follows:—

Year.	Tons.	Value.	Tolls.
1834.....	130,452	\$5,719,795	Not ascertained.
1835.....	128,552	7,395,939	do.
1836.....	124,982	9,796,540	do.
1837.....	116,491	9,640,156	\$301,739
1838.....	133,080	9,883,586	390,161
1839.....	124,683	7,217,841	404,525
1840.....	244,862	10,362,622	700,071
1841.....	201,360	10,165,355	621,046
1842.....	198,231	9,284,778	606,727
1843.....	248,780	12,283,454	731,816
1844.....	277,865	11,211,677	816,711
1845.....	320,463	15,962,950	851,533
1846.....	419,366	18,836,412	1,099,325
1847.....	551,205	32,890,938	1,460,424
1848.....	431,641	21,148,421	1,126,133
1849.....	434,444	19,308,595	1,128,064
1850.....	461,781	20,218,188	1,114,519

The tons of wheat and flour shipped at Buffalo and Oswego, from the year 1835 to 1850, and to Black Rock, from 1839 to 1850, inclusive, and the total tons of wheat and flour which arrived at the Hudson river, were as follows, viz:—

	Buffalo	Black Rock	Oswego	Total tons arrived at tide water.
Year.	Tons.	Tons.	Tons.	Total.
'35..	15,935	14,888	30,823	128,552
'36..	24,154	13,591	37,745	124,982
'37..	27,206	7,429	34,635	116,491
'38..	57,977	10,010	67,987	133,080
'39..	60,082	7,697	15,108	82,887
'40..	95,573	12,825	15,075	123,473
'41..	106,271	24,843	16,677	147,791
'42..	107,522	13,035	14,338	134,895
'43..	146,126	12,882	25,858	184,866
'44..	145,510	15,669	42,293	203,472
'45..	118,614	17,066	44,560	180,240
'46..	247,860	16,564	63,905	323,329

'47..360,053	18,489	87,329	482,871	551,205
'48..253,325	19,376	90,411	363,112	431,641
'49..229,983	22,196	119,201	371,380	434,444
'50..205,457	24,256	133,473	363,186	461,781

To be continued.

European and North American Railway.

Below is the act of the Legislature of New Brunswick granting aid to the above road:

When the shareholders of the European and North American railway company shall pay into their treasury at least the sum of ten thousand pounds, sterling, and it shall be satisfactorily proved to the Lieutenant Governor in Council that such sum has been actually paid in, and is ready to be expended within this province of the European and North American railway the Provincial Treasurer shall be authorised by the Lieutenant Governor in Council, to subscribe on behalf of the Province for shares in the said company to the like amount, and in payment therefor to deliver to the said company special certificates of debt, to be called debentures, bearing interest at a rate not exceeding six per cent per annum, the principal money redeemable in thirty years; and so from time to time, when it shall be satisfactorily proved to the Lieutenant Governor in Council, that the sum theretofore subscribed and paid in by the shareholders of the said company, and the proceeds of the debentures previously delivered, have been expended in the construction of the said railway, and that a further sum of at least ten thousand pounds, sterling, has been actually paid in by the shareholders, and is ready to be expended in like manner, the Province Treasurer shall again be authorised to subscribe on behalf of the Province for shares in the company to an equal amount with the sum so paid in and ready to be expended, and also to pay in full for such shares by a further delivery of debentures; provided always, that the amount of shares in the said company subscribed and paid for by the Province Treasurer in any one year shall not exceed one hundred thousand pounds, sterling, and in the whole shall not exceed two hundred and fifty thousand pounds, sterling.

Virginia.

Petersburg Railroad.—The annual meeting of the stockholders of this company was held on the 3d ult. The report states the amount of Capital paid in amounts to.....\$769,000 00
Debts due by the company..... 150,851 05
Profit and loss..... 19,316 56

\$939,167 61
Cost of railroad.....\$769,000 00
New track—now being laid 154,821 22
Debts due the company... 9,716 43
Cash..... 5,629 96

\$939,167 61
The receipts for transportation for the year ending January 31st, were \$211,129 17, composed of the following items: freight, \$98,941 06; passengers, \$96,188 11; mails, \$16,000. The receipts for the preceding year were \$180,453 99. This shows an increase of \$30,675 18 in favor of the past year. There were expended during the same period, for officers' salaries, repairs of road, etc., etc.....\$85,961 65
For one new engine, two new passenger and twelve freight cars, and eighteen trucks..... 21,135 00
Miscellaneous..... 628 12
Interest account, and on account of individual contract..... 7,224 78

Making a total of.....\$114,949 55
Or \$6,307 75 less than the expenditure of the previous year. Deducting this amount (\$114,949 55) from the amount of receipts, \$211,129 17, and the net income is \$96,179 62. Of this sum, \$57,675 were paid out for a 7½ per cent. dividend, leaving a balance or surplus of \$38,504 62. The sum of

\$118,232 35 was expended during the past year on the new track which the company are now laying, of which amount \$49,802 04 was paid in cash.—This the company were enabled to do from the surplus of \$38,504 62 of receipts and cash on hand, \$18,084 34, and other assets from last year. As stated, the whole debt of the company is \$150,851 05. The sum of \$39,346 39, however, is to be deducted for cash on hand, debts due, and the value of old iron as far as taken up. The company's indebtedness, before they commenced laying the new track, was \$14,409 81. This would leave \$97,094 85, incurred for that purpose, to the first of March. For the new track, there has been expended, so far, the sum of \$154,821 22. If from this is deducted the value of old iron (\$24,000), \$130,821 22 is left as the amount of cost of new track up to January 1st. The company expect that the whole improvement will not cost over \$165,000.

The following is a comparative statement of the business of the company for the years ending Jan. 31, 1850, and Jan. 31, 1851.

	Jan. 31, '50.	'51	Inc & dec.
Rec'ts of trans.	\$180,453 99	\$211,129 17	\$30,675 18
Expenses.....	121,257 30	114,949 55	*6,307 75
Net income...	59,196 69	96,179 62	36,982 93
Dividend.....	7 per ct.	7½ per ct.	

* Decrease.

Albany and Susquehanna Railroad.

A meeting was held at Oneonta, in the county of Otsego, on the 2d instant, at which a company was organized to construct a railroad from this city to some point on the New York and Erie road, at or near Binghamton, in the county of Broome, thro' the valley of the Susquehanna, by way of the Great Bend. We learn that delegations were present from more than twenty towns in the counties of Albany, Schoharie, Delaware, Otsego, Broome and Chenango. Notwithstanding the rain, it is estimated that nearly two thousand persons were present. The meeting was organized by the appointment of Edward C. Delavan as President, Jesse C. Potts, and others, as Vice Presidents, and Woodbury Cook and J. Terry as Secretaries. Brief addresses were made by Col. Snow, of Otsego, R. H. Pruyn, of this city, Joel B. Nott, of Guiderland, J. McFarland, of Washington county, and Gideon Hotchkiss, of the county of Broome. Articles of association were agreed upon, and subscriptions made to the capital stock of the company. Great confidence is expressed in the ability of the people along the proposed line of the road, with such assistance as they are entitled to expect from the cities of Albany, Boston and New York, to build the road in the most durable manner; and in a short space of time. At the time the Albany delegation left, the delegates were engaged in apportioning amongst the towns the amount of stock it was considered desirable to have subscribed in advance of full surveys and estimates of the cost of construction. As an evidence of the confidence of those present in the value of the stock as an investment, we would state that several subscriptions of \$10,000 and \$5,000, respectively, were made.

The following directors were chosen:—

Edward C. Delavan, William V. Many, Robert H. Pruyn, Charles Van Benthuyzen, Franklin Townsend and Erastus Corning, of Albany; Joel B. Nott, of Guiderland; George W. Chase, of Maryland; Charles Courter, of Cobleskill; Samuel R. Beach of Oneonta; Arnold B. Watson, of Unadilla; Richard W. Juliand, of Bainbridge; and Gideon Hotchkiss, of Windsor.

We learn that the grades through the valleys of the Susquehanna and Schenectady are, if any thing, more favorable than in the valley of Mohawk, and that the highest grade coming east will be about thirty-four feet to the mile in ascending from the Schoharie Creek to the head waters of the Normanskill.—*Albany Journal.*

Kentucky.

The people of this State having, up to a recent date, remained in comparative indifference in relation to railroads, are now actively engaged upon several important lines. Railroads are now attracting great attention in Kentucky, and as that is one of the oldest and richest of the western States, and as the means of her people have not been exhausted upon any projects of a similar kind, we may expect to witness a very rapid progress of railroads in that State for some years to come.

The only railroad in operation in Kentucky, is the line from Louisville to Lexington. The latter city, the largest interior town in the State, is soon to become the focus of a large number of roads—the Maysville and Lexington on the east, the Covington and Lexington on the north, the Louisville line on the west, and the Lexington and Danville on the south. Of these, the two former are in progress. The Danville road will soon, we presume, be commenced, as the county of Fayette has recently voted \$200,000 to aid it.

The Maysville and Lexington road, having secured sufficient means for the construction of its whole line, is now to be pushed forward with vigor. The length of this road will be about 70 miles. The estimated cost, \$1,500,000. The first half from Maysville embraces a great deal of heavy work, involving two or three expensive tunnels. The remainder of the route is very favorable. It is expected that this division of the road, extending from Lexington to some point near the Licking river, will be completed by the first day of January, 1853, and the whole road in a year and a half from that time. This line will connect the other roads of Kentucky with the great avenues of travel west: and by cutting off, in connection with the Louisville road, the great bend of the Ohio, it will attract to itself a large amount of the travel going east and west.

The parties having the management of the affairs of this company, and particularly its Engineer, L. L. Robinson, Esq., deserve great credit for the zeal and earnestness with which they have labored, under all discouragements, to secure the necessary means for the road. These are now provided beyond a contingency, and nothing is now wanting but time, to complete the work.

The most important project in the State, is the great line from Louisville to Nashville. This will soon be the only link wanting in a continuous line of railroad, to unite the northern and southern extremes of the Union; the Great Lakes on the one hand, and the Gulf of Mexico on the other, the means for this great line will be readily secured. Its construction will be urged forward by a consideration of the important results that will flow from its completion. The work of construction may, with the same convenience, be commenced on each end, as Louisville and Nashville are equally accessible by water from New Orleans. The route is of the most favorable description, and the work can be pushed forward with great rapidity. It is also proposed to construct a branch from this road, to strike the Mississippi near the mouth of the Ohio, for the purpose of forming a junction with the Mobile and Ohio road.

It is also proposed to extend the Lexington and Danville railroad to Nashville, by a more easterly line than the Louisville and Nashville road: but this project is not yet sufficiently matured to come before the public in an organized form. The Louisville people also propose to extend a branch from the Louisville and Frankfort railroad, in the direction of Danville, for the purpose of preventing the trade of that section of the country taking a northerly direction to Cincinnati.

The above embrace the leading projects now engaging the attention of the people of Kentucky.—There are others not so far advanced, but which will soon be added to the list of roads in progress. Having now fairly embarked in the construction of railroads, we have good reason to believe that this State will go on with the work, till every practicable portion of it shall have its appropriate line.

AMERICAN RAILROAD JOURNAL.

Saturday, April 12, 1851.

Notice to Contractors.

St. Andrews and Quebec Railroad.

TENDERS will be received up to 15th of May next, at the Railroad Rooms, Saint Andrews, for Grading 32 miles of the St. Andrews and Quebec Railroad, commencing at the terminus of the ten miles already graded, near Bartlett's Pond, and continuing on the Line to Station No 2314, near the head waters of the Digdeguash river.

Plans, Specifications and Sections of the Line, may be viewed at the Engineer's Office, at any time after the 10th of April next, and information given by A. L. Light, Engineer.

JOHN WILSON, President.

The Stock and Money Market.

We still note a gradual improvement in the stock market, and in the price of securities, with limited transactions in the bonds of new works. Those of the best western lines are selling at about 85 cents on the dollar, net, though the bonds of weaker companies are probably selling somewhat under that price. We advise our friends at a distance, though the market is improving, not to offer their securities at present. It is much better to allow the market a sufficient time to fully recover. It might fall again under a very large supply. The prospect for the coming season looks encouraging, and there appears every reason to believe that railroads will be able to obtain money at as good rates as the past year.

By the last advices, the price of sales in England remains about at previous quotations; £5 10 shillings free on board being the asking price. As orders from this country are now slackening off, we see no reason to expect any immediate advance in prices. A great majority of our roads in progress find it of their interest to order their iron in winter, to take advantage of the spring freshets in carrying it into the interior. The very large amount of orders that went abroad during the winter had less effect upon the price in England, than was generally anticipated. We believe that the expectations of dealers on this side have not been realized. We have no doubt that the interests of the leading English manufacturers are opposed to any advance that would yield more than a moderate profit. Such is the capacity of many of their works, that a few shillings profit on the ton would yield a very large surplus; and as the ability to make far exceeds the demand, a price that would give a large profit would lead to the most disastrous results in stimulating the business far beyond the wants of

the trade. At present prices, the English manufacturers are undoubtedly doing a saving business, and they prefer to monopolize the make at the present price, than invite competition by a large profit.

A good deal of interest is being manifested in relation to the various compound rails before the public, the objects of which are to obviate the defects of the form now in use, which is the cause of an enormous wear and tear to the machinery and track. American iron, from its superior quality, will readily command a much higher price than the foreign article, and if our railroad men become convinced, as we are satisfied they will, that the compound rail, at a much higher first cost, is more economical in the end, this will lead to the manufacture, on a large scale, of railway bar in this country.

The following are the advices by the steamer that arrived on the 10th inst:—

English Iron Market.—Welsh bars are firm at £4 17s. 6d., free on board; and the market is now nearly cleared of second hand parcels. In rails there has been some business doing at £5 7s. 6d., and £5 10s., and the latter is now the lowest price. Scotch pig 40s. 6d. for mixed numbers on the Clyde. Swedish £11 15s. a £12. Russian C.C. N.D. held at £17.

Freights.—To New York metals are 10s. 6d. to 15s. per ton; bulky weight 12s. 6d. to 17s. 6d.; hardware, 15s.; earthenware, 10s. To Boston dead weight is 17s. 6d. to 25s.; fine goods 20s.; hardware 20s.; earthenware 10s. To Philadelphia dead weight is 17s. 6d. to 20s.; fine goods 20s.; hardware 20s.; earthenware 10s.

Baltimore—Dead weight 15s. to 20s.; fine goods 20s.; hardware, 20s.; earthenware 10s. New Orleans—dead weight 12s. 6d. to 15s.; fine goods 17s. 6d.; hardware, 15s.; earthenware, 7s. 6d. per ton.

After the first of the present month, the duty will be assessed on the value at the time of shipment, and not upon its cost.

SALES OF STOCK IN NEW YORK.

	April 2. Sales.	April 9. Sales.
U. S '67 Loan.....	116	116½
Erie R.R.....	84	85½
Harlem R.R.....	70½	73½
Stonington.....	43	44
L.I. R.R.....	24	22½
Norwich & Wor....	64	65
Del. & Hudson.....	129½	125
Reading.....	56½	60½
Morris Canal.....	18½	19
Erie income.....	93½	94½
" " Bonds.....	103	104
Canton.....	65	73
Farmers Loan.....	65½	66½

SALES OF STOCKS IN BOSTON.

	April 1.	April 8.
Old Colony Railroad.....	68½	68½
Boston and Maine R.R.....	104½	104½
Eastern Railroad.....	102	102
Fitchburg Railroad.....	111½	111½
Michigan Central Railroad.....	94½	94½
Northern Railroad.....	70½	70½
Vermont Central Railroad.....	34½	35½
Vermont and Mass. R.R.....	31	30½
Western Railroad.....	103½	102½
Ogdensburg Railroad.....	38½	39½
Rutland Railroad.....	57½	58½
Boston and Worcester Railroad.....	103½	103½
Rutland Railroad Bonds.....	97	97
Ogdensburg Railroad Bonds.....	97½	97½
Vermont Central R.R. Bonds.....	92½	92
Boston and Providence R.R.....	83½	85
Philadelphia, Wilm'gton & Balt.....	29	29½
Concord R.R.....	56	56
Manchester and Lawrence.....	90	90

Massachusetts Railroads.

We have just received a copy of the reports of the Railroad Companies of Massachusetts for the year 1850, published by order of the Legislature.

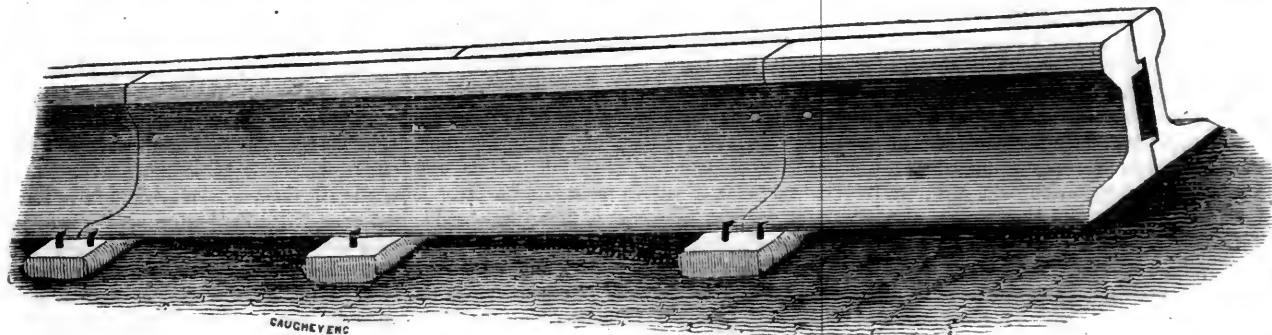
We give below a list of the Railway Corporations in that State, the length of lines built, and the cost of construction. The list embraces 10469-10 miles of road, built at a cost of \$51,885,556-46. But to these must be added 74½ miles of branch lines, making the aggregate 1121½ miles of finished road, built at an average cost of \$43,830,01 per mile. But from this aggregate of Massachusetts roads there should be deducted 43 miles of the Cheshire road, lying in New Hampshire, 38 miles of the Boston and Maine Road, lying in New Hampshire and Maine, 5 miles of the Nashua and Lowell Road, lying in New Hampshire, and 10 miles of the Vermont and Massachusetts R. R., making 96 miles in all. Deducting these from the 1121½ miles we have an aggregate length of Railroads in Massachusetts of 1025 miles:

	Length of line. Miles.	Cost of road and equipment.
Berkshire railroad.....	21	\$600,000 00
Boston, Barre and Gardner.....		
Boston and Lowell.....	25.7	1,945,646 68
Boston and Maine.....	74.6	4,021,606 59
Boston and Providence.....	41	3,416,232 51
Boston and Worcester.....	44.6	4,882,648 23
Cape Cod Branch.....	27.3	626,543 21
Charles River Branch.....		
Cheshire.....	53.6	2,738,318 10
Connecticut River.....	50	1,798,855 38
Dorchester and Milton.....	3.3	132,171 72
Eastern.....	38	3,120,391 67
Essex.....	19.8	537,869 01
Fall River.....	42.2	1,068,167 01
Fitchburg.....	50.9	3,552,282 59
Fitchburg and Worcester.....	13.9	259,073 93
Framingham Branch.....		
Grand Junction Railroad and Depot Company.....	6	678,116 31
Hartford and New Haven.....	5.8	171,152 65
Harvard Branch.....	3.6	26,213 02
Lexing'n and West Cambridge.....	6.6	242,160 86
Lowell and Lawrence.....	12.3	333,254 42
Medway Branch.....		
Midland.....		
Nashua and Lowell.....	14.5	651,214 88
New Bedford and Taunton.....	20.1	498,751 68
Newburyport.....	8	106,825 31
New London, Willimantic and Palmer.....	9	180,000 00
Norfolk County.....	26	1,060,990 04
Norwich and Worcester.....	17	772,105 90
Old Colony.....	37.2	2,293,534 83
Peterborough and Shirley.....	14	272,646 96
Pittsfield and North Adams.....	18.6	443,677 68
Providence and Worcester.....	27	923,288 10
Salem and Lowell.....	16.8	316,942 82
Saugus Branch.....		
Southbridge and Blackstone		
South Reading Branch.....	8.1	231,601 33
South Shore.....	11.5	420,434 03
Stockbridge and Pittsfield.....	21.9	448,700 00
Stony Brook.....	13.1	265,526 73
Stoughton Branch.....	4	93,433 29
Taunton Branch.....	11.1	307,136 20
Troy and Greenfield.....		
Vermont and Massachusetts.....	69	3,192,021 54
Waltham and Watertown.....		
Western.....	117.8	8,032,813 83
West Stockbridge.....	2.7	41,516 29
Worcester and Nashua.....	39.6	1,282,691 04
	1046.9	\$51,885,556 46

Michigan.

Southern Railroad.—This railroad was opened the 10th inst. to Sturges Prairie, 117 miles from Toledo and Monroe, on Lake Erie. This road will be completed to the Indiana State-line by July, and to South Bend, at the Northern Indiana road, in August.

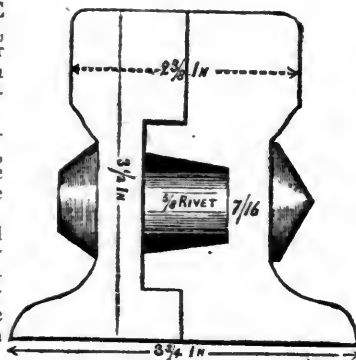
PATENT COMPOUND RAIL.



THE UNDERSIGNED NOW OFFERS TO THE Railroad Public a new Compound Railroad Bar, which possesses, as he believes, a decided superiority over every kind now in use. The Cuts annexed will give a good idea of the form of the Rail, and the mode of combination.

The form of the rail now offered is of the simplest construction, involving the use of only two pieces or parts, and these are put together in a manner that makes the Compound Rail equal in strength to any pattern in use of an equal weight.

This Rail has now been in use on the New York and Erie and the Utica and Schenectady Railroads for nearly two years, and has proved itself to be a durable and continuous rail, realizing the advantages of a theoretically perfect rail, over the one in common use. He invites the attention of Railroad Companies to a careful examination of the merits of the form now offered.



The advantages of this Rail are: first, it effects a saving of from 25 to 50 per cent. in the wear and tear of the machinery; secondly, it saves to a vastly greater extent in the repairs of track; thirdly, it secures a much higher rate of speed with the same power; and what is of still greater importance, it offers complete protection against most of the accidents to which companies are liable. For these reasons, it is believed to be not only the best, but the cheapest rail that can be used. In enumerating its advantages, the proprietors only repeat the statements of competent persons, who have had the best opportunities of judging of its merits.

Any communications or inquiries addressed to J. F. Winslow, of Troy, N. Y., President of the Mount Savage Iron Works, where the Compound Rail is now being manufactured, will receive immediate attention.

J. F. WINSLOW,

Troy, N. Y. April 8, 1851.

The Compound Rail.

In another part of our paper will be found an advertisement of this rail, accompanied by cuts illustrating its form and mode of combination, which will be readily understood by any person examining them. This matter is now fairly before the public, and we solicit for this improvement the most careful attention.

We had the pleasure during the past week of visiting, in company with a party of gentlemen, representing a number of different roads, the Utica and Schenectady railroad, upon which some eleven miles of this rail has been laid, for the purpose of making a careful examination into its merits. As the rail is laid at some distance from Schenectady, Mr. Vibbard, the superintendent of the road, obligingly placed an engine at our disposal, and to make the trip a still more instructive and useful one, he accompanied the party. The engine, too, was on her first trial trip, and was a beautiful specimen of workmanship, just turned out from the company's shop.

Most of the compound rail in use upon the road, and that portion of it examined by the party, was laid down last fall. Of course sufficient time has not elapsed to show the relative durability of the two kinds. This at present must be a matter of inference from well established facts, showing the influence of the various kinds of wear to which a rail is subjected. In the rail examined, the two parts appear to hold together perfectly. The rivets do not show in the least degree the action of the trains. We learned too that no inconvenience whatever has been experienced from the contraction and expansion of the iron. In riding upon the engine, the different effects produced by the two kinds of track, were what every person, reasoning theoretically, would suppose it to be. Where the track is made up of isolated and unconnected parts, or in other words, where the old rail is used, most

of the inequalities of the surface present angles to the passage of the trains. With the compound rail, all such inequalities present curves so that a smooth and uniform surface is secured; and as the rail is equally strong in every part, the whole track is uniformly acted upon. The passage of the trains has a tendency to correct any inequalities, instead of causing them. All the evidence thus far disclosed is entirely in favor of the compound rail. The objections naturally anticipated do not appear to exist. If the new rail shall be found to be as durable as the other, we apprehend that no railroad man would hesitate between the two. The vast saving in the use of the latter, both in repairs of track and machinery, must give it a decided preference.

We copy in our present paper the letter of Mr. Vibbard, published a few weeks since. We have good reason for believing that it comes far short of his own convictions as to the value of the improvement. His opinions are based upon the working of the rail upon the road under his charge, and the opinion of no man among us is entitled to more confidence, or will carry with it greater weight. The value of this rail, as well as that of all other new inventions, must be proved by its use. Theory is worth but little without the sanction of practice; and the opinions and experience of such a man as Mr. Vibbard are worth a thousand times more than any reasoning of our own; and it is upon his opinion that we base no small part of our confidence of its success.

While upon this subject we take occasion to express for ourselves, and on behalf of the party which we accompanied on the trip, a sense of our obligations to the Utica and Schenectady R. R. Co. for the facilities afforded us, at no small inconvenience to them, to examine, in detail, their magnificent road, which, in plan of construction, in

excellence of finish, and management, is a model work, and would well repay a careful examination by any person interested in railroads, however extensive his experience or qualifications. The line of road, to be sure, occupies a remarkably favorable route, both as regards the amount of business, and ease and cheapness of construction. These advantages, instead of leading to an indifference as to the public good, and consequently to that of the company, as is often the case under similar circumstances, have been turned to the best account, and the company have been enabled not only to extend to the public every reasonable convenience, but to secure to the stockholders an ample return upon their investments.

Troy, March 6, 1851.

H. V. POOR, Esq.,

Dear Sir—On the 4th ult. I addressed a note to C. Vibbard, Esq., Superintendent of the Utica and Schenectady railroad, making certain inquiries in relation to the "Patent Compound Railroad Iron" in use upon that road, and which was manufactured at the Mount Savage Iron Works, in Maryland. Herewith I send you for publication a *verbatim* copy of his reply. I think you will agree with me, that Mr. Vibbard's experience with this new form of rail is singularly confirmatory of the advantages claimed for it by you in a series of editorial articles recently published in your Journal, as well as a practical demonstration of the soundness of the views just given to the public in a pamphlet upon the "Defects of Railway Tracks and their remedy, by the adoption of a new form of Railway Bar," by Benjamin H. Latrobe, Esq., Civil Engineer, and which I am glad to see you are transferring to the columns of the Railroad Journal.

Very respectfully,

J. F. WINSLOW,

Pres't. Mt. Sav. Iron Co.

Utica and Schenectady Railroad Office,
Schenectady, March 1, 1851.

J. F. WINSLOW, Esq., President Mount Savage Iron Company.

Dear Sir—Yours of the 4th of February, submitting various interrogatories relative to the "Patent Compound Railroad Iron" furnished by your company, and laid down upon this road, was duly received, to which I shall reply in general terms, making the ordinary T rail the standard of comparison. From my own observation, and the experience of locomotive engineers, who are daily running upon the compound, in connection with the T rail, (which is superior of its kind,) I am clearly of the opinion that there is a saving in the wear and tear to the machinery of the road, of at least 25 per cent.

In passing from the T to the compound rail with the trains, a much higher rate of speed is attained with the same power, which can only be attributed to the non-resistance at the joints. There can be no doubt that a less expenditure of motive power is required upon the compound rail in pulling loads of equal weight, but to what extent I am unable to say.

In November, 1849, about one thousand feet of the compound rail, furnished by you, was laid down in connection with the T rail in the main track, over which all trains passing westward from Schenectady were run.

This part of the track has not been repaired or adjusted, nor has it required to be, while the T rail which was laid at the same time, and with great care, has required repeated adjustment. The ten miles of your compound rail laid last fall has also kept in admirable adjustment.

The experience on this road in that respect is the same as upon all others where the T rail is in use.

A very large proportion of the expense of adjusting the track is at the joint or end of the rail, which is caused by the weakness, or break in the track at that point. This defect is entirely obviated by the use of the compound rail, which gives an equal and perfect bearing upon all the cross-ties, thereby reducing the expense of keeping the track in adjustment, more than one half. No part of the compound rail has broken or been thrown out, while a large number of broken and defective bars of the T rail has been removed. Neither has a wheel or shaft broken upon this part of the rail. Higher speed can be maintained with same power, greater safety and comfort to the passengers, the oscillation and noise of the cars being much less than upon the T rail.

No chair is required in laying the compound rail, the saving in expense of which I consider more than equal to the additional cost of rivets and riveting together the bars. Two or three rivets, only, have broken since the rail has been in use, which upon examination proved to have been defective when driven.

Additional experience is wanted to determine the durability of the compound rail, in comparison with the T rail. That the result will be in favor of a compound rail, I see no reason to doubt.

Respectfully,

Your obt. serv't.,
C. VIBBARD, Sup't.

Rhode Island.

The city of Providence has just voted to subscribe the sum of \$500,000 to the Providence, Hartford and Fishkill railroad.

European and North American Railway.

This great project, the object of which is to extend our railroad system to the most eastern boundary of this continent, and to form the shortest possible line of communication between the old world and the new, is making very remarkable progress, though not a year has elapsed since it was first presented to the public. The readiness with which it has been seized hold of by those immediately interested in the route, and upon whom the burden of construction must fall, and the universal expression of public opinion in its favor is a striking proof of the merits of the scheme, and of the extreme facility with which it can be executed. In works of much less magnitude, and promising the most favorable results, it often requires years to mature a plan, and concentrate a sufficient force, to justify a commencement. Few projects are so well conceived, or so strong in themselves, but that years are necessary to bring up the convictions of people to the working point. But this sprung at one bound into full life and dimensions, and has carried with it not only the verdict of public opinion both in the old country and the new, but secured no small portion of the necessary means for its accomplishment. Within less than one year from the date of the great convention in Portland, (the first organized demonstration in its favor,) the work of construction will be commenced on some parts of the line.

The whole length of road now to be built to carry a continuous line of rail way to the eastern portion of Nova Scotia is 470 miles, viz:—From Waterville, Maine, to Bangor, 55 miles; Bangor to Calais, 96 miles; Calais to St. John, 73 miles; St. John to the line of Nova Scotia, 126, thence to Halifax, 120 miles. The construction of the first link to Bangor may be considered as secured by the action of the two connecting Maine roads, in guaranteeing a dividend upon its stock. The Province of New Brunswick has granted aid to that portion of the line through her territory to the amount of \$1,250,000, and will undoubtedly increase this if necessary, and we have every assurance that Nova Scotia will adopt a similar policy. The importance of this road is so well understood in these provinces, that we never had a doubt of the early construction of this portion of the line.—The provincial guarantees, which will be readily given to any reasonable amount, will command money in England at the lowest rates, from the great interest felt in that project there. The great eastern division of the line will be completed with all the dispatch practicable in a work of such magnitude.

The only portion of the line which will labor for want of means is that from Bangor to the eastern boundary of Maine. Much the largest part of this distance is through a wilderness, which can contribute but little towards the work. The land on this portion of the route, though valuable, is unsettled, and though it would, in the immense quantities of valuable timber which it contains, furnish a large amount of business to a road in operation, yet it can contribute but little to secure its construction. The principle part of the means for this portion of the line, therefore, must come from parties not immediately interested in property along the line of the route. Upon whom, then, shall this burden fall?

There can be no question to our minds but the State of Maine will extend a large amount of aid to this link by appropriating a portion of the proceeds of her public lands. These she can give,

though the State cannot, by the terms of her constitution, contract a debt of over \$300,000. She has a strong inducement to this step, not only in the influence it would have in promoting the interests of the whole State, but in the increased value it would give to such territory as she still retains. We cannot expect, however, sufficient aid from that quarter to complete the work.

The State of Massachusetts is to be benefitted still more by this road than even Maine. She still retains a moiety of the public lands in the latter, and would receive a similar advantage in their increased value. Unlike Maine, all her more important interests must be sustained by intercourse and trade with other portions of the country. In Maine, industry is but little diversified—agriculture and ship building being the leading pursuits. The prosperity of Massachusetts depends entirely upon the extent of her intercourse with other sections. She consumes but a very small part of what she produces. The surplus she distributes to every part of the continent, and her profits are measured by the extent and cheapness of her means of transportation. As far as the west is concerned, the trade of which is now regarded by all the Atlantic cities as of paramount importance, Boston is less favorably situated than New York, Philadelphia, or Baltimore. The former has been straining every nerve to overcome her disadvantages of position, by the excellence of her means of transportation. Millions have been expended by that city, the sole object of which was to secure a portion of western trade. These works, though of great advantage considered in their local aspects, have entirely failed to accomplish their primary object. Boston has not, and never can, secure a large portion of western trade. She never can be placed so near the west, commercially, as New York, and trade will follow the cheapest channels with the same certainty as water seeks its own level. For all practicable purposes, Albany is a part of the port of New York, and no temptation can induce western produce, when it has arrived at this point, to cross the Green mountains, in quest of another that offers no greater attractions. Boston is richly repaid for all the roads she has constructed; but the idea of making that city the shipping port of western produce is preposterous. Nature has forbidden this by interposing a mountain barrier, extending from Long Island Sound to the head of Lake Champlain. That city has done well in seeking western outlets for the products of her industry. Time has fully demonstrated that she can never make any part of the west a permanent customer for articles of general merchandise. The growth of her commerce and business are measured by the growth of New England; that of New York by the progress of the whole country. The growth of New York city for the past 5 years has been much greater than the whole population of Boston. The state of trade in that city for two years, compared with that of New York, is a good illustration of what we have stated.

Such we believe to be a correct statement of the relations that Boston sustains to the west. In seeking to extend her trade in this quarter, she is contending against odds that can never be overcome. It is her true policy, therefore, to turn her attention in a direction where she has no rival—to the north and east, where a field vast in extent and resources, is spread out before her, which would richly repay every effort to develop and bring into use.—Boston is the most northern of our leading Atlantic cities. The natural boundary of the territory de-

pendent upon her in the west is the Green Mountain range. All to the north and east of this is the legitimate field for her enterprise and her business; and her growth must always be in exact ratio to that of the territory we have named.

It is with a view of her true interests that the State of Massachusetts should act upon the petition, now before her Legislature, to aid that portion of the great line of railroad before spoken of, running through the eastern part of Maine. The propriety of granting aid to this work resolves itself simply into a question of profit. Will the advantages to be derived from the opening of this line be greater than the amount of aid that Massachusetts is called upon to furnish?

The territory naturally dependent upon Boston for a market, embraces Massachusetts, a small portion of Connecticut and Rhode Island, one-half of Vermont, the States of New Hampshire and Maine, and the Lower British Provinces, making an entire area of about 110,000 square miles, with a population of 2,700,000 souls. With an equal number of inhabitants to the square mile that we now find in Massachusetts, this territory would contain a population of nearly 14,000,000. That the average of the whole is equal to that State, in point of natural resources, there can be no question. The line of the European and North American railway traverses, for its whole length of 470 miles, not only one of the most fertile, but one of the richest mineral districts on this continent, some portions of it capable of supporting as dense a population as any part of Great Britain, almost the whole of which is at the present time covered with a dense forest.

There is no portion of this country, upon which a railroad would exert a greater influence in developing its resources, increasing the number of inhabitants, in stimulating the growth of villages and towns, and in creating a market for the products of the manufacturing establishments of New England, and in giving employment to, and stimulating the growth of her commercial marine. If the completion of this work can be secured by the appropriation of \$500,000 on the part of Massachusetts, she can make no investment that will yield so profitable a return. This road would accomplish more for Boston than all the roads, the objects of which have been to connect her with the west. If Maine, New Brunswick and Nova Scotia contained the average population of the rest of New England, Boston would number twice its present population, with a business three times as great as she at present enjoys. This road, too, would again place Boston ahead of New York in the receipt of foreign intelligence, and secure to are all the advantages to be derived from such a position.

For the reasons stated, we are convinced that, could the people of Massachusetts fully appreciate the benefit they would derive from the construction of the above line, they would not hesitate in extending to it any aid necessary to its completion; more especially as the whole project can be realized, by assisting in the construction, of a very small portion of the line.

Pennsylvania.

Reading Railroad.—The Spring and summer arrangement of passenger trains on the Reading railroad went into operation on Tuesday last, the 1st inst. Two trains now run each way, daily, (Sundays excepted) both carrying the mails. The morning lines leave Pottsville and Philadelphia at 7½ o'clock, passing Reading for Philadelphia at 8

o'clock, 57 minutes, and for Pottsville at 10-07.—The afternoon trains start from each end of the line at 3½ o'clock, and pass Reading, for Philadelphia at 4-57; and for Pottsville at 6-07. The following are the reduced rates of fare on the railroad, viz:—

	1st class.	2d do.
From Pottsville to Philadelphia...	\$2.75	\$2.25
“ Reading to “	1.75	1.45
“ “ to Pottsville.....	1.05	.85

Railroad Law.

In the Supreme Court at Boston, Monday, judgment was given for defendants on demurrer, in the suit of the Boston and Lowell railroad, against the Boston and Maine railroad. The plaintiffs claimed large damages, because the defendants who formerly entered the Lowell road at Wilmington, and thence came to Boston, had obtained a charter from the Legislature and entered the city by a separate route, thereby putting the plaintiffs to great loss after they had been to considerable expense to provide accommodations for this increased travel.—The defendants urged that the plaintiffs failed to provide sufficient accommodations; that the tolls were too high, and that they could not come into the city without stopping at Wilmington, which they did not desire to do.

New York.

Long Island Railroad.—The following gentlemen have been elected directors of this road for the present year:—Moses Maynard, Jr. Luther C. Clark, John Paine, New York; Charles R. Marvin, Brooklyn; Wm. A. Smith, Richard Varick, New York; Enoch W. Clark, Philadelphia; Robert Farley, Boston; Earl P. Mason, Providence; A. G. Thompson, Jr., Charles Jeffrey Smith, Isaac E. Haviland, Long Island; Cornelius McCoon, New York. We believe Messrs. Paine, Marvin, E. W. Clarke, Farley and Mason are now members. Under the new management the affairs of this road are prospering beyond expectation. A spirit of accommodation towards the public has been evinced which has met by a largely increased patronage. The more frequent trains put on have proved the usual result of a larger travel, which will be still further increased when the heavy rail is down between Brooklyn and Jamaica.

Quebec and Richmond Railway.

The Quebec and Richmond railway occupies a very prominent position in the Canadian system of railroads—from the fact, that while it will furnish to Quebec, through its connection with the Portland and Montreal railway, the shortest access to the sea, it will also secure the most direct line between the cities of Quebec and Montreal—in less distance, even, than by steam navigation on the river St. Lawrence.

The charter granted in 1845, by the Parliament of Canada, for the Portland railway, authorized the same company to construct a branch line to Quebec. The passage of the Facility Bill in 1849, giving the Colonial guarantee toward certain trunk lines not less than 75 miles in length, led the friends of the Quebec branch to apply for an independent charter in 1850, which was finally granted in August of last year.

Active measures have since been adopted, to carry out this work under the new charter, and the company last fall appointed A. C. MORTON, Esq., the Chief Engineer of the Atlantic and St. Lawrence railroad, to make the surveys of the line. As soon as the surveys of the European and North Ameri-

can railway, made under the authority of the Legislature of Maine, were completed by Mr. Morton, he transferred the principal parties engaged in that survey to the Quebec line, who are now actively engaged in that service. R. T. BAILEY, Esq., who had charge of the field service in the surveys of the great eastern line in Maine, is at the head of the party on the Quebec survey, under Mr. Morton. We are gratified to learn that by the energetic exertions of Mr. Bailey, the survey will be completed at an early period in the spring, and that there is every assurance that a most favorable line, both as to directness and gradients, will be obtained.

The corporation of Quebec propose to take £100,000 in this line, and parties in England have agreed to take a good portion of the stock. These sums, united to the local subscriptions at Quebec, and along the route, will secure the completion of the line to a point that will touch the government guarantee, under the Facility Bill, before spoken of.

This enterprise is clearly one of the most promising ones of the day. The population of Quebec is rising 40,000, and that of Montreal over 50,000. Those who know anything of the summer travel between the two cities cannot doubt the value of the stock on those portions of the two lines which form a connection between the two cities. Quebec is by far the most interesting locality of the continent, excepting Niagara Falls. Its commanding military position, its prodigious fortifications, and the historical associations connected with it, will always conspire to make it the favorite resort of the pleasure tourist—while the trade of that region is destined to make rapid progress under the new influences brought about by the free navigation of the St. Lawrence river.

Vermont.

Western Vermont R. R.—The line of this road leaves the Rutland Railroad at Rutland, and thence runs south, up the valley of Otter Creek, passing through the towns of Rutland, Clarendon, Wallingford, Danby, Mount Tabor and Dorset, to the summit between Otter Creek and the Battenkills; traversing the valley of the Battenkill, it passes through the towns of Dorset, Manchester, Sunderland, Arlington, Shaftsbury and north part of Bennington, to the State Line, (53 9-10 miles) where it connects with the Troy and Boston Railroad. When finished it will form a connecting link in the great chain of railway 380 miles in extent, stretching from New York to Montreal; and will present the shortest and most feasible route between the Rutland and Burlington road, and the valley of the Hudson. This will secure to the line the business of a country rich in mineral and agricultural resources. Besides which, no inconsiderable portion of freight from the Rutland and Burlington road, having for its destination the valley of the Hudson, must take the Western Vermont road as an outlet to a market, as freight over any parallel route through New York, is compelled to pay Canal tolls.

The whole line was placed under contract in October 1850. Twenty-three miles extending from Rutland south, is to be finished and ready for superstructure by the first of next September. The remainder will be completed by the 1st of October. The estimates of cost are as follows: for grading, masonry and bridging, 58 3-10 miles, \$6,060.90 per mile, \$353,583.75; land, damages and fencing, \$67,840; 65 miles of superstructure, including turnouts, at \$5,300 per mile, \$344,500; Depots,

Engine Houses, Way Stations, &c., \$38,000; other items of equipage, including expense of Engineering and Superintendence, \$29,700; or a total of \$63,623.75. To this sum must be added cost of Engines &c. as follows: five 18 ton Engines, \$32,500; five 22 ton Engines, \$35,000; six long passenger cars, \$12,000; three long baggage cars, \$2,400; one hundred 8 wheel freight and platform cars, \$65,000; hand and gravel cars and one snow plow, \$7,100; or a total of \$154,000. This would make the whole cost of the road, in running and business order, \$987,623.75; or \$16,911 per mile. It is believed that the road, according to these estimates, will cost less than that of any other constructed or constructing in New England, while it will be in every way as well built.

In addition to the main line, the company is also constructing a branch of 4½ miles from North Bennington to Bennington.

For the country traversed, as well as a large part of Vermont, the above offers the shortest and best route to the Hudson River, and consequently to New York. For its whole course it follows a valley between two ranges of the Green Mountains, and which, in Iron, Marble and other valuable minerals is one of the richest districts in the country. The marble alone would give a large business to this road. This article, of which a large quantity is sent to market, is now taken at great expense over ordinary roads, by teams, to the Champlain Canal. In many other respects the business prospects of the road are very flattering.

The means of the company are ample to prepare the road for the iron. For this they rely, as do all new projects, upon an issue of bonds. The cost of the whole road will be about \$1,000,000, only 400,000 of which it is proposed to borrow. When we recollect that the debts of many of the New England roads are greater than the whole cost of this, the value of the security offered by these bonds will at once be seen. The estimates of the cost of the road is made up of contract prices, and though one quarter of the grading is taken in stock, yet there was hardly an appreciable difference between bids for entire cash, and those for cash and stock.

The directors of the company are Myron Clark, Robinson Hall, A. R. Vail, W. A. Cochran, M. C. Deming, P. L. Robinson, A. P. Lyman, Solomon Foote and Lemuel Bottom, Directors. W. B. Gilbert, Chief Engineer.

Railroad Spikes, Wrought Chairs and Fastenings.

THE subscribers continue to manufacture, with increased facilities, Hook and Flat Head Railroad Spikes and Chairs. The points being FINISHED BY HAND, have a long taper, and sharp point, and are much superior to those made entirely by machinery. We are also prepared to furnish Wrought Chairs, Clamps and Fastenings of every description, either punched or plain. The best quality of refined iron is used in the above articles, and our prices will be made as favorable as any in the country.

The patent Clinch Spike will be found an improvement to secure the rail at the joints.— They drive in the manner shown and are not liable to work loose.

All communications, addressed to the undersigned, will meet with prompt attention.

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Stickney & Beatty, DEALERS IN IRON AND IRON MANUFACTURERS.

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To Contractors.

ENGINEER'S OFFICE CENTRAL OHIO R. R., }
Zanesville, March 20, 1851. }
SEALED PROPOSALS for the Masonry of a Railroad Bridge across the Muskingum River at Zanesville, will be received at this office until the 15th of May next.

Also for the Iron or Wooden Superstructure of said Bridge, and for draw bridge across the Canal. Plans and specifications furnished on the 1st of May next. Bidders may furnish their own plans and specifications, if filed at this office prior to that day.

By order of the Board.
ROBERT MAC LEOD,
Chief Engineer.

For Sale.

TWO Locomotive Engines—10½ tons weight, built by Baldwin. Also Four Eight-wheeled Passenger Cars, with side seats, all in good running order. Apply to WM. E. MORRIS,
Office of Philad., Germantown & Norristown Railroad Co., 9th and Green sts., Philadelphia. 3m5

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Atkinson, T. C.,
Alexandria and Orange Railroad, Alexandria, Va.

Clement, Wm. H.,
Little Miami Railroad, Cincinnati, Ohio.

Cozzens, W. H.,
Engineer and Surveyor, St. Louis, Mo.

Alfred W. Craven,
Chief Engineer Croton Aqueduct, New York.

Floyd-Jones, Charles,
Alton and Sangamon Railroad, Alton, Illinois.

Gay, Edward F.,
Columbia and Philadelphia Railroad, Philadelphia Pa.

Gilbert, Wm. B.,
Rutland and Burlington Railroad, Rutland, Vt.

Gzowski, Mr.,
St. Lawrence & Atlantic Railroad, Montreal, Canada.

Grant, James H.,
Nashville and Chattanooga R. R., Nashville, Tenn.

S. W. Hill,
Mining Engineer and Surveyor, Eagle River, Lake Superior.

Holcomb, F. P.
Southwestern Railroad, Macon, Ga.

Latrobe, B. H.,
Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,
Buffalo and Conhocton Valley Railroad, Bath, N. Y.

Morris, Elwood,
Schuylkill Navigation, Schuylkill Haven, Pa.

Nott, Samuel,
Lawrence and Manchester Railroad, Boston,

Osborne, Richard B.,
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Prichard, M. B.,
East Tennessee and Georgia R. R., Cleveland, Tenn.

W. Milnor Roberts,
Bellefontaine and Indiana Railroad, Marion, Ohio.

Roberts, Solomon W.,
Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Sanford, C. O.,
South Side Railroad, Virginia.

Schlatter, Charles L.,
Northern Railroad (Ogdensburg), Malone, N. Y.

Steele, J. Dutton,
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Trautwine, John C.,
Civil Engineer and Architect, Philadelphia.

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STATE ASSAYER, late Geologist to Maine, Rhode Island, New Hampshire, and the United States, offers his services to his friends and the public in making any Chemical, Mineralogical or Geological researches that may be required for the improvement of Agriculture and the Manufacturing Arts. Particular attention will be paid to the exploration of mines and to assaying of ores of the metals.
State Assayer's office, 31 Somerset st.
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Spring Steel,
Of all descriptions, *Warranted Good.*
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Manufacturers of Machinists' Warranted Best Cast Steel *Files*, expressly for working upon Iron and Steel, made very heavy for recutting.
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Pig Iron, Hammered Railroad Car and Locomotive Axles, Force Pumps of the most approved construction for Railroad Water Stations and Hydraulic Rams, etc., etc.
July, 27, 1849.

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Models of this Track, on the most improved plans, may be seen at the Engineer's office of the New York and Erie Railroad.

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109 N. Water St., Philadelphia.

Iron Store.

THE Subscribers, having the selling agency of the following named Rolling Mills, viz: Norristown, Rough and Ready, Kensington, Triadelphia, Pottsgrove and Thorndale, can supply Railroad Companies, Merchants and others, at the wholesale mill prices for bars of all sizes, sheets cut to order as large as 58 in. diameter; Railroad Iron, domestic and foreign; Locomotive tire welded to given size; Chairs and Spikes; Iron for shafting, locomotive and general machinery purposes; Cast, Shear, Blister and Spring Steel; Boiler rivets; Copper; Pig iron, etc., etc.
MORRIS, JONES & CO.,
Iron Merchants,
Schuylkill 7th and Market Sts., Philadelphia.
August 16, 1849.

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. **J. F. WINSLOW, President**
Troy, N. Y.
ERASTUS CORNING, Albany;
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md
November 6, 1848.

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phoenix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehanna river; which two establishments are now turning out upwards of 1800 tons of finished rails per month. Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.

REEVES, BUCK & CO.
45 North Water St. Philadelphia.
March 15, 1849.

LAP—WELDED WROUGHT IRON TUBES

FOR
TUBULAR BOILERS,
FROM ONE AND A QUARTER TO SEVEN INCHES IN DIAMETER.
THE ONLY Tubes of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.
THOMAS PROSSER & SON, Patentees,
28 Platt street, New York.

Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron.
THOMAS B. SANDS & CO.,
73 New street,
New York.
February 3, 1849.

Glendon Refined Iron.

Round Iron, Band Iron, Hoop Iron,
Square " Flat " Scroll "
Axles, Locomotive Tyres,
Manufactured at the Glendon Mills, East Boston, for sale by
GEORGE GARDNER & CO.,
5 Liberty Square, Boston, Mass.
Sept. 15, 1849. 3m37

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for rail roads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.

JOHN F. WINSLOW, Agent.
Albany Iron and Nail Works, Troy, N. Y.
The above Spikes may be had at factory prices, of Erastus Corning & Co Albany; Merritt & Co., New York; E. Pratt & Brother, Baltimore, Md.

AMERICAN PIG IRON.

"POUGHKEEPSIE" brand, Dutchess Co., N. Y.
"GLENDON" brand, Lehigh county, Pa.
Orders for the above two well known brands will be received, and promptly executed, by
J. & L. TUCKERMAN,
69 West St., New York.

Faggotted Car and Engine Axles

FORGED by **RANSTEAD, DEARBORN & Co.,**
Boston, Mass.
These Axles enjoy the highest reputation for excellence, and are all warranted.

Bowling Iron. Stamped B.O.

Railway Tire Bars
Locomotive and other Axles
Boiler Plates
Rivet Iron
Locomotive Frame do
Bars,
and every other description of this superior Iron.

The subscribers, agents for the sale of Bowling Iron, are prepared to execute orders for importation, especially for railway and machinery uses, with despatch from the manufacturers.

RAYMOND & FULLERTON, 45 Cliff st.

**Ibbotson, Brothers & Co's
CELEBRATED CAST STEEL**

AND
Best Cast Steel Royal Improved Files, well known as better adapted for Engineers' and Machinists' purposes than any now in use in the United States.

Every description of Square, Octagon, Flat and Round Cast Steel, Sheet, Shovel and Railway Spring Steel, etc., and Steel to order for any purposes—manufactured at their works in Sheffield—and universally known by the old stamp "Globe."

HENRY I. IBBOTSON, Agent,
218 Pearl st., New York.

Smith & Tyson,

IRON COMMISSION MERCHANTS,
BALTIMORE.

REFINED Juniata Charcoal Billet Iron for Wire. Do. for Bridging, of great strength. Flat Rock, Boiler and Flue Iron, rolled to pattern. Elba, Wheel Iron of great strength and superior chilling properties. Elba Forge Iron, American Shot Iron, Cut Nails, Spikes and Brads, Nail and Spike rods, Railroad Spikes of superior quality, Wrought Chair plates of any pattern, punched or plain.

**WILLIAM JESSOP & SONS'
CELEBRATED CAST-STEEL.**

The subscribers have on hand, and are constantly receiving from their manufactory,

PARK WORKS, SHEFFIELD,
Double Refined Cast Steel—square, flat and octagon. Best warranted Cast Steel—square, flat and octagon. Best double and single Shear Steel—warranted. Machinery Steel—round.

Best and 2d gy. Sheet Steel—for saws and other purposes.

German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.

Genuine "Sykes," L. Bilster Steel.

Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by

WM. JESSOP & SONS,

91 John street, New York.

Also by their Agents—

Curtis & Hand, 47 Commerce street, Philadelphia.

Alex'r Fullerton & Co., 119 Milk street, Boston.

Stickney & Beatty, South Charles street, Baltimore.

May 6, 1848.

Railroad Iron.

B. O. Railway Tires, Railway Wheels,
Scotch Pig Iron, Tin Plates and Banca Tin,
Muntz Patent Metal Sheathing,
Baltimore Copper.

Contracts for Rails made on behalf of the manufacturers, for delivery at any ports in the United States, at fixed prices.

Bowling Tires and Tire Bars and Scotch Pigs imported to order.

Muntz's Ship-sheathing, and a general stock of Tin Plates and Banca Tin in store, and for sale by

RAYMOND & FULLERTON, 45 Cliff st.

IRONDALE PIG METAL, MANUFACTURED
and for sale by the Bloomsburg Railroad Iron Co.

LINDLEY FISHER, Treasurer.

75 N. Water St., Philadelphia.

Car Wheel Iron.

THE celebrated cold blast "Conowingo" Pig Iron, for Railroad Wheels, Chilled Rolls, etc., for sale by

E. PRATT & BROTHER,

Baltimore, Md.

Railroad Iron.

3,000 TONS C. L. MAKE 63½ lbs. per yard, now landing and to arrive.

Also contracts made for future delivery of above superior make English Iron.

300 Tons Banks Best Iron, Round, Square and Flat.

200 " English Bar " " " " "

10 " 9-16 Square Iron for Railroad Spikes.

For sale in lots to suit purchasers by

DAVID W. WETMORE.

New York, March 26, 1860.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

**JOHNSON, CAMMELL & Co's
Celebrated Cast Steel,**

AND
ENGINEERING AND MACHINE FILES, which for quality and adaptation to mechanical uses, have been proved superior to any in the United States. Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cyclops Steel Works Sheffield.

JOHNSON, CAMMELL & CO.,
100 William St., New York.

November 23 1849.

Bowling Tire Bars.

40 Best Flange Bars 5½x2 inches, 11 feet long.
40 " 5½x2 " 7 feet 8 in. long.
40 " Flat " 6x2 " 11 feet long.
40 " 6x2 " 7 feet 8 in. long.

Now in store and for sale by

RAYMOND & FULLERTON,
45 Cliff street.

**Wheel, Forge and Foundry
Iron.**

LOCUST GROVE Wheel Iron of great strength and superior chilling property.

Balt. Charcoal Forge Iron, from Patuxent, Curtis Creek and Gunpowder furnaces.

Elkridge Foundry Iron, of superior strength and softness. Anthracite and Charcoal Iron from Pennsylvania and Virginia. Gas and Water Pipes, Lamp Posts from Elkridge furnace.

LEMMON & GLENN,

62 Buchanan's Wharf, Baltimore.

\$m9

Railroad Iron.

1650 Tons, weighing about 61 lbs. per yard, 40 tons, weighing about 52 lbs. per yard, and 825 tons, weighing about 53½ lbs. per yard, of the latest and most approved patterns of T rail, for sale by

BOORMAN, JOHNSTON & CO.,

119 Greenwich street.

New York, Aug. 26, 1850.

N.B.—B. J. & Co are also prepared to take contracts for English rails, delivered in any of the Atlantic ports of the United States.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract to deliver Rails of superior quality, and of any size or pattern, to any ports of discharge in the United States.

COLLINS, VOSE & CO.,

74 South St.

New York, June 1, 1850.

Tredegar Iron Works.

ROLLING MILL FOUNDRY AND MACHINE SHOPS. The undersigned continues to manufacture at his Works in this city (from best charcoal metal) Bar Iron of every description, embracing—Rounds and Squares, from ½ to 5 inches diameter. Flats, from ½ to 7 inches, all thicknesses. Bands and Scrolls, all sizes. Boiler plate and Plough Iron. Railroad and Locomotive Axles and Tires. Locomotive Frames, Spikes and Plates. Hoops, Ovals, Half Ovals, Half Rounds, Angle, T, L, and indeed every description of Iron usually manufactured, all of which he warrants to be equal to any made in this country. He also manufactures at his Foundry and Machine Shops all descriptions of Railroad Work, say, Locomotives, Railroad Wheels and Axles complete and ready for the road, Railroad Chairs, etc. Also, Marine and Stationary Engines all sizes, Sugar mills and Engines, Horse mills, and every kind of Machinery usually required for the operations of the country. He has paid particular attention to getting up machinery, etc., for Gold Mine operations, and those in want of such work might find it to their advantage to give him a call.

J. R. ANDERSON.

Richmond, Va., Sept. 10, 1850.

CUT NAILS OF BEST QUALITY, BAR IRON

(including Flat Rails) manufactured and for sale by

FISHER, MORGAN & CO.,

75 N. Water St., Philadelphia.

Car Wheel Iron.

100 Tons "Columbia" No. 2 Cold Blast Charcoal Iron.

300 Tons "Salisbury" No. 1, do. do.

For sale by CHARLES T. GILBERT,
No. 90 Broad st.

New York, Sept. 21, 1850.

Railroad Spikes.

THE subscribers are prepared to make and execute contracts for Railroad Spikes of a superior quality, manufactured by the New Jersey Iron Company, at Boonton.

DUDLEY B. FULLER & CO.

139 Greenwich st. corner of Cedar.

**S. S. Keyser & Co.,
IRON WAREHOUSE,**

Corner of South and Pratt Streets,
BALTIMORE, MD.

Selling Agents for the Rough and Ready Bar Iron and Elk Boiler and Flue Iron Rolling Mills, Sarah and Taylor Furnaces, and Wrightsville Hollow Ware Foundry, and Dealers in Bar and Sheet Iron, and Cast, Sheer, German, Bilster, Spring and Electroised Steel, etc., etc.

Tubes.

The undersigned are in direct communication with the Birmingham Patent Lap Welded Iron Tube Company, for the sale of their very excellent and superior Boiler and Gas Tubes in large or small quantities.—These Tubes are sold very extensively in England and on the continent of Europe are sold exclusively by

WM. BIRD & CO.,

Iron and Tinplate Merchants,

44 Wall st., New York

5 Martin's Lane, City, London,

and 140 Buchanan st., Glasgow.

Railroad Spikes, Boiler Rivets, etc.

THE Subscribers, Agents for the sale of James S. Spencer's, Jr. Railroad and Boat Spikes, Boiler Rivets, and Wrought Iron Chairs for Railroads, made at his Works near this city, will execute all orders with promptness, despatch, and of the best quality.

ALSO IMPORTERS of English refined and Merchant bar Iron; Extra refined Car and Locomotive Axles (from 3½ to 6½ inches in diameter); B. O. Locomotive Tire (welded by Baldwin). Also, supply Boiler and Flue Iron cut to pattern or otherwise.—Spring, Shear, and Cast Steel, etc., etc., etc.

T. & E. GEORGE.

Philadelphia, November 14, 1850.

Railroad Iron.

THE UNDERSIGNED, HAVING made arrangements abroad, are prepared to contract for the delivery of Foreign rails, of approved brands upon the most favorable terms.

They will also make contracts for American rails, made at their Trenton works, from Andover Iron, in whole or in part, as may be agreed upon.

They are prepared to furnish Telegraph, Spring and Market Wire; Braziers and Wire Rods; Rivets and Merchant Bars to order, all made exclusively from Andover Iron. The attention of parties who require Iron of the very best quality for special purposes, is respectfully invited.

COOPER & HEWITT,

17 Burling Slip, New York.

February 15, 1850.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract for the delivery of English, Welsh and Scotch Rails, of any pattern and weight, also for every description of English, Welsh, Scotch, and Swedish Iron, Railway Chairs and Spikes, Rivets, Bolts, Nuts, Washers, Chain Cables, Anchors, Tin Plates, German Spelter, Iron Castings, and every description of Machinery.

WILLIAM BIRD & CO.,

Iron and Tin Plate Merchants,

44 Wall st., New York.

And at 5 Martin's Lane, City, London,

and 140 Buchanan st. Glasgow.

July 27th, 1850.

Railroad Iron.

THE "Montour Iron Company" is prepared to execute orders for Rails of the usual patterns and weights, and of any required length not exceeding 30 feet per rail. Apply at the office of the Company,

No. 73 South 4th st., Philadelphia,

Or to the Agents,

CHOUTEAU, MERLE & SANFORD,

No. 51 New st., New York.

September, 1850.

Railway Iron.

THE Subscribers will contract to deliver, in the course of the ensuing Spring and Summer, the best English Rails, made by a particular specification, and of any pattern required.

DAVIS, BROOKS & CO.,
68 Broad st.

On hand for sale, English rails of 53 lbs. to the yard, made by particular specifications.
January 10, 1851. 2m

Railroad Iron for Sale.

THE Mansfield and Sandusky City Railroad Co. have on hand from twelve to fifteen hundred tons of American Flat Bar Railroad Iron, weighing 33 lbs. to the lineal yard, which they offer for sale at reasonable rates.

The iron has been in use about four years, and is sound and in good condition. It is 2½ by ½.

It will be ready for delivery at short intervals between the opening of navigation in the spring and the 1st September next.

For further particulars inquire at the office of the company at Sandusky City, Ohio.

C. G. FORBES, President.

December 24, 1850.

UNION WORKS,

North street, opposite the Railroad Depot,
BALTIMORE.

Poole & Hunt,

Manufacturers of Steam Engines and Mill Gearing, Machinists' Tools, and all kinds of heavy and light Machinery.

Also put up Arrangements of Wrought Iron Pipes for heating buildings and conveying steam or water. Castings of every kind furnished at short notice.

Every exertion will be made to insure the satisfaction of customers.

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.

August, 16, 1849.

6m33

Railroad Paint.

FOR depot buildings, bridges, burthen cars, wheels and axles, pipes, steam joints, fences, and every description of work requiring protection from the action of the elements. Price per barrel of 300 pounds, nine dollars.

Orders addressed to J. M. HALL, 36 South street, New York, will receive prompt attention.

March 18, 1851.

3m*

To Engineers and Ship Builders.

THE Advertiser is desirous of a situation in a respectable concern, he has acquired a practical knowledge of his business in the establishment of R. Napier, Esq., Glasgow, has since for several years had the management of the works of an extensive Steam Packet Co., for whom he designed and built some Iron Screw Ships, whose capabilities and performances give the highest satisfaction. While acquainted with all the most approved modes of construction of marine engines, he is prepared to submit original designs. In modelling and draughting he has had much and successful experience. Can produce the highest testimonials as to character and abilities from the first engineer on the Clyde.

Address ENGINEER, box 2315 lower postoffice.

Lawrence Scientific School, HARVARD UNIVERSITY,

CAMBRIDGE MASSACHUSETTS.

SPECIAL Students attend daily from 9 o'clock A. M. till 5 o'clock P. M., in the Laboratories, and under the direction, of the following Professors:

Louis Agassiz, L.L.D., Professor of Geology and Zoology. Jeffreya Wyman, M.D., Professor of Comparative Anatomy and Physiology. Henry L. Eustis, A.M., Professor of Engineering. Eben Norton Horsford, Professor of Chemistry.

Instruction is also given by Prof. Peirce in Mathematics, Prof. Lovering in Physics, and the Messrs. Bond at the Astronomical Observatory.

All lectures delivered to under graduates of the College are free to members of the Scientific School.

For further information apply to

E. N. HORSFORD, Dean of the Faculty.

Boston Locomotive Works,

—Late Hinkley & Drury—

No. 380 Harrison Avenue,
BOSTON.

Locomotive and Stationary Steam Engines; Boilers; Iron, Brass, Copper and Composition Castings; Coppersmith's Work, and all kinds of Railroad Machinery furnished at short notice.

ALSO



Van Kuran's Improved Railroad Wheel,

Patented May 1, 1849. Manufactured under the personal superintendence of the Patentee, as above.

Orders for any quantity of wheels executed with dispatch, and wheels and axles fitted in the very best manner and at the lowest rates. Address

DANIEL F. CHILD, Treasurer, Boston.



Providence Tool Co.,

MANUFACTURERS OF

Plane Irons, Tooth Irons, Soft Moulding and Rabbit Irons, Cornice Irons, Plow Bits, and Planing Machine Knives:

NUTS, WASHERS AND BOLTS.

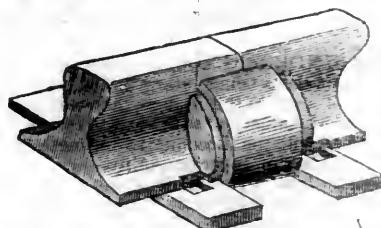
—ALSO—

PLATE HINGES AND PICK AXES.

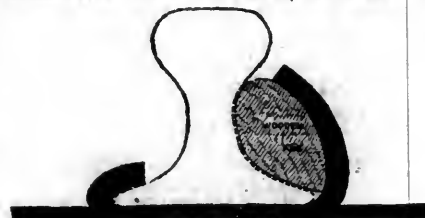
They are prepared to execute orders for all descriptions of Cold Punching and Job Work.

WM. FIELD, Agent. RUFUS WATERMAN, Treas.
PROVIDENCE, R. I.

Railroad Iron, SPIKES, AND WROUGHT IRON CHAIRS.



THE Undersigned, Agent for Manufacturers, is authorized to contract for Welsh Railroad Iron of the best quality, and deliverable at any port on favorable terms, also Spikes and Wrought Iron Chairs, made from the best iron, and of any pattern and weight. The new Wrought Iron Chair, with the introduction of a "Key," as per the annexed plan, will be found a great improvement on the old pattern.



Boiler Plates of superior quality, perfect regularity in the squaring and thickness, and made with great care.

Samples can be seen at the office, No. 20 Beaver st.
CHARLES ILLIUS.

TO RAILROAD COMPANIES, CAR MANUFACTURERS, &c.

THE Undersigned hereby gives public notice, that the Commissioner of Patents, pursuant to his decision in relation thereto, on the 8th day of October, 1850, issued to him a Patent for the sole right to manufacture, and exclusive use of the INDIA RUBBER CAR SPRING, on account of priority of invention of said Spring.

F. M. RAY

New York, Oct. 23, 1850.

Iron Trade of Pennsylvania.

DOCUMENTS and Statistics relating to the Manufacture of Iron in the State of Pennsylvania—giving a history of the manufacture from its commencement to this date, illustrated by diagrams. Also tables giving the address and capacity of every establishment in the State. Prepared by direction of the late convention of the trade held in Philadelphia.

For sale by

LINDSAY & BLACKISTON, Philadelphia.

FIELDING LUCUS, Jr., Baltimore.

HENRY G. NICHOLS, 79 Water st., N. Y.

or at this office—price \$1 00.

It will be sent by mail to any order enclosing the money, and post paid.

Ulster Iron.

THE ULSTER IRON WORKS, Saugerties, N. Y., continue in full operation. Orders for round square, flat, band, hoop and scroll iron, will be received and promptly executed by

J. & L. TUCKERMAN,
69 West St., New York.

Patent Machine Picket Fence

SIX DIFFERENT STYLES of this fence are now made by patent machinery; and is by far the most economical fence for Railroads, Farms, Yards, etc., ever yet offered to the public, costing only from 4 to 30 cents per foot, according to pattern; and is so put up as to be shipped at a trifling expense. Full particulars will be furnished, by addressing the subscriber, to whom all orders should be sent.

N. STRATTON, Troy, N. Y.

Lovegrove's Patent Cast Iron Water and Gas Pipes.

THE Subscriber, the Inventor and Patentee of the Centrifugal mode of giving form to metallic substances while in a molten state, is preparing to make Cast Iron Water and Gas Pipes, of any dimensions, at prices much lower than they can be made in the old manner, and the pipes warranted to stand a pressure of three hundred pounds to the square inch, and to be soft enough to drill. Steam Engines and all kinds of machinery. Cast Iron Doors and Frames, and Mill Castings of every description, made to order.

THOMAS J. LOVEGROVE,

Machinist and Founder,

West Falls Avenue, below Pratt st., Baltimore.

American Railroad Iron.

1000 Tons, weighing 50 lbs. per yard, manufactured by Reeves, Abbott & Co., at the Safe Harbor Iron Works, and now lying in yard at Brooklyn, for sale by

CHOUTEAU, MERLE & SANFORD,
No. 51 New street.

Spikes, Spikes, Spikes.

ANY person wishing a simple and effective Spikes Machine, or a number of them, may be supplied by addressing

J. W. FLACK,

March 6, 1850.

Troy, N. Y.

Railroad Iron.

2000 Tons, weighing 53 pounds per lineal yard, of the most approved pattern of T rails, in store and to arrive, for sale by

COLLINS, VOSE & CO.,

74 South St.

New York, June 1, 1850.

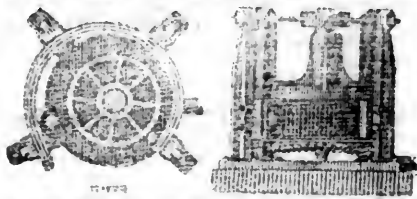
India-rubber for Railroad Cos.

RUBBER SPRINGS—Bearing and Buffer—Fuller's Patent—Hose from 1 to 12 inches diameter. Suction Hose. Steam Packing from 1-16 to 2 in. thick. Rubber and Gutta Percha Bands. These articles are all warranted to give satisfaction, made under Tyer & Helm's patent, issued January, 1849. No lead used in the composition. Will stand much higher heat than that called "Goodyear's," and is in all respects better than any in use. Proprietors of railroads do not be overcharged by pretenders.

HORACE H. DAY,

Warehouse 23 Courtlandt street,

New York, May 21, 1849.

MACHINERY.**Henry Burden's Patent Revolving Shingling Machine.**

THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phenixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll sounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y.

P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery for making Spikes, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

CHILLED RAILROAD WHEELS.—THE UNDERSIGNED are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

Brown's Old Established SCALE WARE HOUSE,

NO. 234 WATER ST., NEW YORK.

THE Subscriber, Practical Manufacturer of Scales of every description, respectfully asks the attention of Railroad Companies to his Improved Wrought Iron Railroad Track and Depot Scales which for strength, durability, accuracy, convenience in weighing, and beauty of workmanship, are not surpassed by any others in this country.

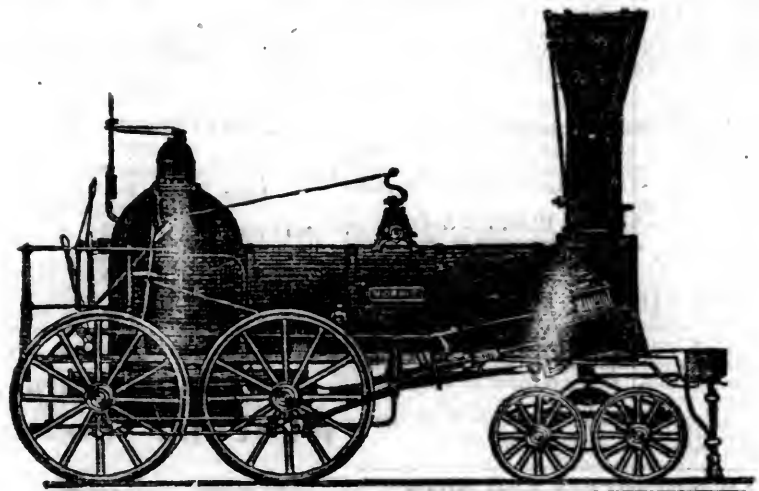
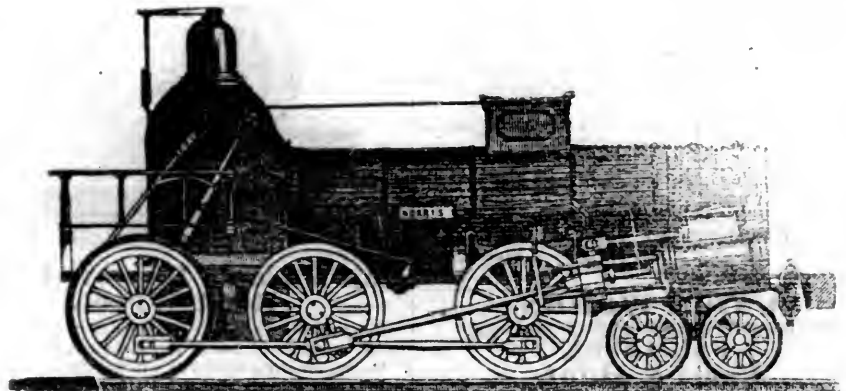
He is aware that this is rather a bold assertion for him to make, yet he can say with confidence that they have but to be tried to give them precedence over all others.

J. L. BROWN.
Bank Scales made to order, and all Scales of his make Warranted in every particular.

References given if required

NORRIS' LOCOMOTIVE WORKS.

BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,



THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size. Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tyres are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS

PATENT MACHINE MADE HORSE-SHOES.

The Troy Iron and Nail Factory have always on hand a general assortment of Horse Shoes, made from Refined American Iron.

Four sizes being made, it will be well for those ordering to remember that the size of the shoe increases as the numbers—No. 1 being the smallest.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

Etna Safety Fuse.

THIS superior article for igniting the charge in wet or dry blasting, made with DUPONT'S best powder, is kept for sale at the office and depot of

REYNOLDS & BROTHER,

Manufacturers,

No. 85 Liberty St.

NEW YORK.

And in the principal cities and towns in the U. States.

The Premium of the AMERICAN INSTITUTE was awarded to the Etna Safety Fuse at the late Fair held in this city.

November 3, 1849.

ly

COLUMBUS, OHIO, Railroad Car Manufactory. RIDGWAYS & KIMBALL,

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AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

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J. T. HODGE, *For Mining and Metallurgy.*
GEN. CHAS. T. JAMES, *For Manufactures and the
Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & CO., 136 NASSAU ST.

Saturday, April 19, 1851.

For the American Railroad Journal. Railroads between Cincinnati and Lake Erie.

Cincinnati and Cleveland are now, and prospectively, the two most important cities of Ohio.—They are the great river and lake ports of the State—the grand concentrating depots of an inland commerce already of immense extent, and destined to grow as the whole country grows, with wonderful rapidity. The union of these cities by the continuous line of railroads recently opened through Xenia and Columbus, forms an important epoch in the history of both, and must add largely to their commercial prosperity.

Ohio, so happily constituted in its geographical and geological features, and in its agricultural capabilities, presents one of the most inviting fields for railroad enterprises, which have, indeed, become the principal mediums for the permanent investment of the surplus capital of our country.—

The chief danger to be apprehended is, that nature having done so much for our State, the known boldness, activity and untiring energy of our citizens, may impel them, even with a feeling of fair and generous rivalry, to undertake too many improvements at once. Many of the railroad acts passed within the last ten years, however, appear to be resting snugly and quietly where the Legislature left them, among the archives of the commonwealth—to be revived, or allowed an eternal sleep, as circumstances may require.

But it is not my intention, at this time, to refer to all the railroads of Ohio; I wish merely to glance at a few stretching out their iron arms from Cincinnati towards Lake Erie.

The line which was first opened between the Ohio river and the lake, is that extending from Cincinnati to Sandusky, completed about five years ago. It is 218 miles long, and belongs to two companies—the Little Miami company, from Cincinnati to Springfield, 84 miles; and the Mad River and Lake Erie company, from Springfield to Sandusky, 134 miles. This line passes through Bellefontaine, at a point 102 miles from Sandusky, and 116 miles from Cincinnati by railroad. Both of these roads were laid originally with the flat bar rail, but the companies are now relaying the tracks with a heavy T rail, and intend making some essential improvements of the lines, by straightening and shortening portions of the route.

Another important thoroughfare recently opened between Cincinnati and Cleveland, passing through Xenia and Columbus, is 257 miles long. It belongs to three companies—the Little Miami (before referred to), the Xenia and Columbus, and the Cleveland, Columbus and Cincinnati companies.

Cincinnati to Xenia.....	67 miles.
Xenia to Columbus.....	54 "
Columbus to Cleveland.....	136 "

Cincinnati to Cleveland.....257 miles.

The Xenia and Columbus road was opened last season, in connection with the Little Miami road to Cincinnati. It is well constructed, with a T rail weighing 61 lbs. to the yard, and was doing a good business even before the completion of the through connection from Columbus to Cleveland in February last. The opening, or rather closing, of that great link, has added largely to its through business.

A third railroad route between Cincinnati and

the lake, will be finished during the present season, by means of the opening of the Cincinnati, Hamilton and Dayton road, the Springfield and Dayton, (now in successful operation, with a heavy T rail) and the finished road from Springfield to Sandusky.

Cincinnati to Dayton.....	55 miles.
Dayton to Springfield.....	24 "
Springfield to Sandusky.....	134 "

213 miles.

This route will be five miles shorter than the route by way of the Little Miami road, and the line through the Great Miami valley will have superior grades and curves.

A fourth route from Cincinnati has been proposed, which is also to run through the Great Miami valley, on the eastern side of the river, passing through Miamisburgh and Franklin; making the route to Dayton several miles shorter, and affording railroad accommodation to one of the wealthiest agricultural regions in the Union. The Dayton and Cincinnati railroad company have this in charge, and are about commencing their surveys. At Dayton, this line will connect with the Dayton and Springfield road.

The Bellefontaine and Indiana road will present a very direct and convenient connection between all the roads running from Cincinnati to Springfield, and the Cleveland, Columbus and Cincinnati road, at Galion, 60 miles northeast of Bellefontaine. The Bellefontaine and Indiana road commences at Galion, 79 miles from Cleveland, and runs in a southwesterly course, through Marion, Bellefontaine, Sidney, etc., to the Indiana State line, where it unites with the Indiana railroad running to Indianapolis, Terre Haute, St. Louis, etc. The eastern half of this road, from Galion to Bellefontaine, a distance of 60 miles, will constitute a link in another continuous chain between Cincinnati and Cleveland, though its primary design is to connect the railroads of Indiana with the roads running through Pennsylvania and New York.

It is a remarkable fact, however, that while it offers the shortest and best railroad route between Indianapolis and Galion, it will, at the same time, stand as a link in one of the most direct routes practicable between Cincinnati and Cleveland.—Taking the Dayton and Cincinnati—the Springfield and Dayton—the Mad River road from Springfield to Bellefontaine, and the Cleveland, Columbus and Cincinnati road from Galion to Cleveland

into the connection, the distances may be set down as follows:

Cincinnati to Dayton.....	47 miles.
Dayton to Springfield.....	24 "
Springfield to Bellefontaine.....	32 "
Bellefontaine to Galion.....	60 "
Galion to Cleveland.....	79 "

Cincinnati to Cleveland242 miles, which is 15 miles shorter than the route through Xenia and Columbus.

One hundred and three miles of this chain are already in operation; sixty miles more are under contract, and rapidly progressing; leaving but 47 miles, which is in the hands of the Dayton and Cincinnati company, to be provided for.

Cincinnati seems to have roused up like a giant from his slumber, and put on the "seven league boots" in earnest.

What a splendid position Ohio will hold in a few years, when her great lines of railroad shall bring her two millions of people into close intercommunication with each other?

Ohio.

Mansfield and Sandusky City Railroad.—We have received the 4th annual report of this company, submitted at a meeting of the stockholders held on the 28th of February last, from which we present the following statement of its operations for the year ending Dec. 31, 1850.

The receipts during this period were as follows:

Freight receipts.....	\$78,917 56
Passenger ".....	27,678 06
Mail ".....	2,615 01
Incidental.....	1,580 21
	\$110,790 84

EXPENDITURE.

Machine Shop.....	\$7,876 77
Freight and passenger expenses.....	21,070 74
Repairs of road.....	10,419 77
Fuel and oil.....	1,135 16
Expense account.....	6,593 70
Ware House expenses, drayage, &c.....	2,716 56
Mail expenses.....	94 00
Damage, loss, and accident account.....	850 06
Insurance taxes, &c.....	942 40
	\$51,699 16

Net receipts, from the 1st January to 31st Dec., 1850, on the road from Sandusky City to Mansfield..... **\$59,091 68**

By a reference to tabular statements A. and B., annexed, the list of articles transported over this road are given, and the stockholders' attention is especially directed thereto. Like tables are given for 1849, that a comparison between the two years may be instituted.

The aggregate number of passengers transported during 1850, were..... **31,398**
In 1849..... **24,528**

Increase..... **6,870**

It will not escape attention, that the receipts for 1850 exceed, by 26 per cent., the largest receipts of any year since the road was first opened.

In taking a general review of the business of the road for 1850, it should be borne in mind, that there was a failure of the wheat crop in 1849, and hence the transport of the article in the spring of 1850, was on a diminished scale.

Then, too, as a general proposition, a greater or lesser yield of wheat materially influences the purchase and sale of merchandise, and the general operations of traffic throughout the district in which it is produced;—it indirectly influences to a degree the local passenger business.

During January, February and March, of this year, the business of the road was sensibly lessened from the deficiency of the wheat crop of 1849.

Upon the opening of spring navigation, in March last, a large amount of business pressed upon the

road; the motive power was too limited for its extent; and the road bed was in a state far from satisfactory, and past circumstances rendered it necessary to restrict expenditure as much as possible, with a view to reduce and keep within bounds the floating debt.

Under a combination of these adverse circumstances, by which the ability of the company to operate the road was circumscribed and crippled; the owners of nearly all of the old capital stock were induced to negotiate for its sale, and after three months' investigation into the past history of the concern, and into its future prospects, the purchase and sale was consummated to parties in Ohio, and in the city of New York, whose determination was and is, to make a first class road in every respect, so that by the 1st September, ensuing, it shall be competent to do all the business which may offer, with sound economy and reasonable dispatch. It will not be amiss here to state the condition of the road, simply as it respects the stock and debt issues.

The aggregate of stock issued to individuals, as per detached statement C, hereto annexed, is

17,410 $\frac{1}{2}$ shares, \$50 each, \$870,533 33	
Stock in hands of trustees..	540 " " 27,000 00
Stock not issued.....	49 $\frac{1}{2}$ " " 2,466 67
	18,000 shares.....\$900,000 00

The stock in the hands of the trustees has been sold for cash at par, and is to be delivered to the subscribers as soon as it can be released by the exchange, or payment of the \$27,000 in bonds of the old issue, yet outstanding.

Since the date of the last report, the following old debts of the concern have been paid off or extinguished:

Floating debt, amounting to about.....	\$150,000 00
7 per cent bonds, due in 1855, at Bank of Commerce, New York.....	150,000 00
6 per cent bonds, due in 1855, at Merchants' Bank, in Boston.....	110,000 00
6 per cent warehouse bonds, due at Life and Trust Company, Cincinnati.....	120,000 00
	\$530,000 00
Less: old bonds yet to be surrendered and outstanding.....	27,000 00
	\$503,000 00

The old mortgages on the road bed, &c., to cover portions of the above debt, have been cancelled, except for \$27,000 of the bonds yet outstanding (though expected soon to be surrendered), the old mortgage on the warehouse property at Sandusky, has also been annulled.

A new mortgage has been created for \$730,000, payable on 1st July, 1860, at New York, on "all and singular, the railroad constructed from Sandusky City, on Lake Erie, to Mansfield, Richland county, in the State of Ohio, together with the lands, tracks, lines, rails, bridges, ways, buildings, piers, and wharves, warehouses, erections, fences, walls, fixtures, privileges, franchises, rights, and real estate whatsoever, now owned by said party of the first part, or which shall hereafter be owned by them, and all the tolls, income, issues, and profits to be had from the same, and all the railway depots or stations, with the buildings thereon, together with all the locomotives, tenders, cars, carriages, tools, machinery, and materials, now owned, or hereafter to be owned by said company, or any way belonging or appertaining to said road, and used thereon between Sandusky City & Mansfield aforesaid."

The interest agreed to be paid on said bonds, is 7 per cent per annum, payable in the city of New York by coupons due 1st January, and 1st July of each year, at Mechanics' Bank, New York. A copy of this mortgage is annexed, marked D.

Of these bonds, the sum of \$78,000 are unsold, exclusive of \$27,000 retained for exchange with the holders of the old issue of bonds, as before alluded to.

During the fall, a purchase of 1100 tons heavy T rail was made, and of this about 500 tons, equal to 5 $\frac{1}{2}$ miles, was laid, and at such points on the line

as exhibited the more serious decay. Since December, all but 100 tons has been laid down.

The advantages of greater promptitude both in passenger and freight trains consequent upon this improvement, soon became manifest, giving a foretaste of the advantage to be gained in this and other respects, when the entire line shall have been relaid on the 1st September ensuing; the economy of the heavy rail in expenses will be considerable.

By a reference to the annexed memorandum, marked E, a description is given of the property of the company, exclusive of the 55 miles of road bed from Sandusky City to Mansfield, and 1 $\frac{1}{2}$ miles additional of turnouts; in this connection it is desirable to allude to pending contracts for new locomotive, passenger and freight cars, that stockholders may realize the extent of contemplated improvements; the increased motive power as the same has been ordered, will appear by reference to the annexed schedule, marked E.

A contract has been made for 3500 tons of rails (the estimated weight required to complete the road) on favorable terms, and the delivery is expected to be made in early spring, so as to ensure the completion of the work not later than 1st September ensuing.

Whilst the iron is being laid, the ability to transport passengers alike with merchandise must of necessity be lessened, but every effort will be made to accommodate the public so far as is practicable, having steadily in view a completion of the work on the 1st September next.

To stockholders who have never been on this line of road, the character, extent, and size of the warehouses as mentioned in the annexed memorandum, are deserving attention, especially the wheat warehouse, competent to contain 320,000 bushels of wheat, and 20,000 barrels; the merchandise warehouse capable of stowing 20,000 barrels.

These fine buildings are at Sandusky, and combined with them are extensive and complete facilities in wharves, so that vessels of the largest capacity may load and unload at the wharves, and from or into these extensive warehouses, at the least expense, and best economy of time.

These necessary buildings have been erected with reference to permanency, and at great expense; those at Sandusky cost [wharf property included] over \$110,000, and in considering the aggregate cost of the work, as represented by stock and bonds, the cost of these and other buildings on the line will be borne in mind.

The resources upon which the company rely to complete the proposed improvements, may be briefly stated, and are deemed ample to complete and perfect the work.

Cash in Treasurer's hands.....	\$2,873 05
\$85,500 bonds sold [a portion of the \$730,000 issued], taken in payment for rails at par.....	85,500 00
\$78,000 bonds yet to be sold, being the balance of the \$730,000 yet unsold, and to be issued after retaining \$27,000 of these bonds, to exchange with old bondholders, who hold a like amount of them, valued at 90 to 95 per cent, say 90 per cent.....	70,200 00
1100 shares stock sold at par, or \$50 per share, payable 15th April, and 15th May, 1851; this stock is embraced in issue above named.....	55,000 00
\$62,840 certificate debt due in 2, 3, 4, and 5 years; bearing 7 per cent per annum, taken at par, payable in cash 15th April and 15th May, gives.....	62,840 00
On demand taken for bonds sold.....	46,058 02
Cash in hand, Ketchum, Rogers & Bement.....	7,001 12
Estimated value of old flat rails to be taken up and re-sold, say 1960 tons of 2240 pounds value, \$30 to \$40 per ton, say \$30, gives.....	59,400 00
Cash assets.....	\$388,672 19

In making the estimate of cash assets, it has been thought best to exclude the probable net earnings of the road for 1851; this sum would

meet any unforeseen contingencies, though the assets above named, are regarded as ample to finish and stock the road.

The intention of the directors is to divide the net earnings for 1851 among stockholders, but it is deemed the true policy to abstain from any division, until the fall or winter ensuing, at which former period the work will be complete, and the aggregate expenditures precisely known.

The new road from Mansfield to Newark, a distance of 60 miles, and which is virtually an extension of the Mansfield and Sandusky City railroad, that distance, towards Portsmouth, on the Ohio river, was so far finished, as to permit the passage of cars over the whole line on the 6th January, but many of the fixtures, &c., which are necessary to its operation, remain to be finished—such as side tracks, turn tables, depot buildings, wood houses, &c., and the rails will require adjustment and levelling during the spring. The managers having that work in charge, expect to place the line in good condition, and as soon as the weather admits, and when done, the Columbus and Lake Erie road may be regarded as among the most substantial works of its kind.

The stockholders are aware that under date of June 1, 1849, the Mansfield and Sandusky City railroad company leased the Columbus and Lake Erie railroad, agreeing to pay 8 per cent upon the "cost" of said railway, said rental payable 1st May and 1st November annually.

It is to be regretted that the cost of the railway under this lease, has not been agreed on as between the two corporations, the President and directors of the Columbus and Lake Erie railroad company, having been much engrossed with matters incident to the opening of the road.

It is to be hoped, however, as the first May (the period for the first payment of rental) is fast approaching, that the cost of said railway may be agreed on between the "two Presidents," as provided in the lease above referred to.

The new line to Newark being completed, (see map prefixed) the road is virtually extended from 56 to 116 miles. Our motive and car power is exclusively used over both roads; a large proportionate increase of passenger and freight receipts can be confidently expected. The southern terminus at Newark is near the geographical centre of the State, and will present an easy, cheap and expeditious route, by way of Lake Erie, to the great commercial cities on the Atlantic coast, and also to Michigan, Wisconsin, Northern Indiana and Illinois.

Through this new channel will pass the greater part of the travel from the populous and extensive region of country lying between Newark and Portsmouth on the Ohio river, comprising the rich valley of the Scioto and Hocking, and the flourishing towns of Lancaster, Circleville, Chillicothe, and Portsmouth. The same remark may be justly made with reference to the country lying southeast from Newark, including Zanesville, and the valley of the Muskingum, together with the region bordering on Virginia, in the direction of Wheeling. This road will afford for the first time an outlet to Lake Erie, and then both east and west, for much of the travel between its southern termination at Newark and the points above stated. It is well known that the travel has heretofore chiefly passed to the Atlantic cities over the mountains to Cumberland by the National road, it having been heretofore almost entirely isolated from the northern portion of Ohio bordering on Lake Erie.

But when the lines of railroad which are now in the progress of construction, shall be completed from Portsmouth to Newark on the south, and Wheeling, by the way of Zanesville, on the east, it would now, perhaps, be difficult to estimate the great addition, both to the amount of freight and passengers, which may be reasonably expected to pass over the main line between Newark and Sandusky.

The Ohio Central railroad commences at Wheeling, and passes through Zanesville and Newark to Columbus, the capital of Ohio. That part of the road between Newark and Zanesville is in the rapid process of construction, and it is quite certain that cars will pass over this division of the line during the coming season. Wheeling has lately made a large subscription to the stock, and the in-

dications are strongly in favor of an energetic and rapid completion of the whole road.

In addition to this, a Company has been organized for the construction of the road, from Portsmouth to Newark, and a part of the work from Portsmouth, northerly, has already been placed under contract. It is well understood, that a region exists north of Portsmouth, to and from which, the proposed road will afford easy access, which contains the richest deposits, both of coal and iron ore, to be found between the Alleghany Mountains and the Mississippi river; this district of country, so abounding in these invaluable resources, has been heretofore entirely shut out from any facilities of transport, by its interior position and distance from either navigable waters or railroads. When this new road, which is so laid out as to pass directly through this mineral region, shall be completed to Newark, it would be conjectured to attempt an estimate of the large increase of business, which our road will derive from this source alone. The supply of coal, if no other articles of transport were furnished, for the district of country in Ohio, between Newark and Lake Erie, and the extensive region bordering on our western Lakes, would seem to be almost in itself sufficient, to keep the road fully and successfully employed. But when it is understood that a large portion of the country, between Newark and Portsmouth, also abounds in agricultural resources of the most diversified character, it is not difficult to foresee with great certainty, the heavy addition which this connection is to afford to the business and profits of this road.

It must, however, be a matter of gratification to the parties having investments in the stock, to understand that it cannot be necessary to depend upon a connection with either of the contemplated roads, for its business or profits. If no such connection should ever be made, no doubt can exist, that the country through which this road passes between Newark and Sandusky, would afford in itself, full and profitable employment for a single line, without any reference to the business arising beyond its limits.

Perhaps no better or more convincing evidence can be given of this statement, than the well known fact, that for the greater part of the distance, and for miles on each side of the track, the country is almost a continuous line of the most fertile wheat and corn land to be found in Ohio, abounding in hydraulic power and large numbers of flouring mills, and so highly cultivated, that almost every acre affords some product, which requires and will bear transportation to market by Railroad.

In the early part of November last, the Cleveland, Columbus and Cincinnati Railroad, completed their track from Cleveland to Shelby, at which latter point it crosses the line of this road, being about 44 miles south of Sandusky; so far as the short time which has elapsed since the connection can enable the formation of an accurate opinion, the two roads are so situated as to promote the common interests of each, by affording increased facilities, both for passengers and freight, and to and from the respective ports of Sandusky and Cleveland, and enabling those having business to transact, to select such route as may best comport with their interest or convenience. So far as the practical operation of this crossing of the line of our road by the Company before named, now appears, it has been in our judgement productive of beneficial results to both Companies, and it is hoped that nothing may occur to disturb the harmonious relations which have so far existed between the respective parties in charge.

In calling attention to these general features, the Directors would ask of stockholders, an investigation into the tabular statement, marked F, showing the population and products of the several counties tributary to the line.

From these, an approximate estimate may be formed of the earnings that await us, when once the new road bed is laid, and we have at command and in use, ample and necessary motive and car power.

The Directors, in seeking for some other and more reliable data, for estimating the probable earnings of the entire line, have found a parallel from the earnings of the Mad River and Lake Erie railroad, and to their minds, it leads to a most satisfactory conclusion as to future earnings,

and, therefore, they present it for consideration.

The country from which the Mad River* railroad extracts its business, is less populated and cultivated than that on the line of road to Newark from Sandusky; this being admitted, it follows that the revenue from local business will be larger; for the purposes of comparison, we propose with each road to throw out all *through* business, that is to say, all passengers and freight passing over from the extreme points on each of the two roads.

The Mad River Road is 135 miles long, and for the year ending 30th June, 1850, the receipts from

Way and local freights, were.....	\$130,000
Local passengers.....	100,000
Mail earnings.....	8,000
From cholera, passenger receipts are supposed to have been lessened 10 per cent.	10,000
From short crop of wheat, freight receipts estimated to have been diminished 40 per cent.....	52,000

\$300,000

The estimates on Mad River and Lake Erie railroad, from local receipts for year ending 30th June, 1851, are estimated at above that sum.

The entire length of Mansfield line, is...117 miles

Deduct 30 miles to Paris, which is a country like the first 30 miles on Mad River road.....

30 "

87 "

Add 50 per cent. for superior culture and additional population.....

130 "

Same as 135 miles Mad River company estimated to earn.....

\$300,000

30 miles to Paris, will earn same as first 30 miles Mad River company.....

50,000

\$350,000

Estimated expense of operating and working the road, 40 per cent.....

140,000

Net earnings.....

\$210,000

\$730,000 bonded debt, due in 1860, bearing interest at 7 per cent.

per ann.....

\$51,000

Columbus and Lake Erie company estimated cost when finished;

\$700,000 to \$800,000; say \$800,000, at 8 per cent. per annum;

leased at 8 per cent. per annum, the rental payable under lease..

64,000

\$115,000

Net revenue, equal to 10½ per cent. on \$900,000 issue of stock.....

95,000

It will be borne in mind, that this estimate excludes the *through* business, which must be large and annually increasing, whatever it may be, will add to gross receipts. The expenditure in operat-

*As bearing upon the general prospects of railroads in Ohio, the following extract is taken from a letter dated Boston, July 20th, 1850, from D. A. Neal, to Dan. S. Miller, of New York, written in regard to the Mad River railroad.

"Up to this time, not only has the mass of travel between the East and West been restricted very much to one or two routes, but in proportion to the local business been much larger than it is likely to be hereafter. In other words, the domestic travel of the Western States is more rapidly increasing, than that between them and the Atlantic. Both immigration and natural increase are filling in, around every avenue which facilitates transportation. Wherever there is good soil, a railroad or canal will find support. Hence the security of western railroads, and their increase in number and extent. They will divide, and perhaps render of little worth what is technically called *through* business, but they will give an impulse to the industry and enterprise of the community, and present so many attractions to the settler, that they will secure to themselves a local traffic that will amply repay them for the loss of the other."

ing will not be increased, as it is believed that in Ohio, a first class heavy railroad can be operated at 40 per cent. on gross earnings.

The Board of Directors, in concluding their report, express their conviction, that the earnings of the 60 miles of leased road, from Mansfield to Newark, promise a yield that shall more than cover the 8 per cent. per annum, agreed to be paid on its *bona fide* cost; this formed a matter of mature investigation when the parties now in interest purchased the stock, and the conclusion was arrived at after examination into the local population and products tributary to the Columbus and Lake Erie road.

Of the road proper, from Sandusky City to Mansfield, the past earnings of the company as shown in this report, afford an opportunity to approximate towards a definite guide, so far as relates to its local business; the sum of \$59,091 68, net earnings, has been secured under every disadvantage, viz: want of locomotive power and freight car power, beside a road bed badly run down and covered with a flat and partially worn-out rail.

The Board of Directors hesitate not to express the opinion, that with sufficient locomotive power alone, the gross earnings of the Mansfield and Sandusky railroad, for the past year, would have been increased 30 per cent. at least, or say \$33,000 for the entire year, even with the road in its present condition.

How far a substantial road and a heavy rail will serve to increase business and diminish expenses, remains to be proved, as also the effect of opening upon the road proper, 60 miles of additional freight and passenger business, which it has never yet enjoyed; the bulk of the freight business on the Columbus and Erie Road, necessarily must seek an outlet for produce, through Lake Erie and over the whole 56½ miles of the Mansfield and Sandusky City railroad.*

Reverting to the financial affairs of this company, it will be seen that the 56 miles of railroad, from Sandusky City to Mansfield, inclusive of its large warehouse and wharf properties, its 60 lb. rail, its motive and car power, on a scale to transact not only its own business, but that of the leased road, will be represented as follows:

Stock as per details given.....	\$900,000
Debt: 1st mortgage bonds due in 1860.....	\$730,000
Certificate debt, due in 1853 to 1856.....	62,840
	<hr/> 792,840

Total of stock and debt.....\$1,692,840

Which will represent the entire work, finished and complete.

Note.—A delay in printing, enables the returns of March, 1851, as compared with 1850, to be added; they are as follows:

March.....	1850.	1851.
Freight.....	\$2,199 83	\$12,131 15
Passengers.....	1,949 42	4,776 25
Mail.....	217 91	442 91
	<hr/> \$4,367 16	<hr/> \$17,350 31

Thus the gross receipts for January, February and March, 1851, were.....\$9,592 22
Same months, 1850, were.....36,738 64

Increased receipts.....\$27,146 42

The Depots, Machine Shops, Warehouses and other buildings owned by the Company at this time, are as follows:

At Sandusky.—A large stone block, presenting a front of about 210 feet, in which is contained the treasurer's and superintendent's offices, two passenger rooms, passenger car depot, stalls for five

*As a slight index of its effects, the earnings for January and February, 1851, as compared with 1850, are submitted.

Jan., 1850....	\$2,446 07	Jan., 1851....	\$8,900 51
Feb., 1850....	2,343 17	Feb., 1851....	10,384 49

Gross receipts \$4,789 24 \$19,285 00

The circumstances under which the upper road has been opened should be kept in view.

locomotives, machine, car and blacksmith's shops.

These various divisions are in good condition and sufficiently commodious, although additional engine and car depots have become indispensable by reason of the great present and prospective increase of the motive power of the road.

The machine shop contains all the necessary tools and apparatus for the repairs of engines and cars, and the other machinery of the road.

It has one large lathe for turning locomotive driving wheels, one lathe for turning rail-road axles, one small slide lathe, one small iron planing machine, two machines for cutting bolts, one small press drill, one press for pressing wheels into axles, five vices, one small hand lathe, and one lathe for turning patterns.

The car shop has two circular saws, one circular planing machine, one Woodward do., one upright saw for cutting tenons.

All the above machinery is operated by a steam engine, of 10 in. bore and 20 inch stroke, and a boiler, having 11-6 inch flues and 16 feet long.

Blacksmith's shop has ten fires, nine of which are in daily operation.

Also, one merchandise warehouse, 250 feet long by 60 wide; capacity, 20,000 barrels rolling freight. This warehouse is placed on a durable dock, filled in with stone and faced with heavy oak timber, and extending into the deep waters of the bay 200 feet.

One wheat warehouse, 300 feet long, 60 feet wide, 3½ stories high in the centre; with two trucks, eight elevators and two lines of conveyance, operated by a first-rate steam engine; will store 320,000 bushels of wheat and 20,000 barrels of rolling freight. This building is also placed on a substantial dock or wharf, 350 feet in length, and having the necessary wharfage accommodation for steamboats and other vessels.

During the present winter extensive additions have been made to the docks of the Company, by sinking cribs and filling them with stone in such a way as to afford almost double of the former wharfage space.

One small transportation office, standing apart from the other buildings, and which is chiefly occupied by the freight agent at Sandusky and his assistants.

In addition to these buildings, measures are in progress to erect during the coming spring, a substantial stone edifice, of about 400 feet in length, in which will be contained the necessary space for passenger cars, for the various offices of the Company, and rooms for passengers, baggage, &c. When this is completed, the present buildings, as far as practicable, will be converted into an engine house.

At the Slate Run Station, the Company own a substantial boarding house for the workmen on the road, and a large and convenient woodhouse, 100 feet in length; also at Havana, Paris, Shelby and Spring Mill, woodhouses varying from 50 to 110 feet long.

At Centreville, Paris and Spring Mill are durable and well-finished boarding-houses. The Company also own, at the Paris station, two warehouses: one of which is a large building placed over the track, and specially designed for the storage of wheat; capacity, about 120,000 bushels.

At Mansfield.—A large brick depot, in which is situated the necessary offices, passenger rooms, platforms, &c., on one side of the track, running through the building, and on the other a spacious warehouse for rolling freight. Also a brick engine house, containing four stalls; and a blacksmith's shop under the same roof.

The Company also owns a valuable tract of wood land 447 acres, about 26 miles from Sandusky, and through which the track passes. The timber on this land is not only rapidly increasing in value, but is of great present convenience in being able, in some degree, to control the prices of fuel and timber on the line, by the facility with which it can be procured, if necessary, from that source.

During the last fall, two first class passenger cars, one second do., and two baggage and post-office cars have been purchased, and are in daily use, making in all 5 passenger cars now owned by the company.

In addition to these, a contract has been made for the delivery of six additional first-class passen-

ger cars and three baggage cars, all to be completed and delivered from time to time till the 15th of June next.

The company now own nine locomotives, all in good condition for business; one of these is a small engine, chiefly employed in transporting timber for repairs, sawing wood, &c. In addition to these, contracts have been made with Messrs. Rogers, Ketchum & Grosvenor, of New Jersey, for seven first-class engines, to be delivered at short intervals from the opening of navigation till the 1st of September next.

The number of freight cars on hand at the time of the new organization in September last, was as follows: 70 four-wheeled wheat cars, 46 four-wheeled cars for ordinary freight, and 19 eight-wheeled platform and box cars. Since the 15th of September last, the company has made in its own shops 12 eight-wheeled box cars, and is now turning out without difficulty, eight cars per month, having put up an extensive stone addition during the fall, to their car and blacksmith's shops.

A contract has also been made for 25 eight-wheeled box cars, to be delivered at the rate of 10 per month, and materials are now provided and on hand in our own yard for making a large number of additional cars during the next season, besides those above stated. Of the old cars on hand, six are worn out and useless, and twenty-three will require repairs. This will leave the perfect number at one hundred and forty-one.

Measures have also been taken and contracts are being performed for the delivery of the cross ties and other timber which will be required for laying the new rail, and no reasonable doubt can exist that all these materials will be distributed on the line of the road as fast as the iron rails can be delivered.

England's Light Locomotives.

Several months ago we introduced to the notice of our readers a new light locomotive by Mr. England, of Hacham, near Peckham, which we had been invited to see. Our opinion was favorable to the principle, but we wanted experimental facts.—These we have now before us in the following account of her performances transmitted to us in consequence of our notice. We have likewise a report by Mr. Adie, the engineer of the Edinburgh and Glasgow railway, in a tabular form, confirming the speed, carriages taken, and small amount of fuel consumed. Our object in recurring to this subject is to show that our opinion of this engine was well founded, and the value of our oft-repeated recommendations on the economy of light engines, when properly constructed, instead of the lumbering giants lately become fashionable.

On the 3d of August last one was forwarded to the Edinburgh and Glasgow railway, under a guarantee that she was to work their express trains between Edinburgh and Glasgow, consisting of seven carriages, to keep good time as per time bill, and not to consume more than 10 lbs. of coke per mile; if she did that to the satisfaction of Mr. Adie, the company's engineer, they should purchase her for £1,200. But if the work done, or the consumption of coke, was not satisfactory, and within the guarantee, Mr. England was to remove her, and take her back entirely at his own expense.

After the engine got to work, in order to test her powers accurately, Mr. Adie appointed Mr. Cross, one of his assistants, to accompany her for several days, to see the coke weighed, and to see that the time was properly kept. He also placed one of the best engines belonging to the company, called the "Sirious," to run from the opposite end at the same hours, and with a similar train, in order to compare one with the other.

"They worked a week; the "Sirious" starting the morning trip from Edinburgh, and the "Little England" from Edinburgh, thus making a fair division of the work; and the result proved that the small engine kept better time than the large one, so much so that the Manager, Mr. Thompson, was obliged to order the driver not to run it before time for fear of an accident; her consumption of coke was 8 lb. 3 oz. per mile, while that of the "Sirious" was 29 lb. 1 oz. per mile.

"The "Little England" would frequently run a mile in 60 seconds, and sometimes less. She started with less slipping, and could be brought to

a stand in much less distance than the large engine.

"The engine was afterwards tried upon the Campsie Junction line, where there is an incline of 1 in 75 for three miles, and a station upon it.—She took up seven carriages and a large luggage-van crowded with passengers, and as she had to stop at the station upon the incline, Mr. Paton, the Locomotive Superintendent, who accompanied her, ordered a large coupled engine to follow to assist her away from the station if necessary, but she went away with the train at the rate of 30 miles an hour, and the heavy engine could not catch her; for the result proved that the heavy engine could not ascend the incline alone at the rate of 30 miles an hour.

"When the engine got to the top of the incline, where another branch line comes in and joins the main line, she took on 6 more carriages, making in all 14, and took them into Glasgow in good style, surprising every one who witnessed it.

"She is now running the express trains between Edinburgh and Glasgow, consisting of five carriages, with a consumption of only 6½ lbs of coke per mile. During the heavy gales and bad weather which prevailed in the early part of January, she was the only engine upon the line that kept time.

"On the 7th of September Mr. England sent another similar engine to the Liverpool and Southport line, where she took a train of 10 carriages up an incline 1 in 100, stopping and starting upon it, and where there is also a sharp curve. She was delivered subject to a guarantee that she was to run a train of seven carriages at the rate of 45 miles per hour, with a consumption of coke not exceeding 10 lbs. of coke per mile.

"She proved herself more than equal to the guarantee, and the directors paid for her when she had been at work a week, considering that she was more than equal to the contract.

"There is one at work upon the Dundee and Perth line which has been working there since June, 1849, and the Locomotive Superintendent declares that she has not cost them sixpence in the shape of repairs during that time; that she is always ready, and runs the mail train of four carriages between Dundee and Perth daily."

We hope this account is sufficient to justify us in again reverting to our notice, and in calling especial attention to a subject so important as good light engines in economical management.—*Herald's Journal.*

Tolls in New York—New York Canals.

The following is a condensed statement of the rates of toll established by the Canal Board, on persons and property, to take effect on the opening of navigation in 1851:

On salt manufactured in this State, Gypsum, the product of this State, brick, sand, lime, clay, earth, manure, iron ore, stone for the manufacture of lime, oak, hickory, beech, black walnut, staves, heading, empty barrels, casks, hemp and unmanufactured tobacco, pressed hay, potatoes and other esculents per 1,000 lbs. per mile, 1 mill.

On spruce, maple, ash and elm, 1 mill, 2 frac.

On cherry, 1 mill, 4 frac.

On hemlock, 6 frac.

On leached ashes, bones for manure, mineral coal and charcoal, bar and pig lead going towards tide-water, and copper ore, and all persons over ten years of age, 5 frac.

On butter, tallow, beer, cider, vinegar, salted fish, fish in brine, pot and pearl ashes, window glass, kelp, soda ash, stoves, cast iron car wheels, water pipes, gas pipes, bed plates for steam engines, plough castings and all other iron castings, except machines and the parts thereof, coppers, manganese, sheep skins, tile for roofing and stone ware, timber squared and round, shingles if carried on rafts, wool, rags and junk, manilla, unmanufactured tobacco, all agricultural productions of the United States not particularly specified, sugar, molasses, coffee, iron in bars and bundles, nail rods, boiler iron, nails and spikes, mineral water, oysters and clams, dye woods in sticks, threshing mowing and reaping machines, fanning mills, ploughs, harrows and dull harrows, and on all articles not enumerated, 4 mills.

On salted pork, bacon, lard, flour, salted beef, cheese and lard, oil, foreign gypsum, bloom iron

going towards tide-water, broken castings, scrap and pig iron, green hides of domestic animals, &c., accompanied by and belonging to emigrants, domestic distilled spirits, wheat and barley, 3 mills.

On bran, ship-stuff, oil cake or oil meal, slate, stone wrought or partly wrought, drain tile, sawed lath, split lath, hoop poles, hand spikes, rowing oars, broom handles, spokes, hubs, tree nails, felloes, boat knees, plane stocks, pickets for fences, hop poles, ship knees, &c., brush handles, brush backs, looking-glass backs, gun stocks, plough beams and plough handles, cotton, live cattle, sheep, hogs, hoofs, horns and bones, pressed broom corn, corn, corn meal and oats, railroad iron, 2 mills.

On foreign salt, deer, buffalo and moose skins, imported raw hides, boards, plank, scantling and sawed timber reduced to one inch measure, all kinds of red cedar, cedar posts, &c., staves and heading on rafts, wood for fuel, tan bark, sawed stuff for window blinds, iron in sheets, steel, horse shoes, crockery and glass ware, tin sheets in boxes, 5 mills.

On stove pipe and furniture for stoves, not cast iron, other merchandise, barytes, veneering, 8 mills.

On furs and skins of animals producing furs, timber if carried in rafts, (except dock stocks, round dock sticks,) 1 cent.

On unwrought stone, mahogany reduced to inch measure, 1 cent 5 mills.

On timber, if cleared between the 15th June and 15th August inclusive, 7 mills.

On pine, white wood, bass wood and cedar, 1 mill 8 frac.

On hemlock, when not weighed, 2 mills, 5 frac.

On shingles, if carried in boats, 1 mill 8 frac.

On split posts in boats, tan bark in rafts, boats used chiefly for the transportation of property, 2 cents.

On split posts if conveyed in rafts, 8 cents.

On boats used chiefly for the transportation of persons navigating the canals, 4 cents.

On the same if they elect to commute for tolls upon passengers, 3 cents.

On boats that transport property, if they elect to commute for passengers, 2 cents 3 mills.

Baltimore and Ohio Railroad.

The following communication from Mr. Latrobe, the chief engineer of the Baltimore and Ohio Railroad, was submitted to the First Branch of the City Council on Thursday, in answer to a resolution of inquiry as to the probable time of the completion of this great work:

ENGINEERS OFFICE B. & O. R. R. }

Baltimore, April 7. }

J. J. TURNER, Esq.,

Director on the part of the city, &c.

SIR:—I have the honor to acknowledge the receipt of your note of the 22d of March, with the following resolution of the First Branch of the City Council, passed on the 17th of the same month: "Resolved, that the directors on the part of the city of Baltimore in the Baltimore and Ohio railroad company be requested at their very earliest convenience, to report to this branch at what time, in their opinion, said road will be completed to the Ohio river at Wheeling, said report to be accompanied with such practical data as will show the correctness of the conclusions to which they may arrive."

I have just returned from passing over the whole line of the road between Cumberland and Wheeling, which will enable me to answer the enquiry of the resolution more satisfactorily, while it will account for the delay in my reply.

When the road west of Cumberland was commenced in May, 1849, its completion to Wheeling in June 1852, was promised, with the understanding that there would be no check from want of men or money. This promise could have been kept but for the necessary change of route near the western terminus, which will have been the cause of several months delay. It is now expected that the road will be opened to Wheeling December, 1852.

The reasons for expecting this result are derived from the general state and progress of the work in

its several parts upon the several sections of the line, which are briefly noticed as follows:

There have been five successive lettings upon the line—the first in April, 1849, and the last in December, 1850—by which different divisions have been, from time to time, put under contract as they could be made ready, and as the character of the work upon them required—and now the whole route of 200 miles is in progress of construction. For the first 12 mos. there was a surplus of labor upon the line, but since then there has been a scarcity, which has made constant efforts necessary to keep up a supply; but for this, the "graduation and masonry" would have been in a more generally forward state. The sections, however, on which the completion of the road depends, have been kept nearly all the time well furnished with hands, so that there will not have been much delay experienced by the deficiency of labor upon the lighter work. The chief inconvenience respecting the latter will be that some of it will have been finished more hurriedly than could have been desired. This remark, however, applies to parts of the graduation only, (such as some of the earth embankments) and not to the masonry of other mechanical work, which will have been built with all the care necessary to its permanence and complete finish.

Notwithstanding these difficulties, the plan proposed for the conduct of the work in its several departments, has not been, thus far, materially departed from. At the beginning of the work in 1849, its opening last fall to the Piedmont station, near the mouth of Savage river, 30 miles from Cumberland, was contemplated; but the unavoidable delays attendant upon the adjustment of the location in conjunction with that of the canal extension to the same point, together with the sickness prevailing in the Potomac badly during the autumn of 1849 and 1850, made that impracticable, and the idea was abandoned, the more readily as nothing of importance would have been gained by its accomplishment. The commencement of the laying of the rails west of Cumberland was therefore postponed until the present spring, and is now steadily advancing, upwards of 6 miles being now passed over by the locomotives with their trains carrying the iron materials of the track. As the whole line to Wheeling is to be pushed forward in this way, by transporting the iron over the new road as fast as it is finished; it will give the clearest and readiest idea of the progress and time of completion of the whole line to Jay, that no delay in the progress of the track from this time forth is anticipated, and that the laying of it will advance at an average rate of about 10 miles per month.

This counting from the 1st of April inst., would lay the whole 200 miles from Cumberland to Wheeling in 20 months from that date, or by the 1st of December, 1852—and the opening of the line to Wheeling cannot be delayed beyond that month, if there be no failure in the supply of labor and of means to pay for it. These are the only contingencies, and, so far as they are under the control of the company, they will not stand in the way.

I am not expected to speak of the financial part of the subject. In regard to the labor, I can say that every proper effort shall be made, and that I think the worst is past. We have now about 4,500 men and 600 horses upon the whole line—making about 22 men and 4 horses per mile. This force would be very inadequate to finish the 200 miles by the end of 1851, where the workmen only now begun; but it is so far advanced that a concentration of labor upon the heavier jobs midway and near the west end, will soon begin to take place, and their progress will thus be accelerated.

In speaking of such of these as are known to the Board and to the community here, as remarkable for magnitude, I will state—(each section being about a mile long, and its number, therefore, showing its distance from Cumberland,)—that

The tunnel on section 32, and the very deep cut on section 38, will be finished in July.

The summit cut on section 45 will be passable in August.

The tunnels on sections 65 and 68 will be finished in June.

The remaining very heavy sections east of Cheat river, may be passed in September.

The very high bridge wall on section 77, will be in a condition to support the track by October,

although not fully completed for some months after.

The other heavy sections thence to the Kingwood tunnel on the 82d section, will be ready for at least one of rails in the same month of October.

The great tunnel, just named, of 4,100 feet in length, will be finished in December next.

The high embankment on the 83d section will be made ready to carry the track by the same time.

Beyond this point, (83 miles from Cumberland,) the work is comparatively light, until we reach the heavy work let in December last, from sec. 161 to sec. 193, upon the new line substituted for that preferred by the company, and used as the basis of their original estimate of the time of opening the road to Wheeling. But from this work no delay in the advance of the track so as to accomplish that final result in all December 1852, is apprehended.

It fortunately happens that on this long line of 200 miles, there are but six viaducts of large size. The first of them at Cumberland, is finished—the second, over the Potomac, on the 21st section, will be completed in May, and the third, over the same river, on the 30th section, in July. The fourth, over the Yonhiaghenny river, on the 55th section, in August—the fifth, on the 75th section, across Cheap river, in Sept., and the sixth, over the Monongahela river, near Fairmount, on the 123d section, some time next winter. All the minor bridges and culverts with their superstructures, will be completed in time.

The water stations will be ready as fast as needed, and the depot buildings, engine houses, and shops also.

The materials for the track will all be furnished in good time.

Of the 21,000 tons of rails required, nearly 19,000 have been delivered at Locust Point, and the remainder will be before the end of the present year.

The advance of the track will carry it to—Piedmont station, 26 miles from Cumberland, by July 4, 1851.

Cheat river, 75 miles from Cumberland, by Nov. 1, 1851.

Tygart's Valley Bridge, 103 miles from Cumberland, by Feb. 1, 1852.

Fairmount, 123 miles from Cumberland, by April 1, 1852.

Wheeling, 200 miles from Cumberland, by Jan. 1, 1853.

In the confident hope that these results may be realized, I have the honor to be, sir,

Most respectfully, your obedient servant,
BENJ. H. LATROBE,
Chief Engineer.

English Railroads.

The gross receipts of railway traffic in Great Britain, for the week ending March 21st, amounted to £229,128 on 6,240 miles, which gives an average of £36 14s. 4½d. per mile. The receipts for the corresponding period of last year amounted to £213,318 on 5,641 miles, being an average of £37 16s. 3½d. per mile. For the ten weeks just expired the gross receipts this year have been £2,218,826, being an average of £355 11s. 7½d. per mile, against £1,973,399, or at the rate of £340 16s. 7½d. per mile.

Pneumatic Pile Driving.

The select Committee of the House of Commons, having under consideration the subject of the proposed construction of the Westminster bridge at London, elicited some highly important information relative to sub-aquatic foundations, by the examination of distinguished engineers and contractors, who have extensively used Potts' patent process for sinking piles or coffer dams. We copy below a portion of the testimony referred to, which being the evidence of results obtained, will especially interest all members of the profession who have had occasion to construct river piers or abutments. The system of foundation so particu-

larly described, commends itself for adoption by considerations of great economy of money and time, and by the security which is afforded, when contrasted with the arrangement of coffer dams as hitherto constructed. There is every reason to anticipate an extensive use of this system of foundation, for permanent wharves and warehouses on the North and East Rivers, of this city, in place of the wretched accommodations now afforded for commerce.

Minutes of Evidence taken before the Select Committee of the House of Commons on the Westminster Bridge (July 9, 1850.)

W. Cubitt, Esq., C. E., M. P., (President of the Institution of Civil Engineers.) examined.—What dimensions of cylinders are you now using at the Rochester Bridge?—The cylinders are 7 feet in diameter, and in this case I should probably put down cylinders of 10 feet in diameter, so as to make the diameter of one cylinder from the width of one pier, so that a row of these very large cylinders sunk to 10, 20, 30, or 40 feet, would make a most durable and excellent foundation, and require no coffer-damming at all.

Will you explain the mode of operation by which you drive down, or procure such enormous pressure as to force those large caissons or piles into the earth?—The piles would be in this case, I should say, probably 10 feet in diameter, consisting of hard thick metal hollow cylinders, the bottom edges being quite sharp, and they are in lengths of 9 or 10 feet, turned up upon the lathe so as to go together perfectly air and water-tight, and bolted together one upon another as they go down. The mode of driving them is to have a tight cap of the same diameter on the top of the cylinder similar to the top of a steam-engine cylinder, and when the cylinder is fixed, to drive it through the water and through the guides to the bottom perfectly perpendicular. The air is exhausted from the inside of the cylinder entirely, and the pressure of the air as you let on the pressure of the atmosphere drives it down. The pressure of the atmosphere upon a 10 feet cylinder would be equal to a column of water about 25 feet high, which is a great many tons.

You fill in those cylinders with masonry, do you not?—Yes, with solid brick-work.

Can you conceive any more secure mode of laying a foundation than this plan presents?—I do not know a better. It is exceedingly good, as we have the means of driving them down; and we can do it by two methods, both of which my son has used, both at Huntingdon and at Peterborough. The Huntingdon Bridge is built upon round piles; circular cylinders, one row forming a foundation in the river for one pier, and another row forming a foundation for another pier, making two piers, and the bridge is at work as a railway bridge. At Peterborough they are now completing another bridge in a more difficult situation, and not so good a foundation as the Huntingdon one, and my son proposed; instead of putting down circular cylinders, which did not fill up the whole space of the pier, to make square cylinders, 6 feet square, and drive them close together, so that they have a large 6-feet cylinder sent down to the bottom, filled with brickwork, which makes a solid brick pier, encased in cast iron.

Will you state to the Committee what saving you suppose you effect at Rochester Bridge by this mode of construction over the old mode of coffer-damming?—I have a contract going on for making two piers and two abutments, for as small, indeed I think a smaller, amount of money than it would cost to make coffer-dams in the same place.

In what proportion is the amount less?—Perhaps £2,000 or £3,000 less; the whole contract for the foundations and filling them up will not exceed £25,000 in that large and deep river; coffer-dams for the same work would have cost a great deal more than that.

When you say £3,000 or £4,000 more, do you mean for each?—The coffer-dams for the work to build the bridge in the usual way would have cost several thousands more than the whole work costs according to this plan.

Mr. Peto. Do you mean that the cost of the abutments and piers, completely and perfectly exe-

cuted, will be less at Rochester Bridge by £3,000 in the aggregate than the coffer-dams would have cost?—Yes; and I think a larger sum than that difference in a tideway like that, where the old bridge formerly stood. Driving coffer-dams is a very difficult business, without reckoning the constant expense of pumping them out for months or years during the execution of the work. And what I would strongly press upon the attention of the Committee is, that the two bridges, the one at Huntingdon, over the Ouse, which is finished and at work, and the other at Peterborough, and immediately going to work, over the Nene, are both built; and the last one, at Peterborough, was built under very difficult circumstances, for when they were driving the first, after having bored the ground, they found it pretty well under the first square tube for the foundations, and they worked till they could go no further; it was not deep enough by several feet; they then pumped out the water and excavated the earth from the inside, and they went down and examined, and they found a stone-floor at the bottom of hard rock, which was some three feet and upwards in thickness. Now there the making of a coffer-dam would have been very difficult. They then bored a hole through the stone and tried how thick it was, and afterwards quarried out the stone in the inside; and they made a square hole, rather more than six feet square, and then drove the square 6-feet pile through it till they got to the proper depth, and they then filled it full of brickwork; then another was driven alongside of it, and another close alongside that, till they had made a pier of 40 feet long and 6 feet thick; and there was not a coffer-dam used.

How long do you anticipate the erection of Rochester Bridge will take?—I suppose, being a heavy tideway, from about eighteen months to two years.

Charles Fox, Esq., (of the firm of Fox, Henderson, & Co.,) examined.—Will you describe to the Committee the mode of construction?—Perhaps the simplest mode of describing it is to say, that instead of using the old-fashioned wooden coffer-dam, which was always a temporary work, we make use of cylinders of iron, which are in themselves coffer-dams, and which remain permanently as a portion of the structure. We adopt various modes of getting them down, but the more general one is this: we have a large receiver of wrought iron, very much like a cylindrical high-pressure boiler, and from that receiver we exhaust the atmosphere, and when we get the cylinder put into its place, just carefully lowered down on to the bed of the river, surrounded by temporary frames of timber, so as to be sure that it shall be kept in a vertical position, we put a cap on the top, having an elastic pipe from the top cap to the exhausted receiver, and we, at the proper time, open the communication between the two, and the pressure of the atmosphere on the surface of the water in the river produces such a rush to fill up the tube, so as to get rid of any vacuous space, that it carries on a constant state of excavation under the bottom edge of the cylinder, from the pressure of the atmosphere on the top. The atmosphere takes care to push down the pile, aided by its own weight, so as to take up any little space that may have been excavated. To prove this, we took a 6-feet cylinder, and calculated what the pressure of the atmosphere upon that cylinder would be, and taking the whole pressure of the atmosphere, it amounted to about 30 tons. I had 30 tons of iron rails placed on the top of the cylinder, and the only result was, that it pushed it down about three-quarters of an inch into the gravel, and brought it to a bearing; but it did no more.

Chairman.—Was that upon a cylinder of 6 feet in diameter?—Yes; we then took off the thirty tons of iron rails and put on the cap and opened the communication with the exhausted receiver, and the cylinder immediately descended into the solid gravel 6 feet 6 inches by one impulse.

Having descended only three-quarters of an inch before?—Only three-quarters of an inch; it just pressed it a little into the ground with the dead pressure of 30 tons. We then removed the cap, and put on the top of the pile 100 tons of rails; but we could get no depression, except some three-quarters of an inch, which was done by the little compression that you would have from the weight

of the edge of the cylinder on the gravel. That is the general mode of sinking these cast iron cylinders. But as it will be obvious to the committee, in the event of our meeting with, say, the trunk of an old tree, or a very large stone, we could not proceed any further, and we have had to devise many means of getting over any difficulty of that kind. In the case of the bridge at the Nene, we have had to go through not only a layer or two of gravel, but through two feet 6 inches of solid rock; and that rock not lying in a horizontal position, has offered difficulties which, under other circumstances, would be very expensive to overcome. To enable us to get through any unforeseen matter, it is necessary to get into the cylinder and excavate any material that may be within it, and cut through the obstruction; and to do that we have devised a means by which we convert the cylinder virtually into a diving-bell; that is to say, we fix a cap on the top of the cylinder, and the air pumps are constructed so that they are, when required, compressing pumps, and we can pump just air enough into the cylinder to make it counterbalance the pressure of the column of water without, by which means we keep the work perfectly dry, and the men can get at it just as well as if they were working in this room.

What is the greatest depth to which you have driven a single cylinder?—I think the greatest depth to which we have driven a single cylinder is about 19 feet; but one had been driven in the Godwin Sands 65 feet by the same process.

The Committee understand that the cylinders are not single, but are piled one upon each other to the required depth?—Exactly so; they are generally used in 9 feet lengths; the piles for the bridge at Rochester are of two diameters, they are 6 feet and 7 feet, and they are cast in lengths of 9 feet, with flanges at the top and bottom, which are accurately turned fitted together, so that they drop on to one another; there is a projection.

Are the Committee to understand that the surface or the bed of the river is in the first instance level, in order to receive the cylinder?—Not at all; we deal with it as we find it.

You use no mechanical means, except in the experiment to which you have adverted, of 30 tons and 100 tons of actual weight; you have recourse rather to physical means of exhausting the air and admitting the pressure of the atmosphere?—Yes, because it is so much cheaper. It is a serious job to put 30 tons on to a pile, whereas a simple cast iron cap, as I have before described, put on the top, is so exceedingly easy.

Pittsburgh and Cleveland.

We have now in successful operation a very pleasant and speedy line of communication for trade and travel between Pittsburgh and the Lake city. The line is made up of three modes of conveyance, and this adds an agreeable variety without decreasing the comfort of travel. The passenger leaves this city at 9 A. M., in a steamboat for Beaver, and after a pleasant sail down the Ohio for twenty-eight miles, he is transferred to a canal packet, handsomely fitted up, on which he spends the night, and arrives about noon the next day at Ravenna, and is immediately transferred to the fine Railroad Cars of the Pittsburgh and Cleveland line, and by 5 o'clock he is at Cleveland, making the journey in about 26 hours, without the loss of sleep or any fatigue, and in time to take the steamboat up or down the Lake, or the evening train of cars for Cincinnati. Travelers on this line will have the additional enjoyment of delightful scenery on the Ohio river, and on the Beaver and Ohio and Pennsylvania canal. The fare is so low, only \$3.50 through to Cleveland, that many persons will take the trip for the mere pleasure of travel and to see the great inland sea at Cleveland. For about six dollars, a visit can be made to Niagara Falls, without any fatigue whatever, comprehending in it a steamboat trip on the Ohio river, a trip on a canal packet, a ride on a railroad thro' the finest portion of the far-famed Western Reserve, a trip of about two hundred miles on Lake Erie, and a railroad from Buffalo to the Falls, passing through two fine cities, and affording the greatest variety of interesting travel to be had anywhere for the same amount of money. The agents for this line in Pittsburgh are G. M. Harton and J. A. Caughey.—*Pitts. Gaz.*

Illinois.

Mississippi and Vincennes Railroad.—This enterprise is commenced under the most favorable auspices. The officers of the company are, President, Col. John O'Fallon; Secretary, Geo. K. McGunnele; Treasurer, Robert Simpson; Counselor, Charles D. Drake.

These gentlemen are well known in this community, and enjoy its confidence and respect in an eminent degree. Of Col. John O'Fallon it is useless for us to speak. In the enjoyment of an ample fortune, he is always foremost in good works and in such enterprises as tend to promote the public good. Sagacious, discreet and energetic, his name is the prestige of success in whatever he undertakes. The affairs of this company could not have been committed to better hands. We have heretofore published a list of the directors, who are all gentlemen of the highest standing, and eminently worthy of public confidence.

Our City Council has headed the list of subscribers with a subscription of five hundred thousand dollars, and we do not doubt that our citizens will take up the enterprise with the spirit and zeal which its importance demands.

Judge Ellis, of Vincennes, has been, from the first, one of the most active and efficient of the friends of this great work; and when it is achieved, the public will owe him a heavy debt of gratitude for the perseverance and energy with which he has labored for its accomplishment.—*St. Louis Intelligencer.*

Maryland.

Baltimore and Ohio Railroad.—The following are memoranda of the business upon the Baltimore and Ohio Railroad, for the month of March, 1851.

The revenue for the month has been as follows:

	For passengers.	For freight.
Main Stem.....	\$33,635 14	\$84,353 74
Washington Branch..	22,645 68	7,158 39

\$56,280 82 \$91,512 13
Making an aggregate of \$117,988 88 on the Main Stem, and \$29,804 07 on the Washington Branch—the total being \$147,792 95.

The above, compared with the corresponding month of last year, shows a decrease of \$11,433 95 being \$8,029 30 on the Main Stem, and \$3,404 65 on the Washington Branch.

A dividend of four per cent. for the last six months, payable on and after the 15th inst., has been declared on the Washington Branch of the Baltimore and Ohio Railroad.

Nathan Tyson, Esq. was this day elected a Director on the part of the stockholders, in place of Mr. Donnell, resigned.

Indiana.

Terre Haute and Indianapolis Railroad.—We are informed that the whole of the iron for laying this road has been received at New Orleans, and that a large portion of it is now being transported from there to this place and Terre Haute. The whole line of the road is graded, and with a strong force on the road this summer, it is confidently expected that the road will be entirely completed by the first of December next. The bridge across White river, at this place, will be finished in a few months, there being but little over 300 yards of stone to lay to finish the abutments. When completed it will be a fine specimen of masonry.

The President of the company has succeeded in negotiating the sale of their bonds, at the east, on very favorable terms.—*State Sentinel.*

European and North American Railway.

When to Commence.—It is now a matter of inquiry as to the time when the railroad will be commenced in this Province. The act of incorporation does not go into effect until June next—but the present subscribers could call a meeting and take upon themselves the responsibility of commencing operations at once, and we have reason to believe that this will be done so soon as the facility bill has passed the Council and received the Governor's assent. The jubilee, on turning up the first sod, can be celebrated in this city some time in June. All the chief men from the Colonies and United States will be invited.—*St. John Morning News, of 26th ult.*

New York.

Chatham, Lebanon Springs and Hoosic River Railroad.—A meeting for the purpose of organizing a company for the construction of a railroad from some point near East Chatham, through New Lebanon, to connect with the northern roads in Vermont, was recently held at Lebanon Springs. Books of subscription to the capital stock were opened, and the amount necessary to effect an organization, and to secure a charter was subscribed, and the stockholders then elected the following gentlemen as directors for the ensuing year, viz: Daniel H. Gardner, of Hancock, David Campbell, Moses Y. Tilden, Charles W. Hull, Benoni Sherman, Elihu Kirby, H. A. Tilden, Henry Hull of New Lebanon; J. W. Fairfield, R. A. Barnard, E. Gifford, R. F. Clark, of Hudson, and K. M. Davis of Nassau.

The engineers are on the ground and have already commenced surveying the route. We shall look with anxiety for their report.

Virginia.

Orange and Alexandria Railroad.—We learn from the Alexandria Gazette that the work on this road is in a "prosperous and forward condition. But for the heavy rain, the work of laying the iron rails would have been begun in our streets yesterday. It will commence on Union street, and be extended from town continuously, and without interruption, the graduation being so far advanced as to keep out of the way.

We believe it is the design to commence running the trains regularly when the track gets near to Fairfax Court-house, and that it is expected to reach a point beyond the Manassas junction, and perhaps as far as Cedar Run, in Fauquier, in time to enable the farmers to bring to market the crops of that region for the current year."

Lake Shore Railroad.

The Cleveland Herald says that the entire line of the road from Cleveland to Painesville will be ready for the rails by the 15th of June, and that part of the road will be completed by the 1st of August if the iron is received in season. From Painesville to the west line of Pennsylvania the work is in the hands of the contractors, and a large force will be put on immediately, with a view to have the superstructure ready for the rails early next fall, and the whole line ready for opening by the 1st of January next.

Memphis and Charleston Railroad.

The Memphis papers speak encouragingly of the commencement of this work at that terminus. The engineers are engaged in making estimates of the grades, probable cost, etc., preparatory to letting out contracts, for repairing the grading to La Grange, building bridges, and otherwise making the track ready for laying down the iron. The railroad office at Memphis, is now ready to receive proposals for the delivery of cross ties for the section of the road between Memphis and La Grange. Only \$200,000 of the stock of the road, on this branch, remains untaken.

Population of Virginia.

The population of the State of Virginia, as ascertained by the recent census, stands thus:—

Eastern District.		Western District.	
Whites.....	401,550	Whites.....	492,609
Blacks (free)...	45,786	Blacks (free)...	8,123
Blacks (slaves). 409,783		Slaves.....	63,233
Total.....	857,116	Total.....	563,959

Showing an aggregate population of 1,421,081 in the whole State.

Notice to Contractors.

Virginia Central Railroad.

SEALED PROPOSALS will be received at the Engineer's Office of the Virginia Central Railroad, Charlottesville, on the 7th of May, 1851, for the Grading, Masonry and Brickwork of that portion of the line extending from Woodville to Blair Park, a distance of nine miles. Drawings and Specifications of the work may be seen from the 5th to the 7th of May inclusive. The best of references and an energetic prosecution of the work will be required.

Contractors are requested to state what work they are engaged on and when it will be completed. The directors reserve the right to accept or reject proposals, as they consider the interests of the company require. The names in full of all the parties must be given in the proposal.

By order of the President and Directors.

T. COLDEN RUGGLES,
Chief Engineer.

Charlottesville, April 8th, 1851.

LARGE SALE OF RAILROAD IRON, RAILROAD SUPERSTRUCTURE, Coal Cars, REAL ESTATE, PERSONAL PROPERTY, &c.—The Chesterfield Railroad Company, having discontinued business, will sell at public auction, at the Pits, in the County of Chesterfield, on **WEDNESDAY, the 22d of April, 1851, if fair, if not, on the next fair day, commencing at 11 o'clock,** all of their personal and real estate, consisting of from 180 to 200 tons railroad iron, the greater part of which has been laid down within the last few years, and is but little worn. Also, 224 coal cars, a large number of which is in good repair, each holding 75 bushels. Also, some timber and baggage cars, and one stage car. Large number of framed buildings, consisting of dwellings, shops, stables, &c., all in good repair, two lots of land near the Pits, one containing 3 1-5 acres, and the other a half acre lot, with buildings thereon sufficient for a small family. Two other lots of land adjoining each other, containing 14 acres, on the railroad, six miles from Richmond; on these lots there are buildings suitable for a large family, with a well of good water, and the whole premises well inclosed. Also, one large Drum, in good order, with an excellent set of ropes and cast iron pulleys, complete for an inclined plane. Also, a lot of Blacksmith's and Wheelwright's Tools, and a parcel of well seasoned White Oak Timber, suitable for wheelwrights.

Terms.—All sums under \$50 cash; over that amount and under \$500, 4 month credit; over \$500, 6 months credit; the deferred payments to bear interest, and to be secured by approved endorsed negotiable paper. By order of the company.

W. GODDIN, Auct.

Manufacturers of iron and steel will find it to their interest to attend the above sale, as it seldom occurs that so large and valuable a lot of iron, both cast and wrought, is offered at auction.

D. MOORE,

Sup't. Transportation Chesterfield R. R.

AMERICAN RAILROAD JOURNAL.

Saturday, April 19, 1851.

Particular Notice.

Subscribers wishing for odd numbers of the Journal as far back as 1845, to make good their sets, can be supplied *gratis* by immediate application at this office. After two weeks, we may not be able to furnish any.

Mansfield and Sandusky Railroad.

We call the attention of our readers to the recent report of this company in our paper of to-day. This is one of the pioneer roads in the west, and with an improved management and suitable facilities for business, which have now been provided, it bids far to become one of the most profitable. It constitutes the northern link of the great central trunk line of railroad through Ohio, which, by

the various links in progress, will soon be carried to the Ohio river at Portsmouth, and will traverse one of the richest mineral and agricultural portions of that great State.

Erie Railroad.

This, the greatest work of the kind in this country, and perhaps in the world, whether we take into consideration the importance of its connections, the extent of its line, the difficulties encountered, or the results which are to flow from its construction, may now be regarded as completed. A few days, at the farthest, will witness the laying of the last rail, and preparations are already making to celebrate the opening of the road in style worthy the importance of the occasion.

The Erie road is the second continuous line of railroad opened between tidewater, and the great lakes, and the first outlet of the kind, for western produce, free of legislative restriction. For success, therefore, it is thrown upon its own merits, and as every thing connected with it has been constructed on a scale corresponding to the magnitude of the work as a whole, and as the most ample accommodations have been provided for all the business which will be thrown upon it, it possesses great interest as being the first road called upon to solve the question of the superiority of railroads over the Erie Canal, as routes of convenience and economy for the transportation of produce between New York and the great lakes.

New York had the honor of opening the first line of cheap communication to the west, the Erie Canal; and this work has made this city the commercial metropolis of the country. Canals having given place to railroads, as instruments of commerce, this State has anticipated all others in the construction of a work of this kind, having a similar object with the Erie Canal; and although in the construction of railroads, we are not protected from the competition of other cities by superior natural advantages, as we are in our great water line—yet, all other things being equal, the position that New York has acquired through her canal, will secure to her that position against all rival works. The Erie road, too, has the great advantage of being opened far in advance of all rivals. This will turn the streams of travel and business into a channel from which it will be hard to divert them. The Erie railroad, like the Erie canal, is the great pioneer in the improved method of transportation and travel, and we anticipate from it similar results, both to this city and the country.

Black Rock and Fort Erie Suspension Bridge.

We learn from Mr. Serrell, Engineer of the Lewiston Suspension Bridge, who has made an examination of the site for the first named work at Black Rock and at the opposite Canadian shore, that there are no impediments whatever in the conformation of the banks of the Niagara river, to the construction of that desirable work. The space between the towers may be drawn within the distance of 1800 feet, less than double that between the towers at Lewiston and Queenston, and offer no impediment to the passage of the heaviest shipping craft on the lakes. The expense need not exceed \$250,000 for a bridge of the heaviest capacity required. The charter for this work has already passed the New York House of Assembly, and we trust that no obstacle will prevent its passage through the Senate. The Canadian Legislature is to hold its session in June, and we hope that that body will respond to the wishes of our citizens equally with those of our Canadian friends, who feel deeply interested in connecting us more closely by this magnificent work. A charter on liberal terms given by Canada, and we have no doubt the structure will

rapidly proceed, as there can be no doubt that a stock so promising in its results will be quickly subscribed. It must be of mutual advantage to both side.—*Buffalo Com. Adv.*

Kentucky.

Covington and Lexington Railroad.—The line of this road passes through the Counties of Kentucky, Pendleton, Bourbon and Fayette to Lexington—the distance 96 miles. The line has been located to Cynthiana, 63 miles. From that place to Paris, 15 miles, a corps of surveyors are on the line to locate and prepare it for letting at their earliest period. From Paris to Lexington, 18 miles, the route has not been surveyed. The grading of 36½ miles from Covington has been placed under contract at \$362,000. This is the most expensive portion of the line. The estimated cost of grading the 78 miles to Paris is \$796,000. The superstructure, with heavy T rail, at \$7,655 per mile, and the whole cost of a single track to Paris at \$1,452,799. There will be no grade between Covington and Cynthiana exceeding 21 feet to the mile, nor between that and Paris above 25 feet.

The Stock and Money Market.

There is still an improved feeling in railroad securities, with large sales at the brokers' board. In bonds of the country roads but little is doing. For these the market has been very quiet, but indications are not unfavorable for these works. Money is plenty for all legitimate purposes, and so long as this is the case, good securities cannot fail to command a fair price.

In rails, the last advices indicate a falling market. Freights are very low, which is an important item in favor of our roads. The quotations, free on board in Wales, range from £5 5s. to £5 10s. Freights, for metals, from 10s. to 12s. per ton.

SALES OF STOCK IN NEW YORK.

	April 16. Sales.	April 9. Sales.
U. S '67 Loan.....	116½	116½
Erie R.R.....	89½	85½
Harlem R.R.....	74	73½
Stonington.....	43½	44
L.I. R.R.....	23½	22½
Norwich & Wor....	64½	65
Del. & Hudson.....	129½	125
Reading.....	61½	60½
Morris Canal.....	18½	19
Erie income.....	95	94½
" " Bonds.....	102	104
Canton.....	72	73
Farmers Loan.....	64½	66½

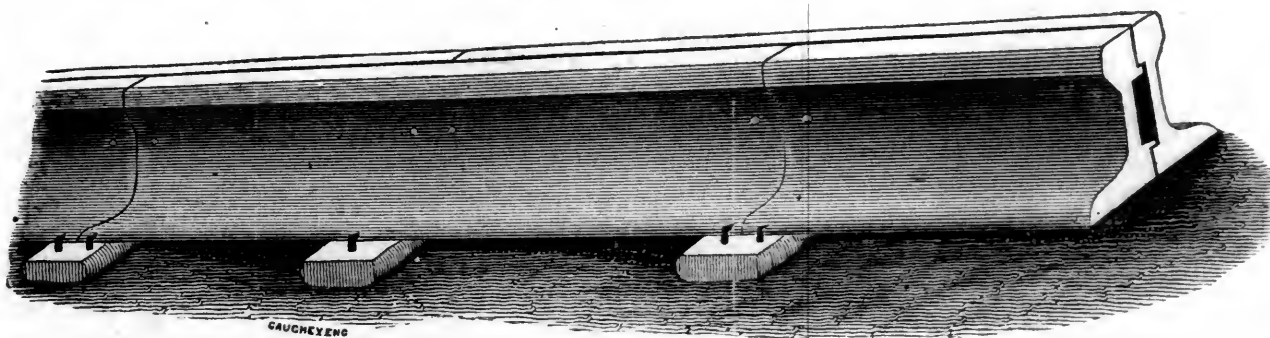
SALES OF STOCKS IN BOSTON.

	April 15.	April 8.
Old Colony Railroad.....	69	68½
Boston and Maine R.R.....	104½	104½
Eastern Railroad.....	102	102
Fitchburg Railroad.....	111½	111½
Michigan Central Railroad.....	94½	94½
Northern Railroad.....	71	70½
Vermont Central Railroad.....	35	35½
Vermont and Mass. R.R.....	31½	30½
Western Railroad.....	102	102½
Ogdensburg Railroad.....	40½	39½
Rutland Railroad.....	58	58½
Boston and Worcester Railroad.....	103½	103½
Rutland Railroad Bonds.....	97	97
Ogdensburg Railroad Bonds.....	97½	97½
Vermont Central R.R. Bonds.....	91	92
Boston and Providence R.R.....	85	85
Philadelphia, Wilmington & Balt.....	29½	29½
Concord R.R.....	56	56
Manchester and Lawrence.....	90	90

New York.

The Bath Courier says that most if not all the contractors upon this end of the Buffalo and Con-hockton Valley railroad have broken ground on their respective sections, and are now fairly at work.

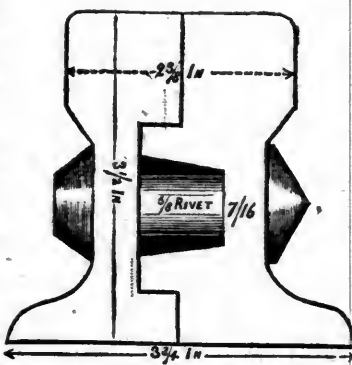
PATENT COMPOUND RAIL.



THE UNDERSIGNED NOW OFFER TO THE Railroad Public a new Compound Railroad Bar, which possesses, as they believe, a decided superiority over every kind now in use. The Cuts annexed will give a good idea of the form of the Rail, and the mode of combination.

This Rail has now been in use on the New York and Erie and the Utica and Schenectady Railroads for nearly two years, and has proved itself to be a *durable and continuous* rail, realizing the advantages of a theoretically perfect rail, over the one in common use. We invite the attention of Railroad Companies to a careful examination of the merits of the form now offered.

The advantages of this Rail are: first, it effects a saving of from 25 to 50 per cent. in the wear and tear of the machinery; secondly, it saves to a vastly greater extent in the repairs of track; thirdly, it secures a much higher rate of speed with the same power; and what is of still



greater importance, it offers complete protection against most of the accidents to which companies are liable. For these reasons, it is believed to be not only the best, but the cheapest rail that can be used. In enumerating its advantages, the proprietors only repeat the statements of competent persons, who have had the best opportunities of judging of its merits.

This improved Rail is now being manufactured at the Works of the Mount Savage Iron Co. in Maryland. Any communications or enquiries addressed to either of the undersigned will receive prompt attention.

J. F. WINSLOW, President,
Troy, N. Y.

ERASTUS CORNING, Albany.

WARREN DELANO, Jr., N. Y.

JOHN M. FORBES, Boston.

ENOCH PRATT, Baltimore.

April 8, 1851.

Engine House and Machine Shop— U. S. Navy Yard, Brooklyn.

The work of constructing this large building has been resumed for the season, with a force of mechanics and laborers sufficiently numerous to complete it by the first of July next.

That portion of the house in which the pumping engine for the dry dock is placed, was erected last year, and already presents a fine appearance.—When completed, there will be a main building, 180 feet long, 60 feet wide, and four stories in height, with two wings each 60 feet square, and three stories in height, covering in all an area of 18,000 square feet.

The exterior walls of the building are granite, finely cut, and laid up in two feet courses; bonded into an interior lining of brick, and forming together a wall 2½ feet thick at the base, diminished by offsets at the stories, to 20 inches under the cornice.

As a structure, it wholly lacks architectural effect, the only projections being the window lintels and the cornice; but it excites admiration from its extent, the beauty of the material, and superiority of the workmanship.

The east wing contains the engines and pumps for the dry dock; the rest of the building being intended as a machine shop for the construction of the engines for government steamers.

Applicable to this purpose there will be a flooring amounting to 37,500 square feet, to be appropriated exclusively to finishing work. A foundry and smithery are also to be built, and on their completion, the Brooklyn Navy Yard will possess facilities for the rapid construction or repair of war steamers unequalled in this country.

The roof of the engine house is very light and beautiful, and merits a particular description.

It is formed by iron rafters sprung without intermediate support, from the side walls, and covered

with copper sheeting. These rafters are placed five feet apart, and are made of two pieces of wrought iron, each one half inch thick and four inches deep—fastened together by rivets, with a space between of one-half an inch. Within this space, and secured by the same rivets at intervals of seven inches, are cast iron buttons, weighing about one and a half pounds each, having a dovetailed slot on the upper side to receive the wrought iron lath, to which the copper sheeting is fastened.

The rafter is trussed in the centre by a cast iron brace, five feet in length, from the end of which extend two rods 1½ inch in diameter to the ends of the rafter. Opposite braces are connected by a rod one inch in diameter, to prevent the roof from spreading. Opposite rafters mitre against each other at the ridge, and their feet rest in cast iron shoes which are bolted to a wall plate also of cast iron.

The rods are provided with buckle bolts to take up the desired strain while the shoes slide on the wall plates, and the copper sheeting on the lath at a change of temperature without causing leakage through the roof.

The World's Fair in America.

A meeting of delegates of the various railroad and steamboat companies was held on the 10th inst at the Astor House, to take into consideration the increased facilities that will be required by the public on the occasion of holding a World's Fair of the Industry of all Nations, at New York, in 1852.

General John S. Darcy was appointed Chairman, and Lewis Perrine, Esq., Secretary.

James S. Green, Esq., after preliminary remarks, offered the following resolutions, which were unanimously adopted:—

Whereas, in view of the prospect of a Great Exposition of the Industry of all Nations, to be held

on Governor's Island, appropriated by Government for the purpose, which exposition will demand additional facilities for the accommodation of the travelling public, it is proper for the railroad and steamboat and stage interests of the Union to consult on the measures necessary for the purpose,

Resolved, That an adjourned general meeting of railroad and steamboat and stage directors and proprietors be called at the Astor House, at 12 o'clock on the thirtieth day of April, 1851, for the purpose of taking into consideration the means of accommodating the increased amount of travel which may be expected.

Resolved, That the directors of all the railroad and steamboat routes, and the proprietors of steamboats and stages, be invited and earnestly requested to attend personally, or by their representatives, the said adjourned meeting.

JOHN S. DARCY, Chairman.

LEWIS PERRINE, Secretary.

New York, April 3, 1851.

New York.

Plattsburgh and Montreal Railroad.—The Clinton County Whig says that arrangements have been made to go on immediately with the survey of this road, from the Canada line to Plattsburgh. The Whig is of opinion that the whole line will be graded in nine months. The following directors have been chosen:—

Henry G. Hewitt, William Swetland, T. Follett, Samuel F. Vilas, St. John B. L. Skinner, Amasa C. Moore, Charles A. Cook, William Palmer, Amos S. Perry, James S. Shedden, James Fitch, William Hedding, Putnam Lawrence.

Illinois.

The city of Quincy has lately been authorised, by a vote of the people, to subscribe \$100,000 to the Northern Cross railroad. The vote stood 1112 to 16 against the subscription.

Superintendent of the Cleveland and Columbus Railroad.

We learn with much pleasure that the board of directors of the Cleveland and Columbus railroad have, by an unanimous vote, appointed Mr. A. Stone, formerly of Springfield, Mass., Superintendent of said road. The appointment of Mr. Stone will be gratifying to all the stockholders in that company. He has long been acquainted and connected with railroads, has been a heavy contractor, is an able and accomplished mechanic, a man of rare business talents, and one who has the confidence and respect of the capitalists and railroad men of our country. Mr. Stone will now locate permanently with us—truly a valuable acquisition.—*Cleveland Herald.*

For the American Railroad Journal.**The Hempfield Railroad.**

The friends of this important link in the chain of railroad connections between the west and the Atlantic cities, will be pleased to learn that the right of way to Wheeling has been granted by the Legislature, and that the company are determined to adopt, without delay, the most efficient measures for the active prosecution of the work. At a late meeting of the board of directors, the following resolution was adopted, to wit:

Resolved, That this company will proceed with all convenient dispatch, to survey, locate and construct their road by the nearest and most practicable route route, from Greensburgh, in Westmoreland county, by way of the borough of Washington, direct to the City of Wheeling, with a view to a connection at that point with the Central Ohio railroad.

They also appointed a committee to secure the services of competent, well qualified engineers, to make the necessary surveys, estimates, etc., preparatory to the letting of the contracts on the road.

The next meeting of the board will be held at the city of Wheeling, and the President is instructed to invite the board of directors of the Central Ohio railroad to meet with them, and have a conference in reference to the interests of this great line of western connection.

As the right of way through Virginia is secured, and there is now no obstacle to the vigorous prosecution of the work, it is confidently believed that the necessary means will be provided for that purpose. The shortness and directness of the route gives the road a decided preference over any other connection between the east and west, and must commend itself to eastern capitalists and business men. But to give them a confidence in its speedy and vigorous prosecution, the people of the fertile and populous region through which it passes, must come forward and with elaciry furnish liberal subscriptions. Unless the persons who are directly interested exhibit a commendable liberality, those at a distance whose interests are not so largely affected in the improvement may have some excuse for withholding their efficient aid.

It is hoped, therefore, that our farmers and others, who desire to favor the prosecution of this important work, will come forward immediately, and without personal application, make their investments. For this purpose, subscription books are in the hands of the Secretary at Washington, of Messrs. Paul & Neil of Wheeling, of George Wilson, of West Alexander, of Sheshbazzar Bentley of Bentleyville, and of Messrs. Brady and Kuhns of Greensburg, Westmoreland county.

JOSEPH HENDERSON, Secy.

Washington, Pa., March 24th, 1851.

Ohio.

Junction Railroad.—It affords us much pleasure, says the Maumee Times, to be enabled to say to our readers that our citizens have formed an alliance with, and secured the permanent location of the Junction railroad through Perrysburgh and Maumee City to Toledo, and that the arrangement has been made and perfected upon as good terms as we could reasonably ask. The location and building of this road cannot but give enterprise and business in our place a new impetus. It will place us, as far as railroads are concerned, on an equality with any of our neighboring towns.

The Junction road has secured stock subscriptions as follows:—

Ohio City	\$150,000
Elyria	60,000
Olmsted	15,000
Huron and Black river	30,000
Sandusky City	150,000
	<hr/>
	\$405,000
They ask of Maumee City, Perrysburgh and adjoining townships	120,000
And they have in other valuable subscriptions	45,000
	<hr/>
	\$570,000

Illinois.

The great Central Railroad Company of Illinois have chosen Col. William H. Bissell, attorney for the southern division of the State, and Morris Braynan for the northern; and they, with John Moore and Judge Lockwood, the two State trustees, are to select the lands in person, without additional salary. R. B. Mason was chosen chief engineer, with instructions to organize his corps in New York. The route to be determined by the President, Robert Schuyler, of New York.

New York.

Albany Northern Railroad.—At a meeting of the board of directors, held on Thursday evening, the 10th instant, the following gentleman were appointed officers of the company:—Marcus T. Reynolds, President; Samuel Pruyn, Treasurer; A. D. Robinson, Secretary.

Railroad Subscriptions in Ohio.

The counties of Fairfield, Pickaway, Fayette and Clinton, have just voted an aggregate of \$750,000 to aid the construction of the direct line from Cincinnati to Zanesville. This route runs thro' Wilmington, Washington, Circleville and Lancaster.

In addition to the county, a large amount of private subscriptions have been secured, which would seem to place the construction of this line beyond a doubt. The route takes a middle course between the Xenia and the Belpre roads.

The county of Huron has also voted a subscription of \$100,000 in favor of the Cleveland, Norwalk and Toledo road, and the county of Sandusky \$50,000 to the same object.

Packet Station on the West of Ireland.

We see it stated in the English papers that the advantages which the harbors on the western coast of the Island, and especially Galway, offer to American commerce, are about to be set forth in a memorial to the President and Congress of the United States, which will bear signatures of great respectability from Dublin and other parts of the Island. It is contended that the voyage would average at least forty hours less time than to Liverpool, and might be accomplished with greater safety and with less delay from unfavorable winds. The memorial will ask to have the U. S. Mail

steamers stop at Galway instead of going to Liverpool.

Virginia.

Central Railroad.—In another part of our paper will be found an advertisement of a letting on this work which will carry the road, on the east of the Blue ridge, to the tunnel section, which is being constructed on account of the State.

The Central, in which is now incorporated the old Louisa railroad, is made up of the following links, viz:—Richmond to the Junction, 28 miles, thence to Charlottesville, (to which point the road is in operation,) 70 miles, Charlottesville to Woodville 8, Woodville to Blair Park 9, Blair Park to Waynesboro, (the State section, including the Blue ridge tunnel,) 10 miles, Waynesboro to Staunton 12, making the whole extent of line in operation and in progress 137 miles. Of the part in progress, the section between Charlottesville and Woodville is so far advanced that the grading will be completed by August next. The tunnel section of ten miles will, with the exception of the tunnel, [7ths of a mile,] be finished in 1852. The work on the one from Waynesboro to Staunton is about half done, and may be completed the present year. It is not intended to await the completion of the tunnel before opening the road, but to supply the gap by a portage of about 1½ miles over the mountain. When this road shall be opened into the valley, its friends claim that it will effect a saving of 40 cents on the barrel of flour sent to market from that quarter, over the present cost.

From Staunton to Covington, a distance of seventy miles, surveys are in progress, and the grading, etc., will probably be let next fall. From Covington to the Kanawha, surveys are in progress on the State's account, but Covington may be looked upon as the limit of the immediate efforts of the company; but we fully believe, that the gaining of that point, will be the signal for a successful effort to cross the Alleghanies. The State of Virginia seems to have adopted the policy of subscribing three-fifths to the stock of railroads within her borders, and this aid renders the building of railroads a comparatively easy task, without which their construction would, for many years, be impossible.

Pennsylvania.

The bill to incorporate the Susquehanna railroad company was finally passed in the Pennsylvania Senate on Saturday, by a vote 18 to 6. It had previously passed the house. Speaking of this enterprise, the Sunbury American says:—

The people of the Susquehanna are resolved to have a railroad up the valley of their noble river, which will not only connect with the New York and Erie railroad at Elmira, but will be carried up the west branch, and from thence to Erie. The Baltimoreans are aware of the great importance of this trade, and will themselves give a liberal and helping hand to aid in its construction. We understand that a sum nearly sufficient to build the road, from Harrisburg to Sunbury is ready for the work.

The Senate amendment reviving the charter of the Columbia and Maryland Line railroad company was agreed to, both amendments providing that the company should not extend the road further than Safe Harbor, Lancaster county.

The Philadelphia Ledger says that the Philadelphia, Wilmington and Baltimore railroad are about to relay their track between Wilmington and Baltimore. The company have purchased six thousand tons of heavy rail, half of which is from the Montour Iron Works, at Danville, Pa.

ABSTRACT OF MASSACHUSETTS RAILROADS.

NAMES OF ROADS.	Length of line. Miles.	Length of branches. Miles.	Total length	Cost.	Cost per mile.	Number of passengers carried.	Tons of freight carried.	Receipts. 1850.	Expenses. 1850.	Net receipts.	Rate of dividend. 1850.
*Berkshire	21	None.	21	\$600,000 00	28,571 42	48,931	16,540	.....	.....	.....	7 per ct.
Boston, Barrie and Gardiner .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Boston and Lowell	25.7	2	27	1,945,646 68	72,060 98	558,993	231,874	\$406,421 00	\$257,884 03	\$148,536 97	8 "
Boston and Maine	74.6	9.83	84.4	4,021,606 59	47,629 59	1,221,071	143,673	594,963 45	289,478 02	285,057 11	5 "
Boston and Providence	41	12	53	3,416,232 51	64,457 21	591,949	104,203	370,727 26	161,930 26	208,797 00	5 1/2 "
Boston and Worcester	44.6	24	68.6	4,882,648 23	71,175 63	1,001,989	252,253	757,946 79	398,338 81	353,607 98	6 1/2 "
Cape Cod Branch	27.8	1.04	28.8	626,543 21	21,721 33	69,311	20,781	56,856 40	28,289 91	18,766 49	.....
Charles River Branch .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cheshire	53.6	None.	53.6	2,738,318 10	51,088 11	118,952	66,573	208,414 38	177,242 05	31,172 33	.....
Connecticut River	50	2.3	52.3	1,798,855 38	34,362 88	305,900	71,824	191,587 12	36,769 32	54,817 80	5 1/2 "
†Dorchester and Milton	33	None.	3.3	132,171 72	40,051 73	.....	.....	.....	.....	.....	None.
Eastern	38	19.91	57.9	3,120,391 67	53,883 46	1,006,552	71,586	539,076 43	221,660 55	317,415 88	8 "
Essex	19.8	1.36	21.1	537,869 01	25,419 12	76,294	18,373	47,383 55	Not known.	.....	None.
Fall River	42.2	None.	42.2	1,068,167 01	25,312 01	273,957	71,949	210,080 73	109,768 61	100,312 12	.....
Fitchburg	50.9	15.5	66.4	3,552,282 59	53,468 11	1,080,286	328,258	551,607 13	257,083 80	294,523 33	8 "
Fitchburg and Worcester	13.9	None.	13.9	259,073 93	18,638 41	41,528	13,467	21,431 42	18,054 22	3,377 20	None.
Framingham Branch .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grand Junction R.R. & Depot Co	6	.....	6	678,116 31	113,019 38	.....	.....	.....	.....	.....	.....
†Hartford and New Haven	5.8	.....	5.8	171,152 65	29,509 07	184,695	54,755	.....	.....	.....	.....
Harvard Branch	3.6	None.	3.6	26,213 02	7,281 39	100,900	None.	6,610 21	7,276 00	None.	.....
||Lexington and West Cambridge	6.6	.....	6.6	242,160 86	36,690 73	.....	.....	.....	.....	.....	.....
Lowell and Lawrence	12.3	None.	12.3	333,254 42	27,093 93	99,202	7,229	38,758 32	29,748 25	9,010 07	4 "
Medway Branch .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Midland .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nashua and Lowell	14.5	None.	14.5	651,214 88	44,911 37	261,459	161,893	129,617 26	79,347 05	50,270 21	8 "
New Bedford and Taunton	20.1	1	21	498,751 66	23,750 08	104,591	32,717	144,472 58	100,916 58	43,556 00	7 "
Newburyport	8	.....	8	106,825 31	13,353 16	15,445	1,622	3,551 00	Road unfinished.	.....	.....
N. London, Willim. and Palmer	9	.....	9	180,000 00	20,000 00	.....	.....	.....	.....	.....	.....
Norfolk County	26	.....	26	1,060,990 01	40,808 42	64,592	17,527	57,840 94	38,193 41	19,647 53	.....
Norwich and Worcester	17	.....	17	772,105 90	47,770 93	.....	.....	.....	.....	25,888 00	2 1/2 "
Old Colony	37.25	7.75	45	2,293,534 83	50,967 44	684,263	87,645	296,170 79	215,702 07	80,468 72	None.
¶Peterborough and Shirley	14	None.	14	272,646 96	19,474 78	.....	.....	.....	.....	.....	.....
Pittsfield and North Adams	18.6	.....	18.6	443,677 68	23,816 00	28,485	15,699	32,605 02	13,456 01	19,148 11	6 "
Providence and Worcester	27	None.	27	923,288 10	34,195 85	305,938	49,231	.....	.....	53,785 30	.....
Salem and Lowell	16.8	.....	16.8	316,942 82	18,865 64	11,687	10,384	15,505 21	13,135 24	2,369 97	.....
Saugus Branch .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Southbridge and Blackstone .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
South Reading Branch	8.1	1150 feet.	8.2	231,601 33	26,468 72	36,624	4,729	9,123 87	6,204 69	2,919 18	.....
¶South Shore	11.5	.....	11.5	420,434 03	36,559 48	.....	.....	.....	.....	.....	.....
**Stockbridge and Pittsfield	21.9	None.	21.9	448,700 00	20,488 58	.....	.....	.....	.....	.....	7 "
††Stony Brook	13.1	None.	13.1	265,526 73	20,269 21	61,139	19,079	.....	.....	.....	6 "
Stoughton Branch	4	None.	4	93,433 29	23,356 32	45,475	14,032	24,857 49	18,881 61	5,975 83	5 "
Taunton Branch	11.1	3000 feet.	11.6	307,136 29	26,477 26	106,886	39,003	114,466 35	86,907 60	26,812 48	8 "
Troy and Greenfield .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Vermont and Massachusetts	69	8	77	3,192,021 54	41,974 30	168,054	106,287	177,694 68	154,359 90	23,334 78	.....
††Waltham and Watertown .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Western	117.8	.....	117.8	8,032,813 83	68,190 27	467,086	261,269	1,369,513 98	607,549 36	761,964 52	8 "
¶¶West Stockbridge	2.7	None.	2.7	41,516 29	15,376 40	.....	.....	.....	.....	.....	4 1/2 "
Worcester and Nashua	39.6	.....	39.6	1,282,691 04	32,643 71	.....	.....	123,479 35	82,157 02	41,322 33	4 1/2 "
				1,046.6	\$51,885,556 46	9,191,807	2,294,456				

* Leased to Housatonic railroad.

† Leased to Old Colony railroad corporation.

†† Operated by the Hartford and New Haven railroad corporation in Connecticut.

¶ Run by the Fitchburg railroad company by contract.

¶¶ Run by the Fitchburg company.

¶¶ Leased to Old Colony railroad corporation.

** Leased and operated by the Housatonic railroad corporation.

†† Leased to the Nashua and Lowell railroad company.

¶¶ Construction not yet commenced.

¶¶ Complete returns not made.

Average cost of road, \$49,573 43 per mile.

The following table exhibits the important characteristics of the seven trunk railroads running into Boston, the cost of the roads and their equipments, the amount of capital and debt of the corporations, and the traffic, income and expenses of each road during the last year:

RAILROADS.	Length of railroad and branches.	Cost of road, branches and equipments.	Miles run by trains.	No. passengers.	No. tons merchandise.	No. passengers carried one mile.	No. of tons merchandise carried one mile.	Gross receipts.	Expenses, exclusive of interest.	Net income.	Expense per mile run by trains.	Gross receipts per mile of road.	Expenses per mile of road.	Net receipts per mile of road.	Total amount of capital and debt.	Net earnings on total investment.	Rates of dividend in '50.
Boston and Lowell	Mls 27 1/2	Dollars. 1,945,646	235,995	558,993	231,874	9,706,190	5,863,416	106,421	256,506	149,912	108 1/2	14,779	9,327	5,452	1,945,646	7,7050	8 "
Boston and Worcester	68 1/2	4,882,648	436,199	1,001,989	252,252	19,551,031	9,663,386	757,946	377,041	380,905	86 1/2	11,065	5,504	5,561	5,178,658	7,3553	6 1/2 "
Providence	53	3,416,232	251,950	591,949	104,203	8,412,205	2,222,156	370,727	159,279	211,447	63 1/2	6,995	3,005	3,990	3,431,800	6,1614	5 1/2 "
Eastern and E. in N. H.	74	3,613,474	311,004	1,006,552	71,586	14,656,349	1,829,530	539,076	185,217	353,858	59 1/2	7,255	2,503	4,752	4,324,236	8,1831	8 "
Boston and Maine	83	4,021,606	463,590	1,221,071	143,673	19,788,934	4,465,801	594,963	289,478	305,485	61 1/2	7,168	3,490	3,678	4,289,094	6,6460	5 "
Old Colony	45	2,293,534	216,879	684,263	87,465	8,103,246	1,268,083	296,170	195,233	100,937	90	6,581	4,338	2,243	2,293,534	4,3966	.....
Fitchburg	66	3,552,282	375,424	1,080,286	328,258	14,299,205	8,284,617	551,607	250,974	300,632	56 1/2	8,358	3,801	4,557	3,600,000	8,3898	8 "

Statistics of English Manufacturing.

An official return made to Parliament, although not complete in all respects, furnishes very interesting details upon the number of factories, etc., in the United Kingdom, and which is stated at 4,330; with 25,638,716 spindles, and 298,916 power looms. Of this total, no less than 3,689 factories are in England and Wales. The number of persons employed is 596,082, of whom 349,215 are females. Some of the manufacturers refused to make the return called for.

Georgia.

There is in course of erection at Savannah a magnificent depot, which forms the terminus of the Great Central railroad connecting that city with Macon. It will cover, when finished, thirty or thirty-one acres of ground, and is the finest edifice of the kind in the United States. An idea of its capacity may be conceived from the fact, that it will have tracks enough to accommodate (independent of the passenger trains) twenty-four trains of freight cars of eight hundred bales of cotton each, or an equivalent in other merchandise.

Railroad Movements.

Judge Lane and others, on the part of the Mad River and Lake Erie railroad; and Mr. S. L. L'Hommedieu on the part of the Cincinnati, Hamilton and Dayton railroad; and some Boston gentlemen who are largely interested in the stock of one or both of these roads, have lately been holding a consultation at Dayton, with reference to their mutual interests. They have determined that there shall be a common passenger and exchange freight depot at Dayton for both roads.

Stickney & Beatty,
DEALERS IN IRON AND IRON
MANUFACTURERS.

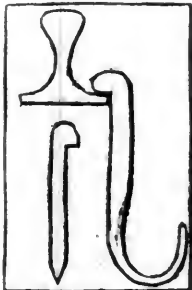
AGENTS for the Baltimore City Rolling Mill, (Works of Messrs. Ellicott) also agents for the sale of the Laurel, Locust Grove and Gunpowder (Balt.) Forge Pig Irons; Hupp's Cold Blast Columbia Wheel Iron, Fort and anti-Eatam Pig Irons. Caledonia, Columbia and Capon Cold Blast Boiler Blooms, warranted; Wm. Jessop & Son's Steel: Old Colony and anti-Eatam Nails; Bar Iron, Boiler Plates, Hoop, Sheet, Oval, Half Oval, Horse Shoe and other Iron. Exchange Place, Baltimore.

For Sale.

TWO Locomotive Engines—10½ tons weight, built by Baldwin. Also Four Eight-wheeled Passenger Cars, with side seats, all in good running order. Apply to **WM. E. MORRIS**, Office of Philad., Germantown & Norristown Railroad Co., 9th and Green sts., Philadelphia. 3m5

Railroad Spikes, Wrought
Chairs and Fastenings.

THE subscribers continue to manufacture, with increased facilities, Hook and Flat Head Railroad Spikes and Chairs. The points being finished by hand, have a long taper, and sharp point, and are much superior to those made entirely by machinery.



We are also prepared to furnish Wrought Chairs, Clamps and Fastenings of every description, either punched or plain. The best quality of refined iron is used in the above articles, and our prices will be made as favorable as any in the country.

The patent Clinch Spike will be found an improvement to secure the rail at the joints.—

They drive in the manner shown and are not liable to work loose.

All communications, addressed to the undersigned, will meet with prompt attention.

SMITH & TYSON,
 No. 25 South Charles st., Baltimore Md.

Notice to Contractors.

St. Andrews and Quebec Railroad.

TENDERS will be received up to 15th of May next, at the Railroad Rooms, Saint Andrews, for Grading 32 miles of the St. Andrews and Quebec Railroad, commencing at the terminus of the ten miles already graded, near Bartlett's Pond, and continuing on the Line to Station No 2314, near the head waters of the Digdeguash river.

Plans, Specifications and Sections of the Line, may be viewed at the Engineer's Office, at any time after the 10th of April next, and information given by A. L. Light, Engineer.

JOHN WILSON, President.

To Contractors.

ENGINEER'S OFFICE CENTRAL OHIO R. R.,
 Zanesville, March 20, 1851.

SEALED PROPOSALS for the Masonry of a Railroad Bridge across the Muskingum River at Zanesville, will be received at this office until the 15th of May next.

Also for the Iron or Wooden Superstructure of said Bridge, and for draw bridge across the Canal.

Plans and specifications furnished on the 1st of May next. Bidders may furnish their own plans and specifications, if filed at this office prior to that day.

By order of the Board.

ROBERT MAC LEOD,
 Chief Engineer.

ENGINEERS.

Atkinson, T. C.,

Mining and Civil Engineer,
 Orange and Alexandria Railroad, Alexandria, Va.

Clement, Wm. H.,

Little Miami Railroad, Cincinnati, Ohio.

Cozzens, W. H.,

Engineer and Surveyor, St. Louis, Mo.

Alfred W. Craven,

Chief Engineer Croton Aqueduct, New York.

Floyd-Jones, Charles.

Alton and Sangamon Railroad, Alton, Illinois.

Gay, Edward F.,

Columbia and Philadelphia Railroad, Philadelphia Pa.

Gilbert, Wm. B.,

Rutland and Burlington Railroad, Rutland, Vt.

Gzowski, Mr.,

St. Lawrence & Atlantic Railroad, Montreal, Canada.

Grant, James H.,

Nashville and Chattanooga R. R., Nashville, Tenn.

S. W. Hill,

Mining Engineer and Surveyor, Eagle River,
 Lake Superior.

Holcomb, F. P.

Southwestern Railroad, Macon, Ga.

Latrobe, B. H.,

Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,

Buffalo and Conhocton Valley Railroad, Bath, N. Y.

Morris, Elwood,

Schuylkill Navigation, Schuylkill Haven, Pa.

Nott, Samuel,

Lawrence and Manchester Railroad, Boston,

Osborne, Richard B.,

Civil Engineer, Philadelphia.

Prichard, M. B.,

East Tennessee and Georgia R. R., Cleveland, Tenn.

W. Milnor Roberts,

Bellefontaine and Indiana Railroad, Marion, Ohio.

Roberts, Solomon W.,

Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Sanford, C. O.,

South Side Railroad, Virginia.

Schlatter, Charles L.,

Northern Railroad (Ogdensburg), Malone, N. Y.

Steele, J. Dutton,

Pottstown, Pa.

Trautwine, John C.,

Civil Engineer and Architect, Philadelphia.

Tinkham, A. W.,

United States Fort, Bucksport, Me.

Troost, Lewis,

Alabama and Tennessee Railroad, Selma, Ala.

Whipple, S.,

Civil Engineer and Bridge Builder, Utica, N. Y.

HOTELS.

DAVIS'S

ALHAMBRA HALL,

No. 136 Pratt street,
 BALTIMORE.

Exchange Hotel,

Adjoining Eastern Railroad Depot,
 BUFFALO, N. Y.

BY.....**FISK & SPERRY,**
 Late of Delevan House, Albany.

MANSION,

Corner of Maine and Exchange Streets,
P. DORSHIMER. BUFFALO.

Barnum's City Hotel,

MONUMENT SQUARE, BALTIMORE.

This Extensive Establishment, erected expressly for a Hotel, with every regard to comfort and convenience, is situated in the centre and most fashionable part of the city, and but a few minutes' walk from the Railroad Depots and Steamboat Landings.

The House has lately undergone a thorough repair, embracing many valuable improvements, and will accommodate 250 Guests. **BARNUM & CO.**

American Hotel,

Pratt street, opposite the Railroad Depot,
 BALTIMORE.

HENRY M. SMITH.....Proprietor.
 Late of the Exchange & St. Charles Hotels, Pittsburg

Washington Hotel,

BY **JOHN GILMAN,**

\$1 Per Day.

No. 206 Pratt street, (near the Depot),
 BALTIMORE.

GUY'S

United States Hotel,

(Opposite Pratt street Railroad Depot),
 BALTIMORE.

JOHN GUY.

WILLIAM GUY.

DUNLAP'S HOTEL,

On the European Plan,

NO. 135 FULTON STREET,
Between Broadway and Nassau St.,
 NEW YORK.

JONES' HOTEL,

NO. 152 CHESTNUT STREET,
 PHILADELPHIA.

BRIDGES & WEST,

Proprietors.

Fountain Hotel,

LIGHT STREET, BALTIMORE,
P. THURSTON.....Proprietor.

BUSINESS CARDS.

Walter R. Johnson,

CIVIL AND MINING ENGINEER AND AT-
 torney for Patents. Office and Laboratory, F St.,
 opposite the Patent office, Washington, D. C.

Lithography.

JOHN P. HALL & CO.,
161 Main st., Buffalo, (Commercial Advertiser Build.)
Are prepared to execute all kinds of Lithography in good style and at reasonable rates. Particular attention will be paid to Engraving Railroad Maps, Engineer's Plans and drafts, etc., and orders in this line are respectfully solicited.

Cumberland, (Md.), Coals for Steaming, etc.

ORDERS RECEIVED FOR AND FILLED
by J. COWLES, 27 Wall St., N. Y.

J. & L. Tuckerman,
IRON COMMISSION MERCHANTS,
AND MANUFACTURERS OF
ULSTER BAR & POUGHKEEPSIE PIG IRON,
69 WEST STREET,
NEW YORK

Henry I. Ibbotson,
IMPORTER of Sheffield and Birmingham Goods.
Also, Agent for the Manufacture of Telegraph Wire.
218 PEARL ST., NEW YORK.

Charles T. Jackson, M. D.,
STATE ASSAYER, late Geologist to Maine, Rhode Island, New Hampshire, and the United States, offers his services to his friends and the public in making any Chemical, Mineralogical or Geological researches that may be required for the improvement of Agriculture and the Manufacturing Arts. Particular attention will be paid to the exploration of mines and to assaying of ores of the metals.
State Assayer's office, 31 Somerset st.
Boston Sept. 3, 1850.

STEEL AND FILES.

R. S. Stenton,
20 CLIFF STREET, NEW YORK,
AGENT FOR

J. & RILEY CARR,
BAILEY-LANE WORKS, SHEFFIELD,
Manufacturers of Cast, Shear, German, Blister, and Spring Steel,
Of all descriptions, Warranted Good.

FILES.
Manufacturers of Machinists' Warranted Best Cast Steel Files, expressly for working upon Iron and Steel, made very heavy for recutting.
A full Stock of Steel and Files at all times on hand.
6m4

Cumberland Steam Coal,

FROM THE
FROSTBURG MINES, MD.
H. A. TUCKER,
Agent of Frostburg Coal Co.
No. 50 Wall Street, New York.

Dudley B. Fuller & Co.,
IRON COMMISSION MERCHANTS,
No. 139 GREENWICH STREET,
NEW YORK.

Manning & Lee,
GENERAL COMMISSION MERCHANTS,
NO. 51 EXCHANGE PLACE,
BALTIMORE.

Agents for Avalon Railroad Iron and Nail Works.
Maryland Mining Company's Cumberland Coal 'CED'
—'Potomac' and other good brands of Pig Iron.

Samuel Kimber & Co.,
COMMISSION MERCHANTS
WILLOW ST. WHARVES, PHILADELPHIA.

AGENTS for the sale of Charcoal and Anthracite Pig Iron, Hammered Railroad Car and Locomotive Axles, Force Pumps of the most approved construction for Railroad Water Stations and Hydraulic Rams, etc., etc.
July, 27, 1849.

James Herron, Civil Engineer,
OF THE UNITED STATES NAVY YARD,
PENSACOLA, FLORIDA.,
PATENTEE OF THE

HERRON RAILWAY TRACK.
Models of this Track, on the most improved plan, may be seen at the Engineer's office of the New York and Erie Railroad.

PLUSHES

FOR

Railway Cars & Omnibuses.

F. S. & S. A. MARTINE,
112 WILLIAM ST., NEAR JOHN.

ARE now receiving a large and complete assortment of Plain and Figured PLUSHES, of their own importation, which will be sold at the lowest market price, viz: Crimson, Maroon, Scarlet, Green, Blue, Purple, etc.
ALSO—CURLED HAIR, the best manufactured in market.

To Railroad Companies, Machinists, Car Manufacturers, etc., etc.

CHARLES T. GILBERT,
NO. 80 BROAD ST., NEW YORK,

IS prepared to contract for furnishing at manufacturer's prices—
Railroad iron,
Locomotive Engines,
Passenger and Freight Cars,
Car Wheels and Axles,
Chairs and Spikes.

Orders are invited; and all inquiries in relation to any of the above articles will receive immediate attention

Manufacture of Patent Wire ROPE AND CABLES,

For Inclined Planes, Suspension Bridges, Standing Rigging, Mines, Cranes, Derrick, Tillers, &c., by
JOHN A. ROEBLING, Civil Engineer,
TRENTON, N. J.

FORGING.

Ranstead, Dearborn & Co.,
MANUFACTURERS OF

LOCOMOTIVE CRANKS AND CAR AXLES,
ALSO

WROUGHT IRON SHAFTING,
And All Kinds of Hammered Shapes.
Office 25 Foster's Wharf, Boston.

Samuel D. Willmott,
MERCHANT, AND MANUFACTURER OF
CAST STEEL WARRANTED SAWS,
—AND FILES—
IMPORTER OF THE
GENUINE WICKESLEY GRINDSTONES
NO. 8 LIBERTY STREET,
NEW YORK.

Railroad Instruments.

THEODOLITES, TRANSIT COMPASSES, and Levels, with Fraunhoffer's Munich Glasses, Surveyor's Compasses, Chains, Drawing Instruments, Barometers, etc., all of the best quality and workmanship, for sale at unusually low prices, by
E. & G. W. BLUNT,
No. 179 Water St., cor. Burling Slip.
New York, May 19, 1849.

IRON.**Iron.**

Pig Iron, Anthracite and Charcoal; Boiler and Flue Iron, Spring and Blistered Steel, Nail Rods, Best Refined Bar Iron, Railroad Iron, Car Axles, Nails, Stove Castings, Cast Iron Pipes of all sizes, Railway Chairs of approved patterns for sale by
COLEMAN, KELTON & CAMPBELL,
109 N. Water St., Philadelphia.

Iron Store.

THE Subscribers, having the selling agency of the following named Rolling Mills, viz: Norristown, Rough and Ready, Kensington, Triadelphia, Pottsgrove and Thorndale, can supply Railroad Companies, Merchants and others, at the wholesale mill prices for bars of all sizes, sheets cut to order as large as 58 in. diameter; Railroad Iron, domestic and foreign; Locomotive tire welded to given size; Chairs and Spikes; Iron for shafting, locomotive and general machinery purposes; Cast, Shear, Blister and Spring Steel; Boiler rivets; Copper; Pig Iron, etc., etc.

MORRIS, JONES & CO.,
Iron Merchants,
Schuylkill 7th and Market Sts., Philadelphia.
August 16, 1849. 1y33

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. **J. F. WINSLOW, President**

Troy, N. Y.
ERASTUS CORNING, Albany;
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md

November 6, 1848.

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phoenix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehanna river; which two establishments are now turning out upwards of 1800 tons of finished rails per month.

Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.

REEVES, BUCK & CO.
45 North Water St. Philadelphia.

March 15, 1849.

LAP—WELDED WROUGHT IRON TUBES

FOR

TUBULAR BOILERS,

FROM ONE AND A QUARTER TO SEVEN INCHES IN DIAMETER.

THE ONLY Tubes of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER & SON, Patentees,
25 Platt street, New York.

Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron.

THOMAS B. SANDS & CO.,
73 New street,
New York.

February 3, 1849.

Glendon Refined Iron.

Round Iron, Band Iron, Hoop Iron,
Square " Flat " Scroll "
Axles, Locomotive Tyres,

Manufactured at the Glendon Mills, East Boston, for sale by
GEORGE GARDNER & CO.,
5 Liberty Square, Boston, Mass.

Sept. 15, 1849. 3m37

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for rail roads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.

JOHN F. WINSLOW, Agent.
Albany Iron and Nail Works, Troy, N. Y.
The above Spikes may be had at factory prices, of Erastus Corning & Co. Albany; Merrill & Co., New York; E. Pratt & Co., Baltimore, Md

AMERICAN PIG IRON.

"POUGHKEEPSIE" brand, Dutchess Co., N. Y.
"GLENDON" brand, Lehigh county, Pa.
Orders for the above two well known brands will be received, and promptly executed, by

J. & L. TUCKERMAN,
69 West St., New York.

Faggotted Car and Engine Axles

FORGED by **RANSTEAD, DEARBORN & Co.,**
Boston, Mass.
These Axles enjoy the highest reputation for excellence, and are all warranted.

Bowling Iron. Stamped B.O.

Railway Tire Bars Rivet Iron
Locomotive and other Axles Locomotive Frame do
Boller Plates Bars,
and every other description of this superior Iron.

The subscribers, agents for the sale of Bowling Iron, are prepared to execute orders for importation, especially for railway and machinery uses, with despatch from the manufacturers.

RAYMOND & FULLERTON, 45 Cliff st.

**Ibbotson, Brothers & Co's
CELEBRATED CAST STEEL**

Best Cast Steel Royal Improved Files, well known as better adapted for Engineers' and Machinists' purposes than any now in use in the United States.

Every description of Square, Octagon, Flat and Round Cast Steel, Sheet, Shovel and Railway Spring Steel, etc., and Steel to order for any purposes—manufactured at their works in Sheffield—and universally known by the old stamp "Globe."

HENRY I. IBBOTSON, Agent,
218 Pearl st., New York.

**Smith & Tyson,
IRON COMMISSION MERCHANTS,
BALTIMORE.**

REFINED Junlata Charcoal Billet Iron for Wire. Do. for Bridging, of great strength.

Flat Rock, Boller and Flue Iron, rolled to pattern. Elba, Wheel Iron of great strength and superior chilling properties. Elba Forge Iron, American Shot Iron, Cut Nails, Spikes and Brads, Nail and Spike rods, Railroad Spikes of superior quality, Wrought Chair plates of any pattern, punched or plain.

**WILLIAM JESSOP & SONS'
CELEBRATED CAST-STEEL.**

The subscribers have on hand, and are constantly receiving from their manufactory,

PARK WORKS, SHEFFIELD,

Double Refined Cast Steel—square, flat and octagon. Best warranted Cast Steel—square, flat and octagon. Best double and single Shear Steel—warranted. Machinery Steel—round.

Best and 2d gy. Sheet Steel—for saws and other purposes.

German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.

Genuine "Sykes," L Blister Steel.

Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by

WM. JESSOP & SONS,
91 John street, New York.

Also by their Agents—

Curtis & Hand, 47 Commerce street, Philadelphia.

Alex'r Fullerton & Co., 119 Milk street, Boston.

Stickney & Beatty, South Charles street, Baltimore.

May 6, 1848.

Railroad Iron.

B. O. Railway Tires, Railway Wheels,
Scotch Pig Iron, Tin Plates and Banca Tin,
Muntz Patent Metal Sheathing,
Baltimore Copper.

Contracts for Rails made on behalf of the manufacturers, for delivery at any ports in the United States, at fixed prices.

Bowling Tires and Tire Bars and Scotch Pigs imported to order.

Muntz's Ship-sheathing, and a general stock of Tin Plates and Banca Tin in store, and for sale by

RAYMOND & FULLERTON, 45 Cliff st.

IRONDALE PIG METAL, MANUFACTURED
and for sale by the Bloomsburg Railroad Iron Co.

LINDLEY FISHER, Treasurer.

75 N. Water St., Philadelphia.

Car Wheel Iron.

THE celebrated cold blast "Conowings" Pig Iron, for Railroad Wheels, Chilled Rolls, etc., for sale by

E. PRATT & BROTHER,
Baltimore, Md.

Railroad Iron.

3,000 TONS C. L. MAKE 63½ lbs. per yard, now landing and to arrive.

Also contracts made for future delivery of above superior make English Iron.

300 Tons Banks Best Iron, Round, Square and Flat.
200 " English Bar " " "

10 " 9-16 Square Iron for Railroad Spikes.
For sale in lots to suit purchasers by

DAVID W. WETMORE.

New York, March 26, 1850.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

**JOHNSON, CAMELL & Co's
Celebrated Cast Steel,**

AND
ENGINEERING AND MACHINE FILES,
which for quality and adaptation to mechanical uses, have been proved superior to any in the United States. Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cyclops Steel Works Sheffield.

JOHNSON, CAMELL & CO.,
100 William St., New York.

November 23 1849.

Bowling Tire Bars.

40 Best Flange Bars 5½x2 inches, 11 feet long.
40 " " 5½x2 " 7 feet 8 in. long.
40 " Flat " 6x2 " 11 feet long.
40 " " 6x2 " 7 feet 8 in. long.

Now in store and for sale by

RAYMOND & FULLERTON,
45 Cliff street.

**Wheel, Forge and Foundry
Iron.**

LOCUST GROVE Wheel Iron of great strength and superior chilling property.

Balt. Charcoal Forge Iron, from Patuxent, Curtis Creek and Gunpowder furnaces.

Elkridge Foundry Iron, of superior strength and softness. Anthracite and Charcoal Iron from Pennsylvania and Virginia. Gas and Water Pipes, Lamp Posts from Elkridge furnace.

LEMMON & GLENN,
62 Buchanan's Wharf, Baltimore.

Sm9

Railroad Iron.

1650 Tons, weighing about 61 lbs. per yard, 40 tons, weighing about 52 lbs. per yard, and 825 tons, weighing about 53½ lbs. per yard, of the latest and most approved patterns of T rail, for sale by

BOORMAN, JOHNSTON & CO.,
119 Greenwich street.

New York, Aug. 26, 1850.

N.B.—B. J. & Co are also prepared to take contracts for English rails, delivered in any of the Atlantic ports of the United States.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract to deliver Rails of superior quality, and of any size or pattern, to any ports of discharge in the United States.

COLLINS, VOSE & CO.,
74 South St.

New York, June 1, 1850.

Tredegar Iron Works.

ROLLING MILL FOUNDRY AND MACHINE SHOPS. The undersigned continues to manufacture at his Works in this city (from best charcoal metal) Bar Iron of every description, embracing—Rounds and Squares, from ½ to 5 inches diameter. Flats, from ½ to 7 inches, all thicknesses.

Bands and Scrolls, all sizes. Boiler plate and Plough Iron. Railroad and Locomotive Axles and Tires. Locomotive Frames, Spikes and Plates. Hoops, Ovals, Half Ovals, Half Rounds, Angle, T, L, and indeed every description of Iron usually manufactured, all of which he warrants to be equal to any made in this country. He also manufactures at his Foundry and Machine Shops all descriptions of Railroad Work, say, Locomotives, Railroad Wheels and Axles complete and ready for the road, Railroad Chairs, etc. Also, Marine and Stationary Engines all sizes, Sugar mills and Engines, Horse mills, and every kind of Machinery usually required for the operations of the country. He has paid particular attention to getting up machinery, etc., for Gold Mine operations, and those in want of such work might find it to their advantage to give him a call.

J. R. ANDERSON.
Richmond, Va., Sept. 10, 1850.

CUT NAILS OF BEST QUALITY, BAR IRON (including Flat Rails) manufactured and for sale by
FISHER, MORGAN & CO.,
75 N. Water St., Philadelphia.

Car Wheel Iron.

100 Tons "Columbia" No. 2 Cold Blast Charcoal Iron.

300 Tons "Salisbury" No. 1, do. do.
For sale by CHARLES T. GILBERT,
No. 80 Broad st.

New York, Sept. 21, 1850.

Railroad Spikes.

THE subscribers are prepared to make and execute contracts for Railroad Spikes of a superior quality, manufactured by the New Jersey Iron Company, at Boonton.

DUDLEY B. FULLER & CO.,
139 Greenwich st. corner of Cedar.

**S. S. Keyser & Co.,
IRON WAREHOUSE,**

Corner of South and Pratt Streets,
BALTIMORE, MD.

Selling Agents for the Rough and Ready Bar Iron and Elk Boiler and Flue Iron Rolling Mills, Sarah and Taylor Furnaces, and Wrightsville Hollow Ware Foundry, and Dealers in Bar and Sheet Iron, and Cast, Sheer, German, Blister, Spring and Electrodes Steel, etc., etc.

Tubes.

The undersigned are in direct communication with the Birmingham Patent Lap Welded Iron Tube Company, for the sale of their very excellent and superior Boiler and Gas Tubes in large or small quantities.—These Tubes are sold very extensively in England and on the continent of Europe are sold exclusively by

WM. BIRD & CO.,
Iron and Tinplate Merchants,
44 Wall st., New York
5 Martin's Lane, City, London,
and 140 Buchanan st., Glasgow.

Railroad Spikes, Boiler Rivets, etc.

THE Subscribers, Agents for the sale of James S. Spencer's, Jr., Railroad and Boat Spikes, Boiler Rivets, and Wrought Iron Chairs for Railroads, made at his Works near this city, will execute all orders with promptness, despatch, and of the best quality.

ALSO IMPORTERS of English refined and Merchant bar Iron; Extra refined Car and Locomotive Axles (from 3½ to 6½ inches in diameter); B. O. Locomotive Tire (welded by Baldwin). Also, supply Boiler and Flue Iron cut to pattern or otherwise.—Spring, Shear, and Cast Steel, etc., etc., etc.

T. & E. GEORGE.

Philadelphia, November 14, 1850.

Railroad Iron.

THE UNDERSIGNED, HAVING made arrangements abroad, are prepared to contract for the delivery of Foreign rails, of approved brands upon the most favorable terms.

They will also make contracts for American rails, made at their Trenton works, from Andover Iron, in whole or in part, as may be agreed upon.

They are prepared to furnish Telegraph, Spring and Market Wire; Braziers and Wire Rods; Rivets and Merchant Bars to order, all made exclusively from Andover Iron. The attention of parties who require iron of the very best quality for special purposes, is respectfully invited.

COOPER & HEWITT,
17 Burling Slip, New York.

February 15, 1850.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract for the delivery of English, Welsh and Scotch Rails, of any pattern and weight, also for every description of English, Welsh, Scotch, and Swedish Iron, Railway Chairs and Spikes, Rivets, Bolts, Nuts, Washers, Chain Cables, Anchors, Tin Plates, German Spelter, Iron Castings, and every description of Machinery.

WILLIAM BIRD & CO.,
Iron and Tin Plate Merchants,
44 Wall st., New York.

And at 5 Martin's Lane, City, London,
and 140 Buchanan st. Glasgow.

July 27th, 1850.

Railroad Iron.

THE "Montour Iron Company" is prepared to execute orders for Rails of the usual patterns and weights, and of any required length not exceeding 30 feet per rail. Apply at the office of the Company, No. 73 South 4th st., Philadelphia,

Or to the Agents,
CHOUTEAU, MERLE & SANFORD,
No. 51 New st., New York.
September, 1850.

Railway Iron.

THE Subscribers will contract to deliver, in the course of the ensuing Spring and Summer, the best English Rails, made by a particular specification, and of any pattern required.

DAVIS, BROOKS & CO.,

63 Broad st.

On hand for sale, English rails of 53 lbs. to the yard, made by particular specifications.
January 10, 1851. 2m

Railroad Iron for Sale.

THE Mansfield and Sandusky City Railroad Co. have on hand from twelve to fifteen hundred tons of American Flat Bar Railroad Iron, weighing 33 lbs. to the lineal yard, which they offer for sale at reasonable rates.

The iron has been in use about four years, and is sound and in good condition. It is 2½ by ½.

It will be ready for delivery at short intervals between the opening of navigation in the spring and the 1st September next.

For further particulars inquire at the office of the company at Sandusky City, Ohio.

C. G. FORBES, President.

December 24, 1850.

UNION WORKS,

North street, opposite the Railroad Depot,
BALTIMORE.

Poole & Hunt,

Manufacturers of Steam Engines and Mill Gearing, Machinists' Tools, and all kinds of heavy and light Machinery.

Also put up Arrangements of Wrought Iron Pipes for heating buildings and conveying steam or water. Castings of every kind furnished at short notice.

Every exertion will be made to insure the satisfaction of customers.

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,

No. 24 Commercial St. Boston.

August, 16, 1849.

6m33

Railroad Paint.

FOR depot buildings, bridges, burthen cars, wheels and axles, pipes, steam joints, fences, and every description of work requiring protection from the action of the elements. Price per barrel of 300 pounds, nine dollars.

Orders addressed to J. M. HALL, 36 South street, New York, will receive prompt attention.

March 18, 1851.

3m*

To Engineers and Ship Builders.

THE Advertiser is desirous of a situation in a respectable concern, he has acquired a practical knowledge of his business in the establishment of R. Napier, Esq., Glasgow, has since for several years had the management of the works of an extensive Steam Packet Co., for whom he designed and built some Iron Screw Ships, whose capabilities and performances give the highest satisfaction. While acquainted with all the most approved modes of construction of marine engines, he is prepared to submit original designs. In modelling and draughting he has had much and successful experience. Can produce the highest testimonials as to character and abilities from the first engineer on the Clyde.

Address ENGINEER, box 2315 lower postoffice.

Lawrence Scientific School, HARVARD UNIVERSITY,

CAMBRIDGE MASSACHUSETTS.

SPECIAL Students attend daily from 9 o'clock A. M. till 5 o'clock P. M., in the Laboratories, and under the direction of the following Professors:

Louis Agassiz, L.L.D., Professor of Geology and Zoology. Jeffreya Wyman, M.D., Professor of Comparative Anatomy and Physiology. Henry L. Eustis, A.M., Professor of Engineering. Eben Norton Horsford, Professor of Chemistry.

Instruction is also given by Prof. Peirce in Mathematics, Prof. Lovering in Physics, and the Messrs. Bond at the Astronomical Observatory.

All lectures delivered to under graduates of the College are free to members of the Scientific School.

For further information apply to

E. N. HORSFORD, Dean of the Faculty.

Boston Locomotive Works,

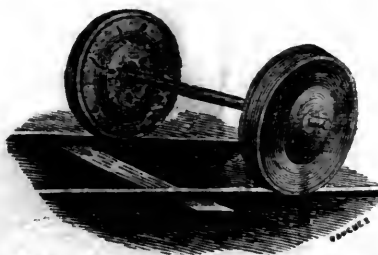
—Late Hinkley & Drury—

No. 380 Harrison Avenue,

BOSTON.

Locomotive and Stationary Steam Engines; Boilers; Iron, Brass, Copper and Composition Castings; Coppersmith's Work, and all kinds of Railroad Machinery furnished at short notice.

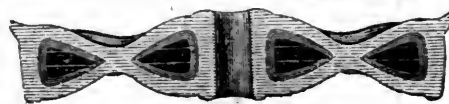
ALSO

**Van Kuran's Improved Railroad Wheel,**

Patented May 1, 1849. Manufactured under the personal superintendence of the Patentee, as above.

Orders for any quantity of wheels executed with dispatch, and wheels and axles fitted in the very best manner and at the lowest rates. Address

DANIEL F. CHILD, Treasurer, Boston.

**Providence Tool Co.,**

MANUFACTURERS OF

Plane Irons, Tooth Irons, Soft Moulding and Rabbet Irons, Cornice Irons, Plow Bits, and Planing Machine Knives:

NUTS, WASHERS AND BOLTS.

—ALSO—

PLATE HINGES AND PICK AXES.

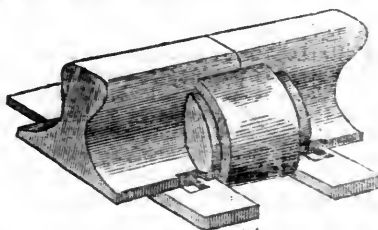
They are prepared to execute orders for all descriptions of Cold Punching and Job Work.

WM. FIELD, Agent. RUFUS WATERMAN, Treas.
PROVIDENCE, R. I.

Railroad Iron,

SPIKES, AND

WROUGHT IRON CHAIRS.



THE Undersigned, Agent for Manufacturers, is authorized to contract for Welsh Railroad Iron of the best quality, and deliverable at any port on favorable terms, also Spikes and Wrought Iron Chairs, made from the best iron, and of any pattern and weight. The new Wrought Iron Chair, with the introduction of a "Key," as per the annexed plan, will be found a great improvement on the old pattern.



Boiler Plates of superior quality, perfect regularity in the squaring and thickness, and made with great care.

Samples can be seen at the office, No. 20 Beaver st.
CHARLES ILLIUS.

TO RAILROAD COMPANIES, CAR MANUFACTURERS, etc.

THE Undersigned, hereby gives public notice, that the Commissioner of Patents, pursuant to his decision in relation thereto, on the 8th day of October, 1850, issued to him a Patent for the sole right to manufacture, and exclusive use of the INDIA RUBBER CAR SPRING, on account of priority of invention of said Spring.

F. M. RAY

New York, Oct. 23, 1850.

Iron Trade of Pennsylvania.

DOCUMENTS and Statistics relating to the Manufacture of Iron in the State of Pennsylvania—giving a history of the manufacture from its commencement to this date, illustrated by diagrams. Also tables giving the address and capacity of every establishment in the State. Prepared by direction of the late convention of the trade held in Philadelphia. For sale by

LINDSAY & BLACKISTON, Philadelphia.

FIELDING LUCAS, Jr., Baltimore.

HENRY G. NICHOLS, 79 Water st., N. Y.

or at this office—price \$1 00.

It will be sent by mail to any order enclosing the money, and post paid.

Ulster Iron.

THE ULSTER IRON WORKS, Saugerties, N. Y., continue in full operation. Orders for round, square, flat, band, hoop and scroll iron, will be received and promptly executed by

J. & L. TUCKERMAN,

69 West St., New York.

Patent Machine Picket Fence

SIX DIFFERENT STYLES of this fence are now made by patent machinery; and is by far the most economical fence for Railroads, Farms, Yards, etc., ever yet offered to the public, costing only from 4 to 30 cents per foot, according to pattern; and is so put up as to be shipped at a trifling expense. Full particulars will be furnished, by addressing the subscriber, to whom all orders should be sent.

N. STRATTON, Troy, N. Y.

Lovegrove's Patent Cast Iron Water and Gas Pipes.

THE Subscriber, the Inventor and Patentee of the Centrifugal mode of giving form to metallic substances while in a molten state, is preparing to make Cast Iron Water and Gas Pipes, of any dimensions, at prices much lower than they can be made in the old manner, and the pipes warranted to stand a pressure of three hundred pounds to the square inch, and to be soft enough to drill. Steam Engines and all kinds of machinery. Cast Iron Doors and Frames, and Mill Castings of every description, made to order.

THOMAS J. LOVEGROVE,

Machinist and Founder,

West Falls Avenue, below Pratt st., Baltimore.

American Railroad Iron.

1000 Tons, weighing 50 lbs. per yard, manufactured by Reeves, Abbott & Co., at the Safe Harbor Iron Works, and now lying in yard at Brooklyn, for sale by

CHOUTEAU, MERLE & SANFORD,

No. 51 New street.

Spikes, Spikes, Spikes.

ANY person wishing a simple and effective Spikes Machine, or a number of them, may be supplied by addressing

J. W. FLACK,

Troy, N. Y.

Railroad Iron.

2000 Tons, weighing 53 pounds per lineal yard, of the most approved pattern of T rails, in store and to arrive, for sale by

COLLINS, VOSE & CO.,

74 South St.

New York, June 1, 1850.

India-rubber for Railroad Cos.

RUBBER SPRINGS—Bearings and Puffer—Fowler's Patent—Hose from 1 to 12" diameter. Suction Hose, Steam Packing, from 1-16 to 2 in. thick. Rubber and Gutta Percha Bands. These articles are all warranted to give satisfaction, made under Tyer & Helm's patent, issued January, 1849. No lead used in the composition. Will stand much higher heat than that called "Goodyear's," and is in all respects better than any in use. Proprietors of railroads do not be overcharged by pretenders.

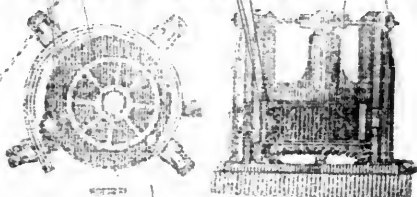
HORACE H. DAY,

Warehouse 23 Courtlandt street.

New York, May 21, 1849.

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve Iron works in and about the vicinity of Pittsburgh, also at Phoenixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll sounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y. P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery for making Spikes, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

CHILLED RAILROAD WHEELS.—THE UNDERSIGNED are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

Brown's Old Established SCALE WARE HOUSE,

NO. 234 WATER ST., NEW YORK.

THE Subscriber, Practical Manufacturer of Scales of every description, respectfully asks the attention of Railroad Companies to his Improved Wrought Iron Railroad Track and Depot Scales which for strength, durability, accuracy, convenience in weighing, and beauty of workmanship, are not surpassed by any others in this country.

He is aware that this is rather a bold assertion for him to make, yet he can say with confidence that they have but to be tried to give them precedence over all others.

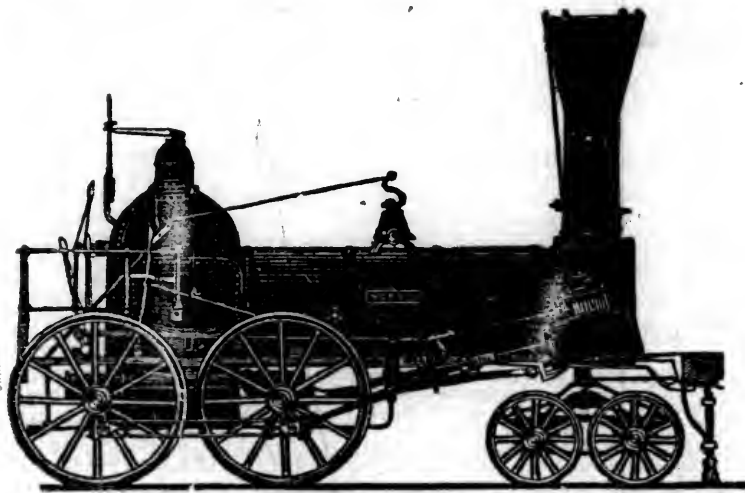
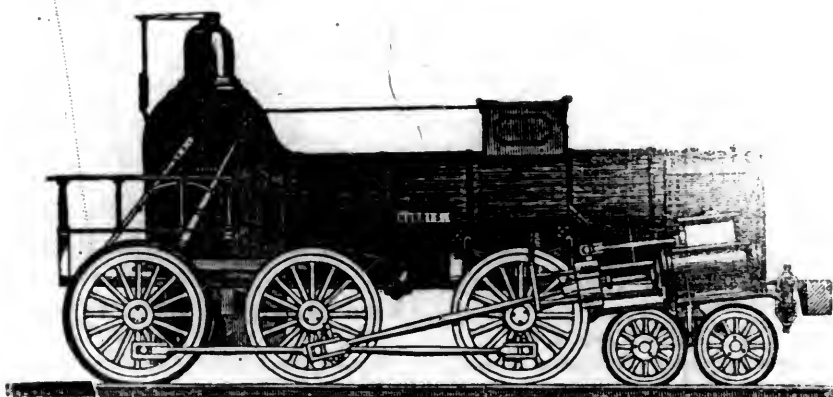
J. L. BROWN.

Bank Scales made to order, and all Scales of this make Warranted in every particular.

References given if required

NORRIS' LOCOMOTIVE WORKS.

BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,



THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size. Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tyres are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS

PATENT MACHINE MADE HORSE-SHOES.

The Troy Iron and Nail Factory have always on hand a general assortment of Horse Shoes, made from Refined American Iron.

Four sizes being made, it will be well for those ordering to remember that the size of the shoe increases as the numbers—No. 1 being the smallest.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

Etna Safety Fuse.

THIS superior article for igniting the charge in wet or dry blasting, made with DUPONT'S best powder, is kept for sale at the office and depot of

REYNOLDS & BROTHER,

Sole Manufacturers, 41

No. 85 Liberty St.

NEW YORK.

And in the principal cities and towns in the U. States.

The Premium of the AMERICAN INSTITUTE was awarded to the Etna Safety Fuse at the late Fair held in this city.

November 3, 1842.

ly

COLUMBUS, OHIO,

Railroad Car Manufactory. RIDGWAYS & KIMBALL,

HAVE established at this central point, the manufacture of Passenger, Freight, Gravel and Hand Cars for Railroads, and assure all Western Railroad Companies that it will be their constant aim to procure the best materials and workmen, and to turn out the best kind of work at fair prices. Specimens may be seen on the Columbus and Xenia Railroad. The patronage of Railroad Companies is respectfully solicited.

ly8

FOR SALE.

THREE LOCOMOTIVES, Manufactured by M. W. Baldwin, of 10 tons weight, all in complete repair, and now running on the Columbia and Philadelphia Railroad.

For particulars apply to A. L. Roumfort, Supt. of said road, either at Philadelphia, or Parkersburg, Chester county.

A. L. ROUMFORT,
Supt. Motive Power Col. & Philad. R.R.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 136 NASSAU ST., NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.

SECOND QUARTO SERIES, VOL. VII, No. 17!

SATURDAY, APRIL 26, 1851.

[WHOLE No. 784, VOL. XXIV.]

ASSISTANT EDITORS,

J. T. HODGE, *For Mining and Metallurgy.*
GEN. CHAS. T. JAMES, *For Manufactures and the
Mechanic Arts.*

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American Railroad Journal.

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For the American Railroad Journal.

Philadelphia and Norristown, Norristown and Lambertsville Railroads--Williamsport and Elmira Railroad, connecting Philadelphia with New York and Erie Railroad at Elmira, compared with another route to connect Philadelphia with the New York and Erie Railroad, etc.

Having noticed recently in your very excellent Journal that a railroad was in serious contemplation, and in the New York Tribune money article of the 9th inst., that it was now being pushed forward from Norristown via Doylestown to Lambertsville, New Jersey, where it is to connect with the Trenton and Belvidere railroad, which latter road is now in operation from Lambertsville to Trenton, and that it is proposed to extend the line to Somerville, where it will intersect the New Jersey railroad, making the distance by this route 103 miles from New York to Philadelphia, by which passengers can be carried for two dollars in about

four and a half hours, and that by this proposed line, Pottsville will be some 40 miles nearer to New York than by any other route, and when completed, coal can be taken from Pottsville to New York cheaper perhaps than by any other route.

And also in your Journal of the 5th inst. under the head "*Pennsylvania Railroad Route by Sunbury and Erie*," by which it appears that Mr. Walker, of the State Senate, has submitted a report in regard to the propriety of connecting, by a continuous line of railroad, the city of Philadelphia with Elmira on the line of the New York and Erie railroad, accompanied by important communications relative thereto from G. A. Nicolls, Esq., Superintendent of the Philadelphia and Reading railroad.

I propose to examine the foregoing as briefly as possible, and state some matters which may be of interest to the public generally, and suggest some changes which may strike the parties more immediately connected with the projects alluded to, as worthy of consideration before final locations are settled upon; the changes, however, more particularly apply to the Norristown railroad extension.

From the communications of Mr. Nicolls, alluded to, it would appear that there are several routes, either one of which is favorable and practicable to connect Philadelphia with the New York and Erie railroad at Elmira, in the State of New York, the shortest of which makes the distance between the two points 265 miles, and 18 miles less distance from Elmira to Philadelphia than from Elmira to New York, and requiring only some one and a quarter millions of dollars to make the connections between railroads now in operation to complete the chain.

From this it would appear natural for passengers in Western New York, Canada, etc., who may take the Erie railroad at Dunkirk, or reach the road at any intermediate point between Dunkirk and Elmira, and who wish to travel to Philadelphia, Baltimore, Washington and south, to leave the Erie road at Elmira, and thus save the time and expense of more than 100 miles extra travel over the route via New York city and across N. Jersey to Philadelphia—this looks reasonable.

The writer has before him a pamphlet entitled "The charter of the Williamsport and Elmira railroad company, with the several Acts of Assembly, etc.," "together with a message of the Governor of

Pennsylvania, and also containing a survey made in 1833 by Major Hartman Bache." And also a report of T. E. Sickels, Esq., engineer, published at Lancaster in 1850; for particular information therein contained, I beg to refer those interested to the pamphlet reports—but will make the following extract from Mr. Sickels' report:—

"A statement of the comparative distances by way of existing routes, and the route to be opened by the Williamsport and Elmira railroad between places having large intermediate travel, is as follows:—

From Geneva to Baltimore via New York to Philadelphia.....	535 miles.
From Geneva to Baltimore via Williamsport and Elmira railroad....	319 "
Difference in favor of route by Williamsport.....	216 "
From Utica to Baltimore via New York.....	427 "
From Utica to Baltimore via Williamsport and Elmira railroad....	427 "
From Elmira to New York via New York and Erie railroad.....	283 "
From Elmira to Philadelphia via Williamsport and Elmira railroad.	279 "
From Elmira to Baltimore via Williamsport and Elmira railroad....	257 "

"Between Geneva and Baltimore, which are points common to both lines from Western New York to Washington, the distance at present traversed over is greater by two hundred and sixteen miles than by the route passing through Williamsport."

"Considering the direct economy of money, and the not less important economy of time, which would attract to the Williamsport and Elmira railroad, the great through passenger business from Western New York, the lakes and Niagara Falls to Washington and the Southern Atlantic States, it cannot be considered as claiming too much for this railroad to rank it among the most important projects in this country."

"The railroads now in operation, and those being constructed on this line, are not excelled for ease and comfort to travellers; and to the advantage already stated as favoring the route via Williamsport and Elmira railroad, which may be assumed equal to five dollars in money and ten hours in time for each passenger, there may be added unsurpassed comfort in travelling, and a transit thro' a region of country of the most attractive character.

"From Utica to Baltimore the distance is the same via the Hudson river or via Williamsport.—The southern travel, therefore, from between Utica and Geneva is due to the Williamsport and Elmira railroad in addition to that of the region west of the latter place."

It will be seen by this extract, that it is expected and believed that after the completion of the Williamsport and Elmira railroad, and such other links as may be necessary to form a continuous line to Philadelphia, that it will attract and divert the travel from Western New York, the lakes and Niagara Falls, to Philadelphia and the south.

And it will also be observed that the distance given by Mr. Sickels from Elmira to Philadelphia by the present route is 279 miles.

Let us see how this can be improved.

It is known, [but not very extensively,] that the Ligett's Gap railroad, which will connect the village of Scranton, in the Lackawanna coal valley with the New York and Erie railroad at Great Bend, is now being built, and near its completion, the track is now being laid, Erie gauge, the line and grades favorable, and the road is being constructed in the best manner. The leading business of this road will be to supply Western New York, the Canadas, and the steamers on the lakes with anthracite coal; it will also afford valuable and cheap facilities for supplying the north and west with iron from this section of Pennsylvania.

Scranton is the seat of very extensive, and perhaps one of the most interesting iron works in our country. It contains now between 2,000 and 3,000 inhabitants—the company owning the town and the works, connected with which they have several thousand acres of the finest located coal and iron lands, are largely interested in the Ligett's Gap railroad, and they are also interested in the Cayuga and Susquehanna railroad, in New York, which road connects Owego, on the Erie railroad, with Cayuga Lake, at Ithaca. The latter place is connected by a line of steamers with the Central railroad through New York; the distance between Owego and Great Bend via Erie road is 36 miles.

I understand a contract has been made between these companies and the Erie railroad company to transport their coal and other merchandise in the cars of the Ligett's Gap company, between Great Bend and the Cayuga and Susquehanna railroad at Owego, and also other points along the line of the Erie railroad, their roads being all the same gauge.

The same parties interested in the Cayuga and Susquehanna and Ligett's Gap railroads, with the addition of some of their friends, subscribed recently for the entire stock of the Delaware and Cobb's Gap railroad, which is to connect the Ligett's Gap railroad at Scranton with the Morris and Essex, New Jersey Central, and Trenton and Belvidere railroads at some point at or near Belvidere, New Jersey. From the acquaintance I have with the managers of the Iron Works at Scranton, and the character, ability and reputation of all the gentlemen interested with them, I am warranted in saying that there is not a doubt but that the Delaware and Cobb's Gap railroad will be commenced and completed at an early day; this being so it ensures the extension of the Morris and Essex road from Dover to Belvidere, about 30 miles, and a branch from the New Jersey Central, from New Hampton to Belvidere, about 13 miles, the extension of the Trenton and Belvidere road from Lambertville to Belvidere, about 45 miles.

The change I would propose for the interest of

the city of Philadelphia and the Norristown railroad, would be to run their proposed extension from Norristown to a point ten miles below Easton at Johnson's or Durham's Ferry, which would not lengthen their line, in order to reach the Trenton and Belvidere railroad more than about four miles over the route to Lambertville, and they would thus strike this latter road at a point about 22 miles higher up the Delaware, and make a saving of 20 miles in distance between Belvidere or Easton and Philadelphia, over the route via Trenton to Philadelphia, and if they wished to connect with the New Jersey Central before reaching Easton, (their terminus) a short branch can be constructed from Reiglesville to near Asbury, New Jersey, about ten miles, and thus save about twelve miles over the route via Easton, and not make the distance between New York and Philadelphia by this route over about eleven miles further than by the now proposed route from Lambertville to Somerville, by which the passengers alluded to can still be carried for two dollars in about four and a half hours from New York to Philadelphia.

The country from Johnson's Ferry to Norristown is very fine and productive, and feasible for a railroad.

By an examination of the map it will be seen the Delaware river makes at Johnson's or Durham's Ferry a great detour to the left in running towards Trenton, and then to the right in reaching Philadelphia; place a rule on the map between this Ferry and Philadelphia via Norristown, and it will show a very direct line, and cut off more than twenty miles over the route via Trenton to Philadelphia.

With this proposed change the matter would stand thus:

From Elmira to Ligett's Gap railroad at	
Great Bend is.....	72 miles.
" Great Bend to Scranton is.....	47½ "
" Scranton to Delaware Water	
Gap is.....	46 "
" Delaware Water Gap to Belvi-	
dere is.....	13 "
" Belvidere to Easton is.....	12 "
" Easton to Johnson's or Durham's	
Ferry is.....	10 "
" Johnson's Ferry to Norristown is	31 "
" Norristown to Philadelphia....	17 "
	248½ miles.

Which is a saving of 30½ miles over the Williamsport and Elmira routes. The distances here given are known to be correct, except the Delaware and Cobb's Gap, to which I have added one mile more than the company expect to find it. It is believed that the railroad will not exceed in length the present travelled road, which is 45 miles.

The idea of carrying coal from the mines in the vicinity of Pottsville via Reading railroad to Norristown, and from thence to Lambertville and across New Jersey to New York or Elizabethtown Point, (after the completion of the Delaware and Cobb's Gap and Central railroads) as shadowed forth in the Tribune article, is preposterous; the distance from the Pottsville mines to Elizabethtown Point by this route would be about 158 miles. The distance from the Lackawanna mines via Cobb's Gap and New Jersey Central to same point, will be about 125 miles, with at least equally favorable grades; and the coal miners, operators or dealers can make as much money in selling and delivering coal into cars at their mines in the Lackawanna at seventy-five cents per ton as the operators and dealers in the Schuylkill can at one dollar and fifty cents per ton; here is a difference of seventy-five

cents per ton to start with, and about thirty miles less distance to transport it to the same point.

The prices paid for mining in the Lackawanna and Wyoming valleys rang from 35 cents to 45 cents per ton—the miner finding his own tools, powder, and oil. The coal veins are easy of access, and entered mostly from the Lackawanna river or from streams or rivers running across the valley, by horizontal gangways or drivings: the road ways thus forming the drain, consequently the outlay of capital and the expense of deep vertical shafts or slopes requiring steam or water power to free the mines from water and raise the coal to the surface, is avoided.

I am informed that the Delaware and Hudson company do not use a steam engine in all their large mining operations at Carbondale.

At the iron works at Scranton a year since, I learned that they were consuming from 150 to 175 tons of coal per day, which was mined and delivered at the furnaces and rolling mills by contract for fifty three cents per ton all told.

Any one familiar with the mining operations of the Lackawanna and Schuylkill regions, will readily grant a large difference in the cost of delivering coal into cars in favor of the former; the Schuylkill region is well off, and always will be, with a perpetual market at the south which belongs to her; Lackawanna seeks New York, and the eastern and northern market—this belongs to her; coal delivered at Elizabethtown Point is virtually in New York.

If coal can be carried on the Reading railroad for one and a half cents per ton per mile, it can be done on other roads with equally good grades, and with coal in the cars at the Lackawanna mines at 75 cents per ton, and with 125 miles of railroad to pass over at a cost of 1½ cents per ton per mile, the actual cost of the article on the sea board, any one who has sufficient curiosity can figure out.

I have made this digression with no other motive than to do simple justice and correct any erroneous impressions which the article in the Tribune, or others similar, might unintentionally create.

The idea of extending the Norristown railroad to Johnson's Ferry, and connecting there with the Trenton and Belvidere road, has had a place in my mind long before I ever heard it suggested, and I had intended to have brought it to the notice of those interested (provided no one else did) at the proper time, which I supposed would be when the Delaware and Cobb's Gap road was commenced: but it appears that the Norristown railroad company are about preparing to extend their road to Lambertville, hence I take the liberty now to show whatever of importance there may be by the proposed change, both to the city of Philadelphia and the Norristown railroad.

Time and money seem to be uppermost in the minds of the travelling world, and if it is reasonable to suppose passengers destined south, would leave the Erie road at Elmira, for Philadelphia, etc., via Williamsport and Elmira route, to save time and money, then the same reasons would apply to those passengers with increased force, for continuing on the Erie railroad 72 miles further down to Great Bend, and thereby gain a further saving, as hereby shown, of 30½ miles, or one and a half hour's time and a half dollar or more expenses.

It will be observed that in running down this distance of 72 miles from Elmira, a large extent of country (perhaps the finest part of the State of New York) is swept, to gather additional trade and travel before diverging from the Erie railroad. At

Owego, 36 miles from Elmira, we pass the Cayuga and Susquehanna railroad, forming a line of 70 miles railroad and steamboat communication to connect with the Northern railroad.

A company is now formed and means being provided, to build a road from Syracuse to Binghamton, a distance of about 70 miles: very little doubt is entertained in regard to the early completion of this road, which when done will form a continuous line of railroad between Binghamton and Oswego on Lake Ontario.

Another project has recently been brought to notice: to connect Albany with Binghamton, or the Ligett's Gap railroad, at Great Bend—distance about 125 miles—country very feasible, and grade moderate; this project has many friends, among whom are a large number of very influential and wealthy gentlemen of Albany; it is believed that this road will be soon commenced and completed, if so, the Ligett's Gap railroad will be connected with a continuous line of railroad from Great Bend to Boston.

A charter has just been obtained for a railroad to connect Wilkesbarre with the Ligett's Gap railroad at Scranton, 17 miles, which is certain to be built; this road will bring out the trade and travel of the far-famed Wyoming valley, and give them a nearer route to Philadelphia than any other that can ever be built.

At or near the Delaware Water Gap, this great line will be connected again with the New York and Erie railroad, 145 miles below Great Bend, with the Newburgh branch at Chester; distance from Chester to the Water Gap about 56 miles; the means are now being provided, with every assurance of success, and before this latter road is completed, Newburgh will be connected with the Midland railroad, from Fishkill to Hartford and Boston, and with the Trenton and Belvidere constructed to Johnson's Ferry, there to connect with the Norristown extension, it will be seen that Boston and Philadelphia would be connected by nearly an air line railroad.

It cannot be doubted that here are great and important projects now in progress of construction, and being provided for, every one of which is feasible and practical and quite certain to be completed; full of promise, as investments of more than ordinary interest; each one will have, in addition to their ordinary business, a large tonnage of coal from the great coal fields of the Lackawanna and Wyoming valleys.

Now, with these long lines of railroads, connecting the east, west and north, with this (middle line) Ligett's Gap, Delaware and Cobb's Gap, Belvidere and Trenton, etc., and the New Jersey roads herein alluded to, can it fail to strike the city of Philadelphia and the Norristown railroad interest, as being of the highest importance to change the point of connection from Lambertsville to Johnson's Ferry?

With the foregoing faintly described outline of great public improvements, and all matters of interest therewith connected—with the distances, etc., given, I leave the subject for the examination of those better able to judge of the importance or value of the suggestions.

A perfect railroad mania seems to have seized upon the people of the United States—projects are springing up almost daily all over the country, a vast amount of capital is being absorbed in constructing the various lines now building: when money to go on with cannot be raised on stock subscription, the roads are mortgaged, and if this is

not sufficient, towns, counties and cities are mortgaged to raise means: the immense value of these roads to our country cannot be over estimated; but nevertheless we may go too fast; the greatest danger lies in constructing roads prematurely, that in times of great depression will not pay. No fear need be apprehended in constructing *sure* paying roads. Such (in the opinion of those best competent to judge) will be the Ligett's Gap, Delaware and Cobb's Gap, and lines connecting therewith herein alluded to; they are mostly old and long contemplated projects, and nearly all partly built, and all depending more or less on a coal trade, which is the surest and most reliable basis for a safe investment of capital in railroads that can be presented; the coal trade must continue to increase in pro rata proportion, at least, with the increase of the population of our country forever.

As projects for public improvement are brought forward, let common sense and prudence decide whether they will yet pay, for if they are not sure to pay in hard times, had they not better be deferred until the business to be done will ensure success.

If our government would allow the iron for these roads to be made in our own country, whereby our people could have the advantage of trade and *dicker* among themselves, we could thus save our specie, and go on faster and safer, but under the present state of things our only safety seems to be in the amount of production from the mines of California; how long this will sustain our present rapid movements, the future only will demonstrate.

PENNSYLVANIA.

Mississippi and Ohio Railroad.

On Monday the 31st ult., the City Council of St. Louis unanimously passed an ordinance for subscribing \$500,000 to the above named road. The act of the Legislature, authorizing the city to subscribe, specifies the road as commencing at Illinois town, on the Mississippi river, and running thence to the east line of the State of Illinois, in the direction of the city of Vincennes.

In connection with the above the Vincennes Gazette states that Mr. Gest with a corps of engineers "have been for some days past, here and in this vicinity, examining the route of the Ohio and Mississippi Railroad. We understand that they will continue the survey westward to St. Louis.

The route from Cincinnati to the Wabash, is reported to present fewer obstacles, and to combine greater advantages, than the most sanguine friends of the enterprise had anticipated. The citizens all along the line, express a determination to aid the enterprise to the utmost of their ability.

The organization of the Western Branch meets with universal approbation, and the company seem to have made a most happy selection of officers. The city of St. Louis has subscribed her half million of stock, and we suppose the work will be prosecuted with all possible speed.

Virginia.

The North Western Railroad.—We are indebted to a member of the Virginia Legislature—which body adjourned *sine die* on Monday—for the annexed copy of the law passed at the recent session, incorporating the North Western railroad company. This law, it will be seen, authorizes the construction of a railroad from a point on the Baltimore and Ohio railroad at or near Three Forks, in Taylor county, to the town of Parkersburg, on the Ohio river. It was enacted at the instance of that portion of the people of Virginia residing in the counties through which the road is expected to run, and in order to afford them the benefits of an easy and rapid intercourse with the seaboard and the

Ohio river, from both of which they were debarred by the legislation which restricted the Baltimore road, exclusively to Wheeling as its western terminus. The charter covers the whole ground of the 'right of way,' which in years gone by was so earnestly prayed for by the Baltimore company, and so steadily refused by the Virginia Legislature. We take it for granted, now that this important chartered privilege has been secured, that the people of Virginia will adopt prompt and decided measures to give the act vitality, and the great enterprise which it is designed to create, an early and sure impetus to completion. The line of road comprehends a prominent link in the chain of the great 'bee line' railroad; which, commencing at Baltimore, will run through Parkersburgh, Belpre, Chillicothe, Cincinnati and Vincennes, to St. Louis. It will form the shortest and quickest route between Baltimore, Cincinnati and St. Louis, and will command the travel and trade of the West to its utmost capacity.—*Baltimore American.*

Erie Canal.

We give below a portion of the late annual report of the State Engineer on the New York canals, which possesses an uncommon interest in connection with the question of the enlargement, now the engrossing topic in this State. The report is got up in the best style, and is illustrated by plans of the routes, and profiles of the various divisions of the Erie canal, and gives in a perspicuous form, a view of the present condition of this great work, the progress that has been made in the work of enlargement; and as it was well known that the subject of the enlargement would be the leading topic for the consideration of our legislature at its last session, a large portion of the report is taken up with a discussion of the utility of the proposed measure. As Mr. Seymour is an engineer of the most acknowledged ability, and as his views are known to possess great weight where he is known; and as his report may be taken as presenting the strongest evidence that exists in favor of the proposed enlargement, we have given the better part of it. The subject of this discussion is a most interesting one in every point of view, not only in reference to the relative and absolute capacities of the canal and railroads for cheap transportation, but from the intimate connection of the former with the public works, and the general interests, of the whole country.

The Erie canal has contributed vastly more toward the progress and wealth of this country than any other work having a similar object. Over it passes annually produce and merchandise of the value of \$150,000,000. Up to the present year it has been the only practicable route for the transit of these immense values. So strikingly is its importance and utility felt by every person, that we all look upon it as an integral part of our greatness, equally with the Mississippi river and the great lakes. Without it our condition as a nation would have been a very different one, and our absolute greatness at home, and our relative importance in comparison with other nations would have been much less flattering to our vanity.—Through this channel, a very large proportion of our people obtain many of the most important articles of food, and in return it is the great outlet for the products of our manufactures and commerce. It supplies no small part of what makes up the basis of our foreign commerce. It is the great artery in our system, through which circulates the life blood that gives health and strength to the whole.

To show what facilities the canal affords for cheap transportation, we would state, that railroad iron, for instance, can be transported from New

York to Toledo, Ohio, a distance of nearly 800 miles, for about one-half a cent per ton per mile, or a little over \$1 per net ton. Contracts have been made in this city within a day or two, to deliver rails in Lafayette, La., for \$6 90 per ton. Lafayette is 230 miles from Toledo. A very large amount of iron for the railroads in Ohio, Indiana, Illinois, Michigan and Wisconsin, will go by way of the Erie canal. This is fast becoming the favorite route; and we think that very little, if any, now ordered for the next year for the above States, will go by way of New Orleans. With the enlargement, almost the entire amount of the produce of the above States would take the same route to a market.

The report, after enumerating the great results which the canal has already achieved and the necessity of a further enlargement to meet the increased volume of business now thrown upon it, goes on to say:—

The commissioners, in their report of 1834, show that the full capacity of a lock, at that time, was equal to 20,000 lockages each season. After that the valves of gates were enlarged and increased so as to admit water as rapidly as the safety of boats would admit. By this means, and when everything is kept in good order, locks can pass 26,000 boats, and we will admit (what I believe will be often impossible) that double locks will pass 52,000 boats in one season. The capacity of boats, as now constructed, is for the canal 4 feet deep, 80 tons (see Mr. Olmstead's statement of comparative size of boats) and the average loads each way cannot exceed 50 tons, as the proportion of down is to up freight as 4 to 1. The average load of boats on the enlarged canal will be 224 tons, and the average loads both ways 140 tons. This datum determines the utmost capacity of the old canal with single locks to be 26,000 x 50, equal to a movement of 1,300,000 tons, and of the old canal with double locks to be 52,000 x 50, equal to 2,600,000 tons, and of the enlarged canal 52,000 x 140 is 7,280,000 tons. This estimate is, however, too large, by reason of the unequal amount of trade at different seasons of the year. By an examination of business done, it will be seen that had the locks not been doubled, the business of the year 1845 (only three years after they were doubled) could not have been accomplished.

The past year, the movement at the eastern end of the canal was 2,452,233 tons. The preceding calculation shows that the utmost capacity of the present canal is 2,600,000. It is no doubt true, therefore, that the full capacity of the canal is already reached, and a further increase of capacity is demanded by good policy. I have no doubt that if a demand be made for the taking and delivery at tide water of about the above quantity of 2,600,000 tons, it can be got through; but such a demand will certainly increase the rate of charges, and this increase will, as it did last fall, drive trade to other avenues. A further increase in the capacity of boats can now be made by strengthening them, as all the locks will be lengthened or enlarged next spring. The long boats will have a capacity of 60 tons average load, or of 96 tons maximum load. This will increase the capacity of the canal from 2,600,000 to 3,120,000 tons. This increase is obtained by an extra expense of about \$24,000, by a temporary lengthening of 3 old locks which are to go out of use when the enlargement shall be completed, and of 5 others which, in the enlarged canal, will have other locations. Beyond this, no further increase in the capacity of the canal can take place until all the locks are enlarged, and considerable sums expended in making a larger channel. It is not true that boats of the enlarged size cannot float upon the canal until the whole enlarged size is obtained; a widening of the channel, partial in many places, and of the locks above named, would permit boats of the enlarged size to pass over the canal, loaded so as to draw as much water as boats now do. The enlarged boats drawing 3½ feet of water will have a capacity for 120 tons and may carry 75 tons average load both ways. This would again increase the capacity of

the canal from 3,120,000 tons to 3,900,000 tons.—The necessity for this progressive enlargement is illustrated by the following statement of tonnage passing to and from tide water since 1836 up to the present year, and the estimated amounts to pass during the next 5 years:

Statement of tonnage from and to tide water, from 1836 to 1850, and estimated amounts during the next five years, with rate of increase.

	Going from tide water.	Arriving at tide water.	Total going from and arriving at tide water.
1836....	133,796	696,347	830,143
1837....	122,130	611,781	733,911
1838....	142,808	640,481	783,289
1839....	142,035	602,128	744,163
1840....	129,580	669,012	798,592
1841....	162,715	774,344	937,059
1842....	123,294	666,676	789,970
1843....	143,595	836,861	980,456
1844....	176,737	1,019,094	1,195,831
1845....	195,000	1,204,943	1,399,943
1846....	213,815	1,362,319	1,575,134
1847....	288,267	1,744,283	2,032,550
1848....	329,557	1,447,905	1,777,462
1849....	315,550	1,579,946	1,895,496
1850....	418,370	2,033,863	2,452,233
1851....	458,115	2,196,572	2,654,687
1852....	501,635	2,372,297	2,873,932
1853....	549,290	2,562,080	3,111,370
1854....	601,472	2,767,046	3,368,518
1855....	658,611	2,988,409	3,647,020

Rate of increase, going from tide water, 9½ per cent arriving at " 8 "

Note.—In order more fully to impress upon the mind the present magnitude of the canal trade, and the capacity of the canal when enlarged, let us imagine its business transferred to a railroad.

The tons arriving at tide water last year, were 2,033,863; all performed in the space of 226 days. A railroad operated six days in the week, will have 313 working days in a year. If the above business should be divided equally throughout the year, then the arrival at tide water would be 6,498 tons daily; average loads of 100 tons of freight per train, would require the arrival daily of 65 trains; equal to one train every twenty-two minutes throughout the twenty four hours. A railroad performing a large passenger and fast freight business, and having a double track with the usual turn-outs, could not I suppose, perform one-sixth of the above, as additional business, by slow trains, even admitting that the variations of trade at different seasons of the year could be increased loads, be accommodated by the number of trains stated. In other words, it will require six double track railroads, having other traffic from which to earn dividends, to perform the business of the Erie canal during the past year, and some eight or ten for the business which the enlargement can command. The above business would require an outfit of at least 10,000 cars and 400 engines, costing say \$9,000,000; and if confined to one road, would require the daily arrival of four and a half miles of trains to be unloaded, loaded and sent back, supposing that each train and each car should be fully loaded.

All the railroads now built and in process of construction, to connect Baltimore, Philadelphia, New York and Boston with the west, would be overburdened with business, if freights equal in amount to that of the Erie canal, should be thrown upon them.

The reasons in favor of an immediate enlargement, are in no way lessened by showing (if it can be shown, which I doubt) that the estimated business can be accommodated by such progress as can be made by the use of the yearly revenues, under a proper system having this progressive enlargement in view. Far more important reasons urge to the immediate completion of the enlargement, than the mere capacity to carry a given amount of freight. To secure cheap transport is, I apprehend, the great end and object in view in the construction of the enlargement. The policy would be apparent, if no greater movement were to be attained than during the past year. The Canal Commissioners, in their report of 1835 state that the reduction in the cost of transport would be, on the en-

largement, compared with the old canal, equal to fifty per cent. The average cost of transport on the old canal, with single locks, and before improvements in the capacity of boats, ranged from \$7 40 to \$6 30 per ton, through, or say \$6 85 per ton, or 1 9-10 cts. per ton per mile. The average rates of the last year varied during the season from \$4 44 to \$6 94 per ton of through freight, or an average for the season of \$5 69 per ton, or 1 56-100 cts. per ton per mile. Mr. Olmstead estimates the average rates of transport on the enlarged canal, at \$2 40 per ton through, or 6 7-10 mills per ton per mile; of which three mills will be tolls, and 3 7-10 mills, charges. Make the charge 4 mills, and the cost of transport on the enlargement will be 7 mills per ton per mile. The movement last year was equal to 415,676,000 tons moved one mile, and the cost of movement last year, as above stated, was 1 66-100 cts. per ton per mile, making the total charge for transport.....\$6,484,545 00 The cost, supposing the enlargement completed, would have been, at above estimate of 7 mills per ton per mile..... 2,909,732 00

Of which \$1,247,028 would have been State revenue; making a saving of transport on Erie canal, of, \$3,574,813 00

Had the above estimated rates ruled during the year, the amount of revenues would have been largely increased above the amount stated, by the increase of business, and if tolls had been the same as now, 7 mills; then the saving of cost of transport on the business of last year, would have been equal to \$1,890,841. It is estimated that a reduction of the average cost of transport to 7 mills per ton per mile, would increase the tonnage of the canal to the enormous amount of 1,000,000,000 tons one mile, by the year 1855, when the whole earnings of the canal would, at the estimated prices, be \$7,000,000, of which the State would receive \$3,000,000, or more than ten per cent on the cost of the canal. The cost of transporting the above 1,000,000,000 tons at present rates, would be \$15,600,000 or \$8,600,000 over enlargement prices; a sum sufficient to nearly complete the enlargement.

The above calculations show the importance of an immediate enlargement. The expenditure required is inconsiderable, when compared with the vast and direct pecuniary benefits to result therefrom.

The Erie canal has increased our wealth in every department of business, and in every quarter of the State. It has been a profitable investment to the State by reason of its immense business.

The number of tons moved is the measure of its usefulness; as these increase or diminish, so also will the benefits. Unless the capacity of the canal be increased, its business will be diverted. The present cost of transport on the Erie canal is shown to be 1 56-100 cts. per ton per mile, of which the State receives about 7 mills, or nearly one half. There are lines of communication now built and in progress of construction, which can take freight at a cheaper rate.

The public mind seems to be especially anxious to know what is to be the lowest cost of railroad transport. This question is not yet determined. We can, however, form some estimate by an examination of the results thus far. I have been accustomed to examine this subject closely, and from my own experience and careful examination of results on different roads in our country and in England, have come to some conclusions satisfactory to myself.

In order to show that the statements and reasonings I shall set forth are somewhat in unison with facts, I here append a statement of the cost of railroad transport as shown on a few roads in this State and in Massachusetts. The Massachusetts reports do not divide their freight from their passenger expenses; this I have done as well as I could. The law now requires our railroad corporations to report their freight and passenger expenses separately; in both States they are required to show their total movement. So far as I can determine, this has not generally been accurately done. I give the table, however, as affording some indication of the cost of railway transport, and as showing also the general principle upon which the economy of transport depends.

NAMES.		Earnings from sources other than passengers and freight.	Total earnings.	Total expenses of transportation.	Maximum grade per mile.	COMPARATIVE STATEMENT OF FREIGHT EARNINGS AND EXPENSES FOR ONE YEAR.																		
		Dollars.	Dollars.	Dollars.		Miles in operation.	Miles run by trains.	Total tons carried.	Total tons carried 1 mile.	Total tons carried each m'l run.	Earnings fm freight.	Cost of the freight business.	Earned per ton per mile.	Cost pr ton per mile.	Earned per mile run.	Cost per m. run.								
MASSACHUSETTS.																								
Western.....	36,841	51	1,343,810	57	358,322	83 feet.	1171	485,613	2,732,608	25,327,387	52	1-7	745,393	81	331,338	01								
Boston and Worcester.....	41,416	70	703,361	15	429,383	35 30 and 40 feet.	444	158,379	2,488,766	16,405,270	103	3-5	108,974	21	76,544	98								
Boston and Maine.....	21,147	30	522,335	51	283,510	76 47 feet.	741	82,495	1,024,485	3,547,817	103		108,974	21	76,544	98								
Fitchburg.....	17,836	55	493,060	43	256,160	25 40 "	51	107,689	257,032	11,092,810	102		262,161	95	103,603	92								
Boston and Providence.....	9,249	84	354,331	60	169,905	48 374 "	41	61,180	96,642	2,870,481	47		119,411	91	50,863	98								
NEW YORK.																								
Albany & Schenectady.....	6,134	50	206,564	86	91,171	98	17	32,248	63,012	1,071,204	33	1-5	70,242	69	42,406	98								
Auburn and Rochester.....	17,196	32	515,810	94	163,465	64	78	62,016	34,145	2,663,310	43		111,998	46	47,882	19								
Hudson River.....	6,490	00	267,660	66	167,383	47	78	93,680	98,695	4,760,730	50		255,608	47	133,045	87								
Utica and Schenectady.....	72,285	25	923,425	99	308,173	86	78	23,086	15,474	6,325,000	244		26,818	91	19,623	98								
N. York and N. Haven.....	32,612	23	461,769	31	237,886	36	61	23,086	15,474	6,325,000	244		26,818	91	19,623	98								
Oswego and Syracuse.....	12,061	96	78,371	61	38,912	92	35	16,000	7,946	2,670,089	164		9,661	32	6,325	68								
Tonawanda.....	21,476	86	344,398	65	109,622	27	431	38,144	20,211	850,807	224		67,688	37	35,055	55								
NAMES.		Miles in operation.	Miles run by passenger trains.	Whole No. carried in the cars.	Number carried one mile.	No. carried each mile run.	Earnings fm passengers.	Expenses of passenger business.	Earned per passenger per mile.	Cost per passenger per mile.	Earned per mile run.	Cost per mile run.	Profit per passenger per mile.	Profit per mile run.	No. miles run by freight trains.	Total tons carried.	Tons carried one mile.	Tons carried each mile run.	Earnings from freight.	Cost of freight business.	Earned per ton per mile.	Cost pr ton per mile.	Earned per mile run.	Cost per m. run.
MASSACHUSETTS.																								
Western.....	1171	244,878	435,805	30,890	519	1261	561,575	25	192,966	23	1,816	0.625	2	29	76	1,193	1	50	455	613	2,723	606	25,327	357
Boston and Worcester.....	441	302,009	935,557	22,824	482	753	330,606	35	281,862	36	1,440	1.235	1	10	93	1,295	0	17	153	379	2,488	706	16,405	270
Boston and Maine.....	744	304,764	1,205,007	16,996	996	553	332,214	00	206,965	78	1,531	1.220	1	09	68	0.639	0	41	82	495	102	485	3,547	817
Fitchburg.....	503	239,973	875,410	18,263	765	76	213,007	96	1,167	0.886	0	59	63	0.339	0	26	107	589	257	932	11	669	810	
Boston and Providence.....	41	183,670	573,360	10,689	622	581	225,639	85	119,041	50	2,111	1.114	1	21	63	0.997	0	56	61,180	96,642	2,878	481		
NEW YORK.																								
Albany & Schenectady.....	17	51,315	284,279	4,832	713	931	132,207	69	48,765	00	2,735	1.009	2	56	94	1,730	1	62	32,245	63,012	1,071	204	33	1-5
Auburn and Rochester.....	78	179,560	971,308	13,711	977	763	386,616	13	115,583	45	2,822	0.843	2	15	64	1,976	1	62	101,998	47,882	1,920	1-708	1	80
Hudson River.....	75	158,431	569,180	17,821	300	112	242,505	10	144,647	53	1,361	0.812	1	53	91	0.549	0	62	25,060	5,745	2,220	800	9	18,375
Utica and Schenectady.....	78	229,940	739,988	22,430	109	971	505,472	27	175,127	99	2,635	0.781	2	41	76	1,874	1	65	93,585	98,095	4,760	730	50	255,068
N. York and N. Haven.....	61	282,797	652,122	20,867	904	731	502,368	17	218,062	43	1,045	1	42	77	0.875	0	65	93,585	15,473	6,325	000	244	26,818	
Oswego and Syracuse.....	35	58,460	277,162	1,937	085	33	57,118	33	32,607	24	3	1	683	0	97	55	1	317	16,000	7,949	2,670	089	164	9,661
Tonawanda.....	431	115,864	256,404	9,571	050	824	255,282	80	74,567	03	2,607	1.079	2	20	64	1,888	1	56	38,144	20,211	850	807	324	67,688

By an examination of the table, it will be noticed that the cost on the Boston and Worcester road is nine mills per ton per mile, and on the Fitchburg 9 4-10 mills; that the cost per train per mile run is 93 and 96 cents, and the useful load each mile run is 103 and 102 tons. The cost per ton per mile on the Western road (with grades of 83 feet) is one and a half cents, and per mile run 83 cents, and the useful load 52 1/2 tons each mile run.

The economy of transport on railroads as well as on canals, or rivers, or the ocean, depends mainly upon the load taken at each movement, as the above statements clearly indicate. The Reading road, its managers assert, can carry coal at a cost of six mills a ton a mile, because their trains are fully loaded one way. The Baltimore and Ohio railroad entered into a contract to carry coal at one and one-third cents a ton a mile, while their ordi-

nary traffic was costing them over two and one-half cents a ton a mile. The estimates of their engineers showed them that the coal train will be fully loaded one way, while their other trains had an average movement much below one-half of the power of their engines. Suppose that a train loaded with fifty tons costs seventy-five cents per mile run, then the cost per ton per mile is one and one-half cents; but if the train is loaded with 100 tons, and costs 85 cents per mile to move, then the cost is 85-100 of a cent per ton per mile.

It is no doubt true that by careful management in every department, by employing well constructed cars and engines, trains heavily loaded can move at an expense of eighty cents per mile, and in case of many of our roads where labor, fuel, etc. are cheap, for a less sum. It is, no doubt, also true, that with a large business at command, and under the management of experienced and capable men, average loads of from 100 to 150 tons may be moved, heavy grades excepted, each mile by all trains employed in the heavy traffic, which is moved at rates of speed not exceeding ten miles per hour. This would make the cost from 80-100 to 53-100 of a cent per mile as the mere cost of transport, rejecting only the interest on investments. I am perfectly aware that no results have yet been attained to justify this statement. The Boston and Worcester, and the Fitchburg roads, have apparently carried freight for nine mills. Have they managed as prudently as possible?

The cost of transportation, when full loads are attainable, is materially modified by grades. The Western road has run at a cheaper rate per mile than the other roads named, though their roads require more power to move them over their maximum grades than do the loads on the Boston and Worcester or Fitchburg roads, weighing twice as much.

This shows that a road having steeper grades than another, may be run as cheaply per train, and that when the loads are the same, the cost may be the same, or less. There is nothing mysterious in this; the proposition is easily demonstrated, though many will pronounce it preposterous. Before, therefore, we decide upon the effect of grades upon the cost of transport, we must determine the maximum load due to those grades, and also whether the usual loads which the traffic of the line will afford, is above or below that maximum. As I am discussing this matter in a practical way, I will not stop to guard against cavils, but simply state such facts as bear upon the subject on hand.

The above remarks are made in view of the distinctive characteristics of the routes I shall name. Thus far, the average loads of ordinary traffic on all roads, is below the maximum load of an engine on the lines I shall name, or on other lines extending from southern cities westward.

I believe there are no grades on the New York and Erie railroad, or the northern route from Ogdensburg to Boston, which forbid the idea of average loads of 100 tons, if good management and good machinery are called into requisition; that both will be is not to be questioned. I am purposely to state the cost of transport at as low rates as I imagine can, under the most favorable circumstances, be attained, and for evident reasons. Rates as low have been maintained in cases where a strong necessity or important reasons required.

It has been shown to me that flour is now taken from Detroit to Ogdensburg for thirty cents per barrel. From Ogdensburg to Boston is 380 miles by railroad, at eight mills per ton per mile. (cost price,) the rate will be thirty-three cents, making the cost from Detroit to Boston sixty cents, leaving no profits for dividends for the railroads. By the Erie canal last year, the average charges were: Detroit to Buffalo, twelve cents; Buffalo to Albany, fifty-four cents; Hudson river ten cents; in all seventy-six cents. This would enable the northern line to charge thirteen cents for profits, and the cost of transport to New York and Boston would be the same.

But there is another, and, I apprehend, a still cheaper route by water to Lake Champlain, soon to come into competition at the north, which will produce as cheap or cheaper rates to Boston than the above. The freight by this route afloat on Lake Champlain may find cheaper transport to New York than to Boston. It will not pass thro'

COMPARATIVE STATEMENT OF FREIGHT EARNINGS AND EXPENSES FOR ONE YEAR.

By an examination of the table, it will be noticed that the cost on the Boston and Worcester road is nine mills per ton per mile, and on the Fitchburg 9-4-10 mills; that the cost per train per mile run is 93 and 96 cents, and the useful load each mile run is 103 and 102 tons. The cost per ton per mile on the Western road (with grades of 83 feet) is one and a half cents, and per mile run 83 cents, and the useful load 52½ tons each mile run.

The economy of transport on railroads as well as on canals, or rivers, or the ocean, depends mainly upon the load taken at each movement, as the above statements clearly indicate. The Reading road, its managers assert, can carry coal at a cost of six mills a ton a mile, because their trains are fully loaded one way. The Baltimore and Ohio railroad entered into a contract to carry coal at one and one-third cents a ton a mile, while their ordi-

the Erie canal, and will be diverted from Albany by cheaper routes.

The Erie road can transport as cheaply as the Northern. The charges from Detroit to Dunkirk, twelve cents, thence by railroad to Piermont, 446 miles, at 8 mills per ton per mile, thirty-eight cents, to New York, five cents, in all fifty-five cents, or twenty-one cents under present canal charges, leaving that amount to be charged for profits.

The line of roads between Buffalo and Albany may be so used as to transport cheaper than either the lines named. This line is to be improved in grades and distance. The more level grades will enable them, if traffic permit, to carry larger loads per mile run, than the other lines can; but, make the cost the same, eight mills, and the distance, 325 miles, and the comparison will stand thus: From Detroit to Buffalo, twelve cents; thence to Albany, twenty-eight cents; Hudson river, ten cents; in all, fifty cents per barrel against seventy-six cents, present cost by the canal.

There is nothing in this proving that railroads can transport as cheaply as the canal. We are comparing railroad rates which will give no profit, with rates on a canal yielding to the State, in addition to cost and profit of transportation, a net revenue of over \$2,500,000, or more than four per cent on the cost of all the railroads in the State, and find that under such a state of things the business of the canal can be diverted.

Should any one still maintain that the rates of railroad charges used in these comparisons, must result in absolute loss, and that they will not be established, I should answer, that they must result in losses, provided the method of transport should be in any degree faulty, but the fixed plans of operations can be devised, by which no losses would be incurred. Such plans would include good machinery, large loads and slow movements, (compared with present rates of speed on railroads,) and to be applied only to the commodities carried at low rates. The admission that such rates, if established, would be below the actual extra cost occasioned by this business, is not proving that they may not be established. The report of the Western road shows that some of their rates are at the cost point. They have an object in this, quite sufficient to justify the plan as a revenue measure, because it gives them other and profitable traffic, from which to earn dividends. This road would not pay expenses, if it terminated away from a considerable market. These low rates tend to build up the terminating point by which they add to the paying business. The object and the plan justifies the acknowledged shrewdness of our eastern neighbors.

The famous competition between the Reading road and the Schuylkill canal, reduced rates to a point as low as I have used, though they have no trade more profitable to rely upon for dividends. It is evident, therefore, that rates may be adopted on railroads which are below the real cost of transport for many articles, and I suppose that in all well devised tariffs this will always be so, simply as a revenue measure; that is, rates so low, that if no higher ones are charged, would result in actual loss. Could it be demonstrated that our railroads would carry all the freight that would otherwise pass through the canal, and at rates as low as will rule on the enlargement, then no consideration of public interest would require its completion. But it is here shown that they can do no such thing, but that on the enlargement we can carry freight of all kinds, and in both directions, at rates below what the railroads can possibly accomplish, and still give the State a clear revenue of \$2,500,000 annually. It is evident that the canal, at its present capacity, can be affected by railroad competition, and that it will be. Canada and Boston have not yet perfected all their works devised expressly for this purpose. Philadelphia and Baltimore have not perfected theirs. All will soon, however, have their whole machinery in motion. Their plans are not the product of blindness or folly. They are the results of good judgment and just appreciation of the great boon sought, and the best means of attainment. But with such rates of charges as the enlargement will secure, the boundaries of our trade will be extended far beyond their present limits, and will embrace the largest and most productive portions of the great west. The tonnage of

our canals, which is the measure of their usefulness, will be greatly augmented. Passengers and freight requiring more rapid movement, will be attracted to our railroads. New York will, in spite of every effort that can be put forth, and of any scheme, plan or device which can be accomplished, be and remain the great highway for the west and east, and the city of New York, the great market of the continent. Flour, and all other products in like proportion, will be delivered to her port at a reduction of twenty-five to thirty cents on a barrel. The supply of European markets will thus be more feasible and uniform.

Virginia.

Manassas Gap Railroad.—The stockholders of this company were assembled in general meeting at their office, in this place, on Thursday last, the 10th instant. We were happy to see so large an attendance consisting not only of stockholders in our own community, but from the counties of Prince William, Loudoun, Fauquier, Warren and Shenandoah. The presence of gentlemen from the two last named counties, was especially gratifying, as strongly indicative of the interest felt in that portion of the State, in the success of the enterprise.

The act of the Legislature was accepted, (a large majority of the stock being represented) under which the Commonwealth becomes a subscriber to the stock of the company to the amount of \$320,000; and some other business was transacted.

We have gathered from authentic sources, some facts, in reference to this road, which a just pride not only in the community in which we live, but in the good old commonwealth, of which we are now part and parcel, impels us to make public. And this pride, we are free to say, arises mainly from the energy with which the road in question has been pushed forward, and the enthusiastic manner in which it has been sustained by its friends, in every quarter.

The company was organized in this town on the 31st day of July last. Now, the road is under contract to the top of the Blue Ridge, a point distance 42½ miles from its intersection with the Orange and Alexandria railroad, and 8 miles from the Shenandoah river. These 8 miles are under location. The Ridge is overcome at an inclination of about 84 feet to the mile on its eastern, and 60 feet to the mile on its western slope; grades, which are mere play things to the locomotives of these days.

Three thousand two hundred and fifty tons of rails have been purchased, about five hundred tons of which are expected to arrive here, about the 1st of August, and the residue as wanted, during the Autumn. This quantity, it is estimated, will complete the road, with all necessary sidings, to Farrowville, in the county of Tanquer.

The freight and passenger trains, it is confidently expected, will be in full operation to Withers' Depot, distant from Alexandria 61 miles, by the 1st of January, 1852.

Contracts for the equipment of the road in locomotives, and all the various descriptions of cars necessary, have been made with Messrs. Smith & Perkins, of the Alexandria iron works—a fact which speaks favorably of this firm, in being prepared, at so early a period, to undertake a contract of such magnitude, in addition to their already large engagements, and of the liberal policy of the company, in fostering an establishment within our own town and State.

The reputation of Mr. Perkins, acquired during a long connection with the Baltimore and Ohio railroad company, will, we doubt not, be fully sustained, by the excellence of the machinery he will turn out here.

The friends of Manassas, in Eastern Virginia, having done so much, and done it so well and so quickly, look confidently now, to the Valley, to take up, and continue the work—and we have no fear of their disappointment.

Ere another month is past, we shall be called upon to record a subscription from that quarter, under the influence of which the links of the iron chain which is to bind us together, and which we are so strongly and so surely forging on this side of the Ridge, will be extended into their midst, there to be fastened and riveted forever.—*Alexandria Gazette.*

Ohio.

Columbus, Piqua and Indiana Railroad.—The corps of engineers on this road arrived in our city last night, and are to-day making observations and testing routes west of this city. Judge Mitchell, the President of the road is in company, and the greatest energy seems to be exerted to push it on to completion. Much interest is felt in the location of the route terminating in this city, and what the different routes run may result in, will be looked for with impatience. It will be some days, perhaps weeks, before a final decision can be arrived at.—*Daily Statesman, 9th inst.*

Liabilities of Railroad Companies.

The Albany and Schenectady railroad Co. were mulcted in damages amounting to \$92 20 at the present session of the Supreme Court at Buffalo, Judge SILL presiding, for the non-delivery to the plaintiffs in the cases, Messrs. Crosman and Smith, of Niagara Falls, and loss of a tenoning machine, which had been shipped, properly marked, on board the cars at Albany, to be delivered to the plaintiffs at Buffalo. It was shown that it was the custom of defendants to receive property at Albany to be carried through to Buffalo, and the plaintiffs also called one witness to show that it was the custom of defendants to send property through to its place of destination unless consigned to some one at the end of the route. The property came through to Buffalo, but the tenoning machine was never received by the plaintiffs. It was held in this case, that inasmuch as it was the custom of the defendants, as common carriers, to convey property through from Albany to Buffalo, and as the property in question reached Buffalo and the machine was not there delivered to the plaintiffs, or to any one for the plaintiffs, they were entitled to a verdict. The value of the property was shown to be \$75, and the interest \$17 20.

Pennsylvania.

The Lebanon Valley Railroad is strongly urged by the Lebanon Courier, as an important link in the chain of railroad communication between Philadelphia and the great west. The Columbia road, according to a recent report of Edward F. Gay, civil engineer, in its present condition, is inadequate to afford accommodation for the trade and travel that may reasonably be anticipated on the completion of the Pennsylvania railroad to the Ohio river. Mr. G. proposes to make changes and lessen the curves on the State road to the extent of 24 3-8 miles, at a cost of \$1,058,585. This is nearly as much as would be required to complete the whole Lebanon Valley railroad. The recent survey of the Lebanon route proves it to be not only the best, but the natural thoroughfare to connect Philadelphia with the capital of the State.

Maryland.

Baltimore and Susquehanna Railroad.—Coal Burning Locomotive.—This company has had built by Ross Winans, Esq., another of his powerful coal burning engines, intended for the tonnage business of their road. It is similar to the one recently constructed for them by the same gentleman, and the performances of which have given great satisfaction. At the unanimous request of the agents and employees of the company, this engine has been named the "Robert M. Magraw," in compliment to the worthy and energetic President. The company have also a first class passenger engine now in course of construction in their shops at Bolton, under the superintendence of Isaac Denmead, Esq., the efficient master of machinery, which is to be called the "Robert S. Hollins," a name intimately connected with the affairs of the road since its commencement. Notwithstanding the efforts of the company to accommodate the immense trade offering to their road, they have been unable in consequence of want of cars, as well as of motive power, to transport it all. The facilities of the company were hardly sufficient to accommodate their business of last year, and thus far, the increase in their receipts has been at an average of over eight thousand dollars per month.

This has been accomplished only by the most extraordinary labor, and by keeping all of their available machinery running both day and night. It is understood that these difficulties will soon be removed, as measures are under advisement to provide the means of transportation to meet the demands of trade on the road.—*Baltimore Sun*.

Indiana.

Crawfordsville and Wabash Railroad.—The iron for this road is now on its way from this city, via the Erie Canal and the lake; and the work of laying the track will be commenced in a very few weeks, as all other parts of the superstructure, such as cross-ties, spikes, chairs, etc., are already on the ground. It is expected to have the whole line completed to Crawfordsville, 26 miles from Lafayette, in season for the fall business.

At the last session of the Legislature of Indiana, the charter of the above company was amended, and authority given to extend the line of its road to Greencastle, the county town of Putnam county, 28 miles from Crawfordsville, at which place it will intersect with the Terre Haute railroad, which will soon be opened. This extension will open a direct communication between Lafayette and Terre Haute on the west, and with Indianapolis and all the roads centering at that point on the east, thus opening a direct route between the northern and southern portions of the State.

Ohio and Mississippi Railroad.

This important enterprise, for connecting St. Louis with the eastern cities by a continuous line of railroad, has now assumed a tangible and definite form, and is entitled to the earnest consideration of every one who feels the slightest interest in the future growth and prosperity of our goodly city. Several years ago, a charter was granted by the State of Indiana, incorporating a company to construct a railroad from Vincennes to Cincinnati. This charter was ratified and adopted by the State of Ohio. Subscriptions of stock to this road, including the amount to be taken by the city of Cincinnati, have already been obtained to the amount of about two millions of dollars. The surveys have been nearly completed, over a most favorable route, and we believe the lettings of contracts on the eastern end of the line have already been made. At all events, the subscriptions already obtained insure the early completion of the road, beyond the shadow of a doubt. Two years ago, the legislature of Illinois refused the right of way to this road through the State; consequently, the Indiana charter only embraced the road from Vincennes to Cincinnati. But at the late session of the Illinois legislature more reasonable counsels prevailed, and a charter was granted for the continuation of the road from Vincennes to Illinoistown. The length of the road from here to Vincennes will be less than 150 miles, and from Vincennes to Cincinnati about 180 miles, making the entire distance by the road from here to Cincinnati less than 330 miles. It is believed that the entire road can be built in the most substantial manner, at a cost of about \$20,000 per mile, which would give six millions six hundred thousand dollars as the aggregate cost of the entire road. The directors under the Illinois charter are now in the city, and are to hold a meeting to-day at the Merchants' Exchange, for the purpose of electing a President, and taking other necessary steps for organizing the board.

Such is a brief history of the present condition of this enterprise; and now, the first question that presents itself is this: "What claims has it upon the people of this city, and is it our duty to aid the enterprise in every practicable mode?" In our opinion the road will prove of incalculable value to this city. It will bring into our market the rich products of the Wabash valley, and all the intermediate country. It will afford a rapid and cheap conveyance hence to the eastern markets, for the immense products of which St. Louis is the natural depot, and which will be doubled, if not quadrupled, by the completion of the Pacific, and Hannibal and St. Joseph railroads. It will enable us

to obtain our imports from the east, in much less time, and at a greatly reduced cost. By its connection with the Central railroad of Illinois, it will at all seasons afford us a rapid and safe transit to the New Orleans market; and, by means of the Memphis and Charleston road, to the markets of South Carolina and Georgia. It will facilitate the travelling intercourse between St. Louis and the east, to an almost incredible degree. At the present moment, it requires only *forty-eight hours* to go from Cincinnati to New York; and, in a few months, even this short time will be reduced to *thirty-six hours*; when this reduction is made, as we are assured it will be very soon, it would then require only *forty-eight hours* to travel from this city to New York, after the completion of the Ohio and Mississippi road. A few years ago this assertion would not only have been deemed extravagant but absolutely preposterous and incredible. Nevertheless, it is now, in a great degree, actually realized, and can be as easily demonstrated as that two and two are four.—*St. Louis Intelligencer*.

Theory versus Practice.

The new Constitution of Ohio, which is soon to be presented to the people for acceptance, prohibits the taking of stock in, or the loaning of credits to, railroads, by counties and towns. In view of this, the people in every portion of the state are moving in the matter of voting subscription to the various lines in contemplation and progress, while they are left free to act. Before they immolate themselves upon the altar of *principle*, they seem disposed to take a *horn* all round, by way of *treating* their resolution.

The following show the results of some of the elections that have just come off:—

The county of Clinton has voted to subscribe to the Cincinnati and Zanesville road by a majority of 600.

Fayette has done likewise by a majority of 800.

Pickway gives 664 in favor of subscription.

Fairfield gives 1,000 majority for a subscription of \$250,000.

Sandusky county has voted a subscription to the Cleveland and Toledo road, and so has Huron county. The work will go on.

Harrison county has voted to subscribe to the road from Newark by Steubenville to Pittsburgh.

Union county has voted to subscribe \$125,000 to railroads—\$75,000 to the Springfield and Delaware—\$25,000 to the Columbus and Piqua, and \$25,000 to the Bellefontaine and Delaware road.

Knox county has rolled up a large majority for railroad subscriptions.

Louisiana.

New Orleans and Jackson Railroad.—This project, which has for a long time occupied the attention of the people of New Orleans, is at last beginning to assume a tangible shape. A survey of the whole line has just been completed under the direction of A. S. Phelps, Esq., of which we present the following abstract. The whole length of line is 92½ miles. It commences at a point about 3 miles from the city of New Orleans, on the west bank of the new canal. The cost of each section is stated as follows:—

River Section, 28 miles, at \$9,507 43 per mile.....	\$26,208
Swamp section, 16½ miles, at \$11,205 40 per mile.....	184,889
Pinewood sections, 48 miles, at \$8,454 12½ per mile.....	405,702

Making the total cost..... \$856,799
Or \$9,262 70 per mile. These estimates are based upon the best materials, and the most substantial mode of construction. The sum of \$1,000,000 will

cover all items of cost for putting the road in working condition, including equipments, stations and the usual incidentals.

Wrought Iron Beams for Steam Engines.

The beams of steam engines, as most people are aware, have hitherto been made of cast iron, which is liable to break. The attempt to make them of malleable iron, was never dreamt of; and when we state that rolled beams are now to be seen at the depot of the York, Newcastle, and Berwick railway, the announcement will be received in many quarters with surprise, if not incredulity.—We saw the monster plates, however, with our own eyes (the largest plates ever yet rolled) measuring 17 feet in length, 4 feet 8 inches in breadth at the widest part, and 1½ inch in thickness. Each plate weighs upwards of 1 ton 4 cwt. These plates were manufactured at the Derwent Iron works, Consett, and are on their way to Messrs. Todd and Macgregor's works in Glasgow, to form part of a large marine engine: they are much lighter, and, consequently, less cumbersome, than the ordinary cast iron beams, and infinitely safer.—*London Mining Journal*.

Michigan.

Railroad Travel.—The number of passengers passing over the Michigan Central railroad for Feb. 1851, was 5,072, amounting to \$9,330.72 for fare. The number of through passengers was 327, amounting to \$2,168.

For the month of March 1851, the number was 8,835, amount received for fare, \$21,995.45. The number of through passengers was 1,679, amounting to \$10,625.52. The number going east was 839; west 840.

For February 1850, the number of passengers was 4,708, fare received \$9,004.00.

For March 1850, the number of passengers was 7,738, fare received \$18,130.55.

New York.

Buffalo and Conkoclon Valley Railroad.—The Bath Courier says that most if not all of the contractors upon this end of the B. and C. Valley railroad, have broken ground on their respective sections, and are now fairly at work. In many places through our valley, it looks very much like a railroad already. Some of the engineers are taking their march westward, and our Livingston county neighbors will soon have ocular evidence of the determination of the company to prosecute the work vigorously, and complete it as soon as possible.

St. Lawrence and Atlantic Railroad.

The Montreal Pilot, speaking of the interruption which had occurred in this work, says:

"We are much pleased to learn that the difficulties which have existed between Messrs. Black, Wood & Co. and the Directors of the St. Lawrence and Atlantic Railroad Company, have been arranged in a manner satisfactory to all parties; and that in accordance with their original agreement, the contractors will press forward the works on the road, so as to insure its completion by the month of October, 1852.

There is no doubt that at that date the communication between the St. Lawrence at Montreal and the Atlantic at Portland, will be fairly opened for an extensive traffic.

Ohio.

Steubenville and Indiana Railroad.—The city of Steubenville has decided, by a vote of 6 to 1, to subscribe \$100,000 to the capital stock of the railroad from Pittsburgh westward. Also the counties along the line, in Ohio, have subscribed, or intend subscribing handsomely.

At the Cleveland Charter election, that city voted, by a decided majority, to subscribe \$100,000 to the Lake Shore railroad.

LOWMOOR

U. S. BEST FINCH IRON. To Iron Merchants.

JOHN FINCH & SONS, Iron Merchants, Liverpool, now are, and for more than twenty years past have been, sole Agents for the **LOWMOOR IRON COMPANY**, for the United States and Canada, for the sale of their well known Railway Tire Bars, and Axes, Piston Rods, Boiler Plates, Angle, Rivet, and all other kinds of Lowmoor Iron: also, sole Agents for the sale of the superior St. Iffordshire Iron stamped "FINCH CROWN" and "U. S. BEST FINCH," and Merchants and Wholesale Dealers in all other kinds of British Iron.

We hereby inform our friends and the public that we have this day appointed **Mr. WM. BAILEY LANG**, of Boston, as our only representative to receive orders and to transact our general business in the United States.

For **JOHN FINCH & SONS**,
JOHN FINCH Sen.

Boston, April 11, 1851.

LOWMOOR and other Bent, Welded and Blocked **RAILWAY TIRES**, ready for use, **E. FINCH'S** Patent Dovetailed and other kinds of **WROUGHT IRON RAILWAY WHEELS**, with, or without the finished Axes, for Locomotives and for Passenger and Merchandise Cars, also Wrought Iron Railway Chairs, Railway Spikes, etc.

To the Managers of Railways, Engineers and others: Gentlemen:—We, **FINCH & WILLEY**, Engineers, Liverpool, Manufacturers of the above articles, respectfully inform you that we have this day appointed **Mr. WM. BAILEY LANG**, of Boston, as our sole Agent for the sale of said articles, and the transaction of our business in the United States of America, and for whom we solicit your kind attention and patronage.

For **FINCH & WILLEY**,
JOHN FINCH, Sen.

Boston, April 11, 1851.

Having accepted the above Agencies, I beg leave to solicit your orders, which shall at all times receive my prompt and careful attention. Please address all communications either to **MESSRS. JOHN FINCH & SONS** or **MESSRS. FINCH & WILLEY**, Liverpool; or to me, at my Steel Warehouse, No. 9 Liberty Square, Boston. Yours very respectfully,

WM. BAILEY LANG.

Boston, April 11, 1851.

The following are testimonials of the quality of **FINCH & WILLEY'S WROUGHT IRON RAILWAY WHEELS** from the Yorkshire and Lancashire Railway Co., one of the largest in Great Britain, and from the London and North Western Railway Co., the largest Railway Company in the world.

LONDON AND NORTH WESTERN RAILWAY,
(Northern Division.)

WAGON DEPARTMENT, ORDSALL LANE,
Manchester, January 4, 1851.

Gentlemen:—I have very great pleasure in bearing my testimony to the excellent quality of your Wrought Iron Railway Wheels.

This Company have many of them now in use on their lines, and during my experience, as their Superintendent, which is now upwards of 9 years standing, I have not known any of them to fail during that time.

I am, Gentlemen, yours, truly,

OWEN OWENS.

MESSRS. FINCH & WILLEY,
Windsor Foundry.

LANCASHIRE AND YORKSHIRE RAILWAY,
Wagon Department, Jan. 3, 1851.

Messrs. Finch & Willey,

Gentlemen: In reply to your request writing me to give my opinion of the 700 sets of Wrought Iron Wheels you furnished this company during the years 1847 and 1848, I have much pleasure in stating that we have not had a single instance of your Wheels failing in any respect, and I consider them equal if not superior to any Wheels we have on this line of railway. The Tires being **LOWMOOR** iron, 1½ inch thick, I have no doubt they will run under ordinary goods' wagons 12 years without any repairs more than the tires turning up.

I am Gentlemen,
Yours, truly, **WM. EMMETT.**

NOTE.—4 Wheels and 2 Axes are one set, consequently this order contained 2000 WHEELS and 1400 AXLES; value over \$100,000.

To Contractors.

Covington and Lexington Railroad.

SEALED PROPOSALS will be received at the Covington and Lexington Railroad Company, in this city, until the fifth day of May next, for Grading forty miles of the Covington and Lexington Railroad, commencing at the town of Falmouth, Pendleton Co., and extending up the valley of the South Licking river to the town of Cynthiana, Harrison Co., thence to the town of Paris, Bourbon Co.

The proposals will include all the excavations, embankments and masonry for culverts; also, the masonry for bridges.

Plans and specifications of the work, to be seen at the office of the company at any time between the twenty-fifth of April next and the 5th of May.

SYLVESTER WELCH,
Engineer Cov. and Lex. R.R.

Office of the Covington & Lexington Railroad,
Covington, Ky., April 1st, 1851.

Illinois.

The stockholders in the Rock Island and Chicago railroad, (formerly Rock Island and LaSalle,) under its amended and extended charter, have just completed the organization of the company, and chosen the following gentlemen as directors, namely:—

James Grant, Ebenezer Cook, N. B. Berford, Lemuel Andrews, Charles Atkinson, John Stevens, F. D. Brewster, N. D. Elwood, J. Cook, John Stryker, E. C. Litchfield, John B. Jarvis, and Charles Butler.

The directors unanimously chose Judge Grant of Davenport, President of the board.

New Business for Railroads.

In olden times, to people the world, a musical genius supplied the great lack of inhabitants, by singing trees and stones into men. We learn that the same influence is to be brought to bear upon railroads, to supply any lack of coin that may exist with such. The great "ORPHEUS" of the 19th century—**DODGE**—having announced his intention to sing in Tripler Hall on the 29th inst., immense excursion trains are being got up in Boston, for the purpose of bringing, it is said, some 2,500 people to this great entertainment, and who are likely to part with *change*, if they do not undergo any.

Missouri.

The St. Louis Intelligencer in speaking of the internal improvement feeling in that State, says:

From all quarters of the State, we have the most cheering account of the state of the public mind in reference to Plank Roads. Several companies have already organized and are taking the most active measures for the completion of their roads. We believe a large portion of the stock has already been taken in the road from the Pilot Knob and the Iron Mountain to St. Mary's Landing. The road will certainly be completed at an early day. A large amount of stock has also been taken in the road from the same points to Ste. Genevieve. The same may be said of the road from Glasgow to Huntsville, and on the 21st inst., a convention is to assemble at Danville to deliberate of the road from Glasgow to St. Charles. This last is a noble enterprise, which we trust will be successfully carried out. It will be one of the most useful enterprises in the State, and will not only greatly enhance the value of property along the route, but it will be a *paying* road. Running through a rich and populous country, the travel and transportation over it will be immense. We hope it will be urged forward with energy.

If the Legislature at the late session, had done nothing else than to pass the general Plank Road law, providing for the organization of companies, it would have conferred a great benefit upon the community. With the Pacific, and Hannibal and St. Joseph railroads, north and south of the Missouri river, we need nothing except that these two main trunks, shall be intersected with Plank Roads

on either side of them, to render Missouri one of the richest and most populous States of the Union. The right spirit is now abroad amongst the people, and the day is not far distant when all will feel and admit not only the wisdom, but the absolute necessity of such improvements.

AMERICAN RAILROAD JOURNAL.

Saturday, April 26, 1851.

Particular Notice.

Subscribers wishing for odd numbers of the Journal as far back as 1845, to make good their sets, can be supplied *gratis* by immediate application at this office. After two weeks, we may not be able to furnish any.

The Stock and Money Market.

There has been but little alteration in the money market since our last; but whatever change has taken place has been a favorable one. The prices of well known stocks are well sustained, indicating an abundance of money, in all the ordinary channels of business. In the securities of new works there is no great activity, though large amounts of bonds are constantly, but quietly, finding their way to the holders for investment. The supply exceeds the demand, and the consequence is, that our leading houses engaged in the negotiation of new securities, have large quantities on hand, which operates against those coming into the market. We apprehend, however, that those having good securities will find no difficulty in obtaining money at fair rates during the coming season. It is far more conducive to a healthy state of things that money in large quantities should be somewhat difficult of access, than that it should be had at the call of every speculative movement, as in 1835 and 6.—Eighty-five cents *net* may be considered as a fair price for bonds of new works of the best character.

In the rail market, the quotations are about the same as those by the previous steamer, but prices were less firm, and more favorable to the buyer.

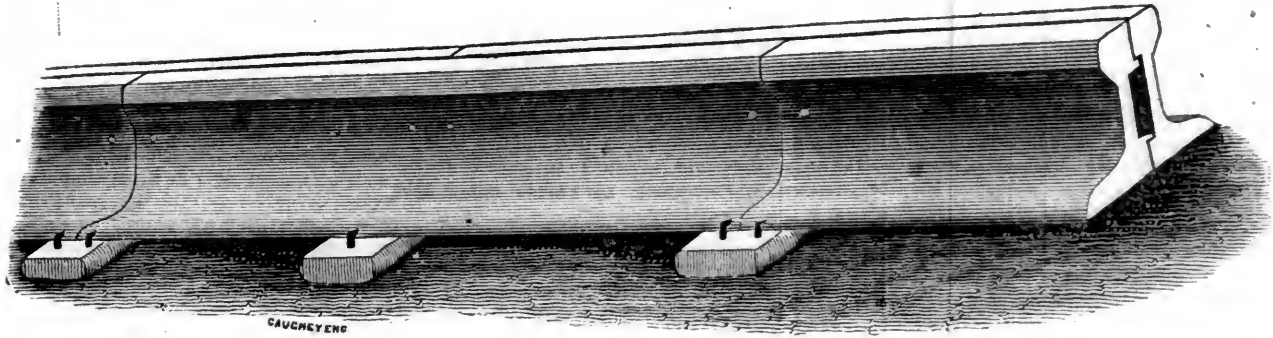
SALES OF STOCK IN NEW YORK.

	April 16. Sales.	April 23. Sales.
U. S. '67 Loan.....	116½	117
Erie R.R.....	89½	89½
Harlem R.R.....	74	73½
Stonington.....	43½	44
L.I. R.R.....	23½	23½
Norwich & Wor....	64½	65
Del. & Hudson.....	129½	128
Reading.....	61½	59
Morris Canal.....	18½	18½
Erie income.....	95	96
" " Bonds.....	102	102
Canton.....	72	72
Farmers Loan.....	64½	65

SALES OF STOCKS IN BOSTON.

	April 15.	April 22.
Old Colony Railroad.....	69	67
Boston and Maine R.R.....	104½	104
Eastern Railroad.....	102	101½
Fitchburg Railroad.....	111½	111½
Michigan Central Railroad.....	94½	94½
Northern Railroad.....	71	70½
Vermont Central Railroad.....	35	35½
Vermont and Mass. R.R.....	31½	33
Western Railroad.....	102	102
Ogdensburg Railroad.....	40½	40
Rutland Railroad.....	58	58½
Boston and Worcester Railroad.....	104½	104
Rutland Railroad Bonds.....	97	97
Ogdensburg Railroad Bonds.....	97½	97½
Vermont Central R.R. Bonds.....	91	92
Boston and Providence R.R.....	85	85
Philadelphia, Wilm'gton & Balt.....	29½	29½
Concord R.R.....	56	56
Manchester and Lawrence.....	90	90

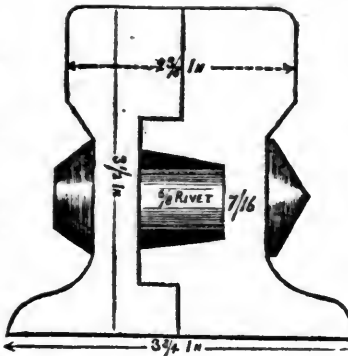
PATENT COMPOUND RAIL.



THE UNDERSIGNED NOW OFFER TO THE Railroad Public a new Compound Railroad Bar, which possesses, as they believe, a decided superiority over every kind now in use. The Cuts annexed will give a good idea of the form of the Rail, and the mode of combination.

This Rail has now been in use on the New York and Erie and the Utica and Schenectady Railroads for nearly two years, and has proved itself to be a *durable and continuous* rail, realizing the advantages of a theoretically perfect rail, over the one in common use. We invite the attention of Railroad Companies to a careful examination of the merits of the form now offered.

The advantages of this Rail are: first, it effects a saving of from 25 to 50 per cent. in the wear and tear of the machinery; secondly, it saves to a vastly greater extent in the repairs of track; thirdly, it secures a much higher rate of speed with the same power; and what is of still



greater importance, it offers complete protection against most of the accidents to which companies are liable. For these reasons, it is believed to be not only the best, but the cheapest rail that can be used. In enumerating its advantages, the proprietors only repeat the statements of competent persons, who have had the best opportunities of judging of its merits.

This improved Rail is now being manufactured at the Works of the Mount Savage Iron Co. in Maryland. Any communications or enquiries addressed to either of the undersigned will receive prompt attention.

J. F. WINSLOW, President,
Troy, N. Y.
ERASTUS CORNING, Albany.
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore.

April 8, 1851.

Alabama.

Winchester and Alabama Railroad.—A meeting of the stockholders of the Winchester and Alabama railroad company was held at Winchester on the 7th inst. W. C. Venable, Esq., President, and Geo. W. White, Esq., acted as Secretary. The following gentlemen were elected Directors of the company for the ensuing twelve months: Hugh Francis, Wm. S. Smith, Peter S. Decherd, Thos. F. Moseley, L. L. Matthews, David Arnett, Jared Simmons, John Handlev, Michael Williams, James H. Davis, Wiley B. Wagner, Thos. Finch, Benj. Decherd, Thos. S. Logan.

Michigan Southern Railroad.

The receipts of the Michigan Central railroad for March, 1851, were.....\$10,107 26
In same month last year..... 28,673 00
Increase this year.....\$11,434 26

Hannibal and St. Joseph Railroad.

The Directors of the Hannibal and St. Joseph railroad are to meet at Linneus, Linn county, on the 24th inst., to take the necessary steps for the immediate commencement of the work.

Wabash and Erie Canal.

This canal is now completed between Toledo, Ohio, and Point Commerce, Ia., giving a continuous line of canal of 352 miles—268 miles in Indiana and 84 miles in Ohio. The continuation of the line from the Point Commerce to Evansville, on the Ohio river, a distance of 111 1/4 miles, is all under contract. An effective force of two thousand men has been employed upon it the past season, and its final completion in the fall of 1852 is placed beyond a doubt. This great work, so soon to be completed, will be 463 1/4 miles in length—the greatest work of the kind ever undertaken by any State of the American Union—the largest continuous artificial channel of communication on the European or American continents.

Genesee Valley Railroad.

We learn from the *Genesee Republican* that two companies of engineers are now engaged in making the preliminary surveys on the Genesee Valley railroad, and it is expected that they will be in the immediate vicinity of the village in a few days.

Missouri.

Pacific Railroad.—At a meeting of the stockholders of the Pacific railroad company, held on the 31st of March, at St. Louis, its President, Thomas Allen, Esq., made, on behalf of the board of directors, a report of the operations of the company up to that date, of which we present the following abstract.

The preliminary organization of the company took place on the 31st of January, 1850. Books for subscription to the stock were opened on the 4th of February following, and on the last Monday in March, 1850, the board of directors were elected, and Mr. James P. Kirkwood, of this city, was selected Chief Engineer. On the 24th of May, 1850, Mr. Kirkwood commenced the survey of the "most practicable route to the western boundary line of the State, including the Merrimac Valley route, crossing the Gasconade and Osage rivers south of Jefferson City." Subsequently the Missouri river route as far as Jefferson City was surveyed, and a line from the main line, near Cass county, to the Missouri river, near the mouth of the Kansas. The report of the survey was completed by the Engineer in January of this year, and presents a survey with the usual exhibitions of the nature of the country, etc., of three routes—one by the Merrimac Valley, another by Union Bridge, and the third by the Missouri Valley, with continuation condensed into two routes to Jefferson City; one crossing Osage river south of Jefferson City, and passing by Versailles, and surveys continued to State-line in Cass county, and also by In-

dependence to Kansas. The country embraced in these surveys is over three hundred miles in extent, with a width of twenty to thirty miles. The aggregate length of routes surveyed is 825 miles.—

The whole amount of subscriptions to date of report is.....	\$544,100
Add conditional subscription of Jackson county.....	100,000
Add subscriptions of individuals in Cole and Franklin counties.....	14,000
And subscriptions voted by people of St. Louis.....	500,000
	\$1,158,100

The further amount of \$341,900 will be required to be raised to make the sum of \$1,500,000 to secure the same amount of the State loan. To avail themselves of the whole loan—not to exceed \$2,000,000—the company will be obliged to raise by subscription \$500,000 more. This done, they will have available means of \$4,000,000. To secure the payment of this loan, the company mortgage their road and its appurtenances. The bonds to be issued by the State bear 6 per cent interest, and have twenty years to run. As has been stated, the length of the road is 825 miles, costing upon an average \$20,000 per mile \$6,000,000 for the whole. That sum will put the road in working order. The maximum grade is about fifty feet to the mile. It is intended to locate and contract for the construction of some 40 or 45 miles of the road during the present year. This extent can be constructed for about \$100,000, including depot grounds in St. Louis, land damages, buildings, equipments, etc. There will arise no necessity, in accomplishing this, to locate the remainder of the line, while at the same time, either of the three routes, heretofore mentioned, can be adopted. Of the two routes by the Missouri and by the Merrimac Valleys the former, although rather shorter, is the most expensive. The estimated cost of the first 55 miles of the Mer-

rinac route is \$22,979 per mile, while 49 miles of the Missouri line will cost \$25,878 per mile. In the choice of routes, the company will be guided by what will "best promote its interests, and those of the public." The country which the route will traverse, is well supplied with various kinds of materials, with an abundance of timber and rich in agricultural resources, and is increasing rapidly in population. The estimate of the Engineer of the amount of traffic that will probably pass over the road is thus stated:—

118,000 tons of freight.....	\$470,200
139,000 passengers.....	501,700

Total.....\$971,900

Amendments have recently been made to the charter of the company, highly favorable to its own interests and those of the stockholders. Originally stockholders were individually liable to double the amount of their stock, but this liability is now reduced to the amount *unpaid* on the stock held by each, and the liability only holds for the time during which the stock shall remain unpaid. By another amendment the charter has been made perpetual. In addition to this, the whole country is now thrown open to the company, which was formerly restricted within certain limits, in the choice of route. By a further amendment, the property of the company is exempt from taxation for five years. It will thus be seen that the State of Missouri has acted with great liberality towards the company. Had Congress acted in the same spirit, the company would have been enabled, with present means, to have constructed the entire road.—Congress, at its next session, however, may do in this respect what the last left undone, especially when it is clearly shown that the grants of lands—six miles wide on each side of the road can be made, not only without loss, but with positive advantage to the United States.

The officers of the company for the present year are:—James H. Lucas, Luther M. Kennett, Louis A. Labaume, James Harrison, Thomas Allen, Hudson F. Bridge and Edward Haren. Thomas Allen, Esq., was re-elected President, and James H. Lucas, Esq., Vice President.

Illinois.

Alton and Sangamon Railroad.—We learn from the Springfield Register that the grading of twenty-three miles is completed, and on the remaining ten miles, the work is more than one half done. One thousand tons of rails, for about eleven and a half miles of track, have been delivered at Alton, and the residue of the iron for the entire road to Springfield, is delivered at New Orleans. Fifteen thousand ties, or sufficient for over seven miles, have been delivered at Alton; and contracts for the whole road have been entered into, and sufficient to extend the road to Carlinville is now ready for transportation.

All the lumber for the station houses, engine and machine shops have been procured. The foundations for the depot buildings, engine house and machine shop, &c., at Alton, are laid, and the walls up ten or twelve feet. Ten freight cars have been delivered at Alton, and contracts made for all the engines and cars, which are now constructing in the best shops in Massachusetts. The average force on the work, during the winter, has been about seven hundred men.

The masonry—of which a large amount has been done—is still building in the most permanent and durable manner, of stone, in all respects equal to that on the New York and Erie, the Hudson River,

the Harlem Extension, and the best constructed railroads in New York and New England. In the crossing of streams, permanent stone arches, varying from fifteen to forty feet span, have been made, instead of wooden structures—except at the crossing of Macoupin creek, where a wooden bridge of one hundred feet span is proposed to be used. The iron is of an improved pattern of H rail, weighing 56 pounds to the yard.

The contractors have commenced laying track at Alton, and are now carting iron and ties, beyond the heavy work near the city, to the prairie, which extends, uninterruptedly, for twenty miles, and which is now ready for the rails.

A definite location of fourteen miles north of Carlinville has been made, and the preliminary surveys necessary to decide on the remainder of the line to Springfield, have been completed.

The land surveys to obtain the right of way from Carlinville to this city are being made, and offers of land for a depot and machine shop, &c., have been made by our citizens, and forwarded for the consideration of the board of directors.

The chief engineer of this work is J. I. Shipman, but the principal labor of superintending the operations in the field, have devolved upon Charles Floyd-Jones, who for some years past has been employed upon the New York and Erie and the Harlem Extension railroads, and who is favorably known as a skillful and experienced engineer.

The vigor and energy with which this work has been prosecuted, has excited a very salutary effect upon the people of Illinois, and will give them an increased confidence in their ability to carry out successfully works of a similar character.

Ohio.

Bellefontaine and Indiana Railroad.

The following is a synopsis of the first annual report of the President and Directors, report of the Chief Engineer, etc., of the Bellefontaine and Indiana railroad.

This important road is known as the "third link in the great central backbone line to St. Louis." It commences at Galion, at the intersection of the main lines leading out from Boston and New York through Cleveland, and those running from Philadelphia and Baltimore through Pittsburgh, and runs thence on a general course about south west by west, through Marion, Bellefontaine and Sidney, to the newly laid out town of Union, on the State-line between Ohio and Indiana, where it forms a junction with the Indianapolis and Bellefontaine railroad, leading on to Terre Haute, St. Louis, etc. Its length is 118 1-5th miles.

James H. Godman, the President of the company, in his report, states, that the charter was obtained on the 25th of February, 1848, and that the company was organized on the 25th of November of the same year. On the 19th of February, 1849, an amendment to the charter was obtained, which authorized the company to extend their road eastwardly as far as Mansfield, in Richland county, Ohio. About the first of October, 1849, a new corps of engineers was employed.

Even at this stage of our progress, our success in the estimation of many, seemed involved in doubt. Our system of operations was undigested—the obstacles in our way not fully understood, and scarcely to be anticipated. The ground in a great measure untested—public confidence, so necessary to success, and which is generally of slow growth, had not been extended to us. We were struggling, with limited means, against adverse interests, and jealous rivals, whose kindred works occupied much of the public attention.

I have the satisfaction, however, now to inform you, that by the publication of the report and map of preliminary surveys, and through editorial and newspaper articles, pamphlets, &c., our work has become widely known, its merits and importance acknowledged, and public attention directed to it as a work most advantageously located, and possessing connections scarcely equalled by any improvement of the kind in the west, if indeed it can in the whole country.

The whole line is under contract. The subscriptions in the aggregate amount to \$550,000. The board of directors are determined to prosecute it with the utmost vigor to final completion. They say:—

We shall need an additional subscription of \$110,000 to enable us to purchase the necessary materials, [exclusive of iron] for the superstructure of the road, which we anticipate will be readily obtained within the present year if proper exertions be made by our friends.

We have the route, the country, the means; and with the requisite efforts, we shall be triumphantly successful.

In procuring the right of way, and negotiating for the settlement of damages, the board have been met by the citizens through whose property the road will pass, with a few unworthy exceptions, in the spirit of men who appreciate the advantages accruing to themselves and the public from its construction, and the right of way has in most cases been voluntarily conferred upon the company, or purchased upon equitable terms.

We make the annexed extracts from the report of W. Milnor Roberts, Chief Engineer of the company:—

Galion, the eastern terminus, is 79 miles from Cleveland, 185 miles from Pittsburgh, by way of the Ohio and Pennsylvania railroad, 57 miles from Columbus, and 178 miles from Cincinnati by way of Columbus and Xenia. But by way of your line to Bellefontaine, thence by the Mad river railroad to Springfield and the railroad to Dayton, and thence by the new railroad route through Franklin, in the valley of the great Miami, it is only 143 miles; being 15 miles shorter than the Columbus route.

The railroad from Cleveland to Galion, is now finished and in operation, and on the completion of your road to Bellefontaine there will be a continuous line over the eastern division of your road to Cincinnati; commanding a share of the business of West Liberty, Urbana, Springfield and Dayton, and the flourishing trade of the most populous and fertile valley in Ohio. This extension in the direction of Cincinnati, to whatever extent it may attract trade and travel, though secondary, and entirely subordinate to the main design of your improvement, is certainly entitled to some attention.

The following are presented as the general topographical features of the line:—

The road consists mostly of long and straight lines, connected by gentle curves, with grades of moderate ascent, averaging about 20 feet per mile. In the whole distance, 108 2-5 miles are straight, and 10 miles are curved; being about one-eleventh of the route. The road is only four miles longer than the air line distances between the points fixed in the charter.

The radii of the curves vary in length from one-fourth of a mile to two miles. The smallest radius used being 1146 feet, in three instances; one at the Bellefontaine depot, and one in the Miami valley; all of them short. In general, the changes of direction are made with radii of 2865 and 5730 feet. The maximum gradient employed is 39 feet and 60 hundredths feet per mile, and the longest grade of this kind, is less than three miles, descending from Bellefontaine westward.

On the first fifty miles from Galion westward, and on the last twenty-five miles to the western terminus, the grades, the curvature, and the amount of work, are usually moderate. The strongest grades and curves, and the most expensive work, occur on the intermediate 43 miles, extending eleven miles westward, and thirty-two miles westward of Bellefontaine. But even on this point, the line, as com-

pared with eastern railroads, is highly favorable with respect to grades, curves and cost:

Estimated Cost.

Graduation and masonry 118 1-5th miles a \$4,000.....	\$472,800 00
Graduation and masonry of 5 miles for double track at \$2,000.....	10,000 00
Railway superstructure, 118 1-5 miles at \$8,000.....	945,600 00
Railway superstructure on 5 miles sidings at \$8,000.....	40,000 00
Estimated cost of right of way, paid chiefly in railroad stock.....	12,600 00
	\$1,481,000 00
Equal to \$12,525 per mile.	
Depot buildings, water stations, &c..	\$70,000 00
Locomotives and cars.....	199,000 00
	\$1,750,000 00

Total estimated cost of railroad and equipment, \$1,750,000 00.

Equal to about \$14,800 per mile.

This estimate is intended to provide for a first class road with a rail of the latest improved pattern, weighing 60 lb per yard, laid on cross ties set 2 feet from centre to centre. The estimate for the depot buildings, stations, cars, &c., is sufficient for a business considerably more extensive than that mentioned in another part of this report, and it might not be necessary, in the first instance, to expend so much on these items.

PROSPECTS OF BUSINESS.

Considered with reference to the interior trade of the present day, there is perhaps no place in the west more advantageously situated as a grand concentrating railroad depot, than the city of Indianapolis. Located in one of the most fertile regions in the Union, that city has been fortunate in possessing far-seeing men, who, in conjunction with other intelligent minds of that State, have turned the attention of the people to the importance of an extensive system of internal improvements, many of them centering at their capital city.

Indianapolis, is, literally, the centre of a perfect web of railroads, radiating to Madison, Louisville, New Albany and Evansville, along the Ohio river; to Terre Haute, on the Wabash, and to Lafayette, Peru, and other points on the north; and by means of the Indianapolis and Bellefontaine railroad, and your continuation, connecting with all the leading eastern railroads. These numerous and important Indiana roads must necessarily concentrate an immense business at Indianapolis, the shortest and cheapest outlet of which, will be on your line to Galion, and thence to the eastern sea ports.

There are periods of the year, when the bulk of their trade will seek an eastern market by your line, in preference to the New Orleans route by the river; and at all times, great numbers of western, and south western, and many north western merchants, will strike Indianapolis in their travels.—And when the line shall be extended to St. Louis, the trade and travel directed to the same central point will be largely augmented; from Indianapolis, then, you may anticipate a lucrative and annually increasing business.

The natural increase of population, would create a constantly increasing revenue, but we must add to that the large increase arising from the extension of new railroads into more distant and already thriving regions. Independently of the thro' business which will ultimately be derived from St. Louis, and from the whole State of Missouri; and from the extension of the lines to the Pacific, carrying across this continent the commerce of our Pacific possessions, and of Asia; there will be a remunerating trade for your road from the State of Indiana alone. In addition to this, you will always command the local business of Darke, Shelby, Logan, and Marion, and important districts in Mercer, Auglaize, Miami, Champaign, Hardin, Union and Delaware counties, in Ohio. The tolls from the business of Ohio would be sufficient to sustain an enterprise costing so little.

At an early period in the future, branch railroads, or plank roads will connect your line with Greenville, the capital of Darke; Wapokanetta, the capital of Auglaize county; Troy and Piqua,

in Miami county; Kenton, the capital of Hardin county, and other towns; making this their channel of communication with the leading markets.

The railroads in Ohio, when finished with heavy rails as first class roads—such as it is contemplated to make yours, in the first instance, can certainly make net running rates of 25 miles per hour. It will be done all along the Lake Shore road. It is now accomplished daily between Albany and Buffalo; and I have no doubt it will be effected easily, on the Indiana and Illinois roads.

At this rate of travelling, taking Galion as the starting point, passengers would reach Cleveland in 3 hours, Erie in 7 hours, Dunkirk in 9 hours, Buffalo in 11 hours, Albany in 24 hours, Boston in 32 hours, and New York by New York and Erie road, in 28 hours.

Pittsburgh would be reached in 8 hours, Harrisburgh in 17 hours, Philadelphia in 22 hours; New York, through Philadelphia, in 26 hours; Baltimore by way of Harrisburgh in 21 hours, and Washington city 22½ hours.

Columbus, Ohio, in 2½ hours, Cincinnati, by way of Bellefontaine, in 6½ hours, Union, at the western end of your road, is 4½ hours, Indianapolis in 8 hours, Madison in 11½ hours, Louisville in 12½ hours, Terre Haute in 11 hours, St. Louis in 17 hours, Lafayette, Indiana, in 11 hours, Chicago, by way of Lafayette, in 15 hours.

Philadelphia to St. Louis in 40 hours—to Indianapolis in 30 hours—to Chicago in 27 hours—to Cincinnati 28½ hours!—Where will the Western States be then? And when the line shall be opened to San Francisco, to the Pacific ocean, in 5 days. On what will then be the great steamship and railroad thoroughfare between Europe and Asia?

I have only to remark, in conclusion, that if the stockholders in your company promptly furnish the funds to enable us to push forward the grading and bridging during the present season, the entire line may be finished and in operation in the fall of 1852.

The statement of the Treasurer, Wm. S. Kendrick, shows the amount of cash receipts during the year ending December 31, 1850, \$91,971 34, and the amount of expenditures to the same period \$85,913 99.

This improvement certainly holds an admirable position among the great railroad lines now in progress of completion between the Atlantic cities and the great west, and promises a liberal remuneration to its stockholders, whilst at the same time, it must benefit largely the country through which it passes.

The following letter, addressed to the editor of "The Advocate," Dublin newspaper, appeared in that paper on the 30th of October, 1850:

THE WEST OF IRELAND PACKET STATION.

SIR,—In keeping this question before your readers, it ought never to be lost sight of that the establishment of such a Station must be combined with a total revolution in the species of packets employed.

It would be irrational to have a West of Ireland station for such hulks as the Cunard or Collins fleets. There is an analogy between a horse and a steam-vessel, which may familiarly illustrate the state of the case. With a horse, and likewise with a steam-vessel, high speed and long distance are incompatible. The greater the speed in each case, the greater the exertion; and a great exertion cannot be sustained for a long journey, or for a long voyage. Hence, when fast coaches, such as the *Wonder* and the *Telegraph*, which used to travel from London to Shrewsbury, and from London to Manchester, respectively, in one day, were started for the accommodation of those to whom time is more valuable than money, it was necessary, in order to accomplish the task, that arrangements should be made for changing horses at shorter distances than had been customary with slower coaches; but the mere establishment of stabling at short stages along the road did not of itself create a fast coach. Short stages were essential towards enabling high-bred horses, with suitable light coaches,

to perform speedy work; but the clumsy stage waggons of our ancestors, which were in no respect adapted for speed, could not have gone from London to Manchester in one day, even with all the aid of stabling at short distances.

In like manner, the present sea-waggons which jog between Liverpool and New York, could not, even with the advantage of a start from the West of Ireland, perform speedy voyages across the Atlantic.

The Chancellor of the Exchequer lately quashed a Parliamentary discussion about the views of Government as to an Irish Packet Station, by stating that a clause was to provide, in the Royal mail contract, for the transfer of the packets to such a station on certain terms, if circumstances should hereafter require it; but the Chancellor of the Exchequer did not understand what he was talking about if he supposed that a mere touch of the rudder, at the command of a Treasury pen, can transform hulkish sea-waggons, such as at present go between Liverpool and New York, and between Southampton and the West Indies—distances of three or four thousand miles—with goods, and with capacity for two or three weeks' consumption of coal, into packets adapted for mail and passenger service on the Atlantic ferry between the West of Ireland and Halifax.

A packet adapted for the swift conveyance of mails, passengers, and electric intelligence between the Old World and the New at this Station, must be a totally different sort of vessel from any that exists on the ocean scale. If the Commissioners appointed by Government to report on an Irish Packet Station, approach the consideration of the subject with reference to any existing class of ships or contracts, they will be ingenious if they can discover virtue in such a station.

Approaches to the abutments of a bridge, and the bridge itself, must have a mutual adaptation; and the necessity of the Commissioners making the present state and prospects of ocean steam navigation a most prominent branch of their inquiries, must be importunately urged.

It must be observed, in passing, that an inconsistency in some advocates of a West of Ireland Packet Station, who talk loosely of "New York" as the station on the other side of the Atlantic, ought to be rectified.

Whatever sound argument there may be in favor of the West of Ireland as the European abutment of the Transatlantic ferry, must be at least equally conclusive in favor of the most easterly available port in the Western World as the American abutment. The eligible port is, unquestionably, Halifax; for, although Canso and Whitehaven, in Nova Scotia, which have been alluded to in some recent discussions, are some miles nearer Europe, their well-known liability to prolonged obstruction by ice condemns them; and there are aggravated insuperable obstacles of the same kind to the still nearer coast of Newfoundland being advantageously available. It is, therefore, for Halifax, in the Western hemisphere, as for Ireland in the Eastern hemisphere, that the struggle must be made; and such a struggle must eventually succeed. Nature decrees it.

Nothing but carelessness and indifference on the part of the British Government to national interests, together with their prolonged unacquaintance with the resources of steam navigation, can delay it.

The importance of the projected Halifax and Quebec Railway will become strikingly visible the moment that the ferry between the West of Ireland and Halifax shall have been decided upon as the great highway for mails and passengers between the two worlds.

In order to show the capabilities of the proposed ferry, a vessel, specially adapted for the service, ought to be immediately constructed, on the most improved plan. The Cunard boats must not, however, be taken as a pattern; for, notwithstanding their bombastic boasting, echoed by the press once a week, they are a national disgrace, and behind the age in every respect; their managers complacently scorning, under the shade of monopoly, all the well-established improvements of recent years, or, perhaps, judging it not politic to expose, by the introduction of improvements, the inferiority of their antiquated fleet. It is an undeniable fact,

that, whilst enormous advances have been made in other quarters in the art, of steam navigation, the Cunard fleet do not contain any one item of improvement on the old pioneer, the "Great Western," constructed thirteen years ago, with the exception that their recently built vessels are larger.

A packet for the West of Ireland station ought to be of not less than 800-horse power, adapted for the conveyance of intelligence and passengers exclusively; no larger than is requisite for obtaining a good form, and for carrying well the engines, and the fuel to be consumed in spanning the 2,200 mile ferry. Goods must go in separate vessels—viz., in auxiliary screw merchant ships. The small end of the wedge to bring forward the pretensions of the Irish station, must be a highflyer. The voyage would occupy only five or six days. It is one of those things which are impossible, simply because it is thought to be so, but for no other reason; the only difficulty is to create a belief in its possibility. If inquiry could only be aroused, the result would follow. Perhaps inquiry may be aroused, by specifying a few of the leading elements of improvement within reach.

By discarding engines of the antiquated construction of those now employed in all the trans-atlantic steamers, and which are long since discarded in every well-appointed service, that of Government included, the weight of 600 horse-power engines can be diminished 360 tons.*

This involves no untried novelty; neither does lightness involve slightness; on the contrary, the parts may be stronger, the lightness being obtained by simplicity.—(See *Mechanics' Magazine* of 21st Ser.) H.M.S. "Retribution," "Sphinx," "Furious," and a great many others, afford examples of improved engines.

By building the vessel of iron, or else—if a wooden vessel be preferred—of diagonal plank for the skin, and adequate timbers, &c., on a plan somewhat similar to what is extensively used in H.M. Navy, as exhibited in the 'Niger,' 'Basilisk,' 'Porcupine,' H.M. Yacht, and various packets, a further saving of weight may be effected, with equal strength, of at least 400 tons.

By carrying no cargo, further weight is dispensed with, of, say, 400 tons.

By starting from the West of Ireland with a fast vessel, instead of from Liverpool with a slow one, several days' supply of coal may be dispensed with, to the extent of, say, at least.... 400 tons.*

Diminution of weight to be carried by proposed dispatch vessels, as compared with present trans-atlantic steamers, at least..... 1560 tons.

Now, one of the Cunard steamers of 800-horse power, as they start from Liverpool for New York, displaces, or weighs, considerably more than 3,000 tons. Abstract 1,560 tons of lumber from this, the power of 800-horse being still retained, and see what an improved form, improved seaworthiness, and tremendous increase of speed, with the diminished resistance, is to be obtained. The foregoing is almost incredible, but fact is sometimes stranger than fiction; and this is fact. I purposely abstain

*Instead of absolutely reducing the weights to this extent, it might, in practice, be preferred to increase the effective power; but whatever might be the determination in that respect, does not substantially affect the correctness or force of these figures. The adoption of the established modern mechanism alluded to would leave it optional with the constructor in what degree he should diminish resistance, or obtain its equivalent in augmented power.

It may be well here to observe, that the hackneyed boast of the patrons of the Cunard slow coaches, that "they are sure, and seldom break down," thereby insinuating that modern improvements involve a risk of breaking down, is based on an assumption entirely gratuitous. Candid enquiry will satisfy any one, not wilfully blind, that such packets as are here advocated on modern principles, would contain no elements of fragility.

from incumbering these hints with details, and allusions to minor improvements.

The cost of such a vessel, capable of making 12 voyages, or 24 passages per annum, between Ireland and Halifax, would be £70,000 to £80,000, or perhaps something more.

No existing vessel could, however, even if relieved of cargo and coals, exhibit the merits of the Atlantic ferry. None of them are adapted, in any respect, for high speed. Their forms, and proportion of paddles, and many things, are unsuitable. To expect them, under even favorable circumstances, to have speed, would be equivalent to expecting a dray horse, even if indulged with feather weight, to keep pace with a race horse—which, of course, he could not do.

It may occur to some people, that such a sharp vessel as is here hinted at may be objectionable at sea, but such a notion is erroneous; a well-constructed sharp vessel being, in all respects, better at sea than a full one, provided that the weights are kept out of the extremities and properly placed, and provided that the total weight to be carried is not disproportioned to the buoyancy of the vessel.

The importance of a short ferry, in order to obtain the combination of sharpness of form, with great steam power and adequate buoyancy, need not be further insisted upon.

I shall be glad if any hint to be derived from a perusal of this paper prove serviceable to the advocates of an Irish Packet Station, and its corollaries, the Halifax and Quebec, and Halifax and Portland Railways.

Your obedient servant,
"1850," NOT "1838."

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.
August, 16, 1849. 6m33

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TWO Locomotive Engines—104 tons weight, built by Baldwin. Also Four Eight-wheeled Passenger Cars, with side seats, all in good running order. Apply to WM. E. MORRIS, Office of Philad. Germantown & Norristown Railroad Co., 9th and Green sts., Philadelphia. 3m5

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THE subscribers continue to manufacture, with increased facilities, Hook and Flat Head Railroad Spikes and Chairs. The points being finished by hand, have a long taper, and sharp point, and are much superior to those made entirely by machinery.

We are also prepared to furnish Wrought Chairs, Clamps and Fastenings of every description, either punched or plain. The best quality of refined iron is used in the above articles, and our prices will be made as favorable as any in the country.

The patent Clinch Spike will be found an improvement to secure the rail at the joints.—They drive in the manner shown and are not liable to work loose.

All communications, addressed to the undersigned, will meet with prompt attention.

SMITH & TYSON,
No. 25 South Charles st., Baltimore Md.

To Contractors.

ENGINEER'S OFFICE CENTRAL OHIO R. R.,
Zanesville, March 20, 1851.

SEALED PROPOSALS for the Masonry of a Railroad Bridge across the Muskingum River at Zanesville, will be received at this office until the 15th of May next.

Also for the Iron or Wooden Superstructure of said Bridge, and for draw bridge across the Canal.

Plans and specifications furnished on the 1st of May next. Bidders may furnish their own plans and specifications, if filed at this office prior to that day.

By order of the Board.

ROBERT MAC LEOD,
Chief Engineer.

Notice to Contractors.

Virginia Central Railroad.

SEALED PROPOSALS will be received at the Engineer's Office of the Virginia Central Railroad, Charlottesville, on the 7th of May, 1851, for the Grading, Masonry and Brickwork of that portion of the line extending from Woodville to Blair Park, a distance of nine miles. Drawings and Specifications of the work may be seen from the 5th to the 7th of May inclusive. The best of references and an energetic prosecution of the work will be required.

Contractors are requested to state what work they are engaged on and when it will be completed. The directors reserve the right to accept or reject proposals, as they consider the interests of the company require. The names in full of all the parties must be given in the proposal.

By order of the President and Directors.

T. COLDEN RUGGLES,
Chief Engineer.

Charlottesville, April 8th, 1851.

ENGINEERS.

Atkinson, T. C.,

Mining and Civil Engineer,
Orange and Alexandria Railroad, Alexandria, Va.

Clement, Wm. H.,

Little Miami Railroad, Cincinnati, Ohio.

Cozzens, W. H.,

Engineer and Surveyor, St. Louis, Mo.

Alfred W. Craven,

Chief Engineer Croton Aqueduct, New York.

Floyd-Jones, Charles,

Alton and Sangamon Railroad, Alton, Illinois.

Gay, Edward F.,

Columbia and Philadelphia Railroad, Philadelphia Pa.

Gilbert, Wm. B.,

Rutland and Burlington Railroad, Rutland, Vt.

Gzowski, Mr.,

St. Lawrence & Atlantic Railroad, Montreal, Canada.

Grant, James H.,

Nashville and Chattanooga R. R., Nashville, Tenn.

S. W. Hill,

Mining Engineer and Surveyor, Eagle River, Lake Superior.

Holecomb, F. P.

Southwestern Railroad, Macon, Ga.

Latrobe, B. H.,

Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,

Buffalo and Conhocton Valley Railroad, Bath, N. Y.

Morris, Elwood,

Schuylkill Navigation, Schuylkill Haven, Pa.

Nott, Samuel,

Lawrence and Manchester Railroad, Boston.

Osborne, Richard B.,

Civil Engineer, Philadelphia.

Prichard, M. B.,
East Tennessee and Georgia R. R., Cleveland, Tenn.

W. Milnor Roberts,
Bellefontaine and Indiana Railroad, Marion, Ohio.

Roberts, Solomon W.,
Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Sanford, C. O.,
South Side Railroad, Virginia.

Schlatter, Charles L.,
Northern Railroad (Ogdensburg), Malone, N. Y.

Steele, J. Dutton,
Pottstown, Pa.

Trautwine, John C.,
Civil Engineer and Architect, Philadelphia.

Tinkham, A. W.,
United States Fort, Bucksport, Me.

Troost, Lewis,
Alabama and Tennessee Railroad, Selma, Ala.

Whipple, S.,
Civil Engineer and Bridge Builder, Utica, N. Y.

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The House has lately undergone a thorough repair,
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STATE ASSAYER, late Geologist to Maine, Rhode
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offers his services to his friends and the public in mak-
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Agriculture and the Manufacturing Arts. Particular
attention will be paid to the exploration of mines and
to assaying of ores of the metals.
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July, 27, 1849.

James Herron, Civil Engineer,
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Models of this Track, on the most improved plan,
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Machinists, Car Man-
ufacturers, etc., etc.**

CHARLES T. GILBERT,
NO. 80 BROAD ST., NEW YORK.
IS prepared to contract for furnishing at manufac-
turer's prices—
Railroad iron,
Locomotive Engines,
Passenger and Freight Cars,
Car Wheels and Axles,
Chairs and Spikes.

Orders are invited; and all inquiries in relation to
any of the above articles will receive immediate atten-
tion

**Manufacture of Patent Wire
ROPE AND CABLES;**

For Inclined Planes, Suspension Bridges, Standing
Rigging, Mines, Cranes, Derrick, Tillers, &c., by
JOHN A. ROEBLING, Civil Engineer,
TRENTON, N. J.

FORGING.

Ranstead, Dearborn & Co.,
MANUFACTURERS OF
LOCOMOTIVE CRANKS AND CAR AXLES,
ALSO
WROUGHT IRON SHAFTING,
And All Kinds of Hammered Shapes.
Office 25 Foster's Wharf, Boston.

Samuel D. Willmott,
MERCHANT, AND MANUFACTURER OF
CAST STEEL WARRANTED SAWS,
—AND FILES—
IMPORTER OF THE
GENUINE WICKESLY GRINDSTONES
NO. 8 LIBERTY STREET,
NEW YORK.

Railroad Instruments.

THEODOLITES, TRANSIT COMPASSES,
and Levels, with Fraunhoffer's Munich Glasses,
Surveyor's Compasses, Chains, Drawing Instru-
ments, Barometers, etc., all of the best quality and
workmanship, for sale at unusually low prices, by
E. & G. W. BLUNT,
No. 179 Water St., cor. Burling Slip.
New York, May 19, 1849.

IRON.

Iron.

Pig Iron, Anthracite and Charcoal; Boiler and Flue
Iron, Spring and Blistered Steel, Nail Rods, Best Re-
fined Bar Iron, Railroad Iron, Car Axles, Nails, Stove
Castings, Cast Iron Pipes of all sizes, Railway Chairs
of approved patterns for sale by
COLEMAN, KELTON & CAMPBELL,
109 N. Water St., Philadelphia.

Iron Store.

THE Subscribers, having the selling agency of the
following named Rolling Mills, viz: Norristown,
Rough and Ready, Kensington, Triadelphia, Potts-
grove and Thorndale, can supply Railroad Companies,
Merchants and others, at the wholesale mill prices for
bars of all sizes, sheets cut to order as large as 68 in.
diameter; Railroad Iron, domestic and foreign; Loco-
motive tire welded to given size; Chairs and Spikes;
Iron for shafting, locomotive and general machinery
purposes; Cast, Shear, Blister and Spring Steel; Boil-
er rivets; Copper; Pig iron, etc., etc.

MORRIS, JONES & CO.,
Iron Merchants,
Schuylkill 7th and Market Sts., Philadelphia.
August 16, 1849. 1y33

Bowling Iron. Stamped B.O.

Railway Tire Bars
Locomotive and other Axles
Boiler Plates
Rivet Iron
Locomotive Frame do
Bars,
and every other description of this superior Iron.

The subscribers, agents for the sale of Bowling Iron, are prepared to execute orders for importation, especially for railway and machinery uses, with despatch from the manufacturers.

RAYMOND & FULLERTON, 45 Cliff st.

**Ibbotson, Brothers & Co's
CELEBRATED CAST STEEL**

Best Cast Steel Royal Improved Files, well known as better adapted for Engineers' and Machinists' purposes than any now in use in the United States.

Every description of Square, Octagon, Flat and Round Cast Steel, Sheet, Shovel and Railway Spring Steel, etc., and Steel to order for any purposes—manufactured at their works in Sheffield—and universally known by the old stamp "Globe."

HENRY I. IBBOTSON, Agent,
218 Pearl st., New York.

**Smith & Tyson,
IRON COMMISSION MERCHANTS,
BALTIMORE.**

REFINED Juniated Charcoal Billet Iron for Wire. Do. for Bridging, of great strength. Flat Rock, Boiler and Flue Iron, rolled to pattern. Elba, Wheel Iron of great strength and superior chilling properties. Elba Forge Iron, American Shot Iron, Cut Nails, Spikes and Brads, Nail and Spike rods, Railroad Spikes of superior quality, Wrought Chair plates of any pattern, punched or plain.

**WILLIAM JESSOP & SONS'
CELEBRATED CAST-STEEL.**

The subscribers have on hand, and are constantly receiving from their manufactory,

PARK WORKS, SHEFFIELD,

Double Refined Cast Steel—square, flat and octagon. Best warranted Cast Steel—square, flat and octagon. Best double and single Shear Steel—warranted. Machinery Steel—round.

Best and 2d gy. Sheet Steel—for saws and other purposes.

German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.

Genuine "Sykes," L Blister Steel.

Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by

WM. JESSOP & SONS,
91 John street, New York.

Also by their Agents—

Curtis & Hand, 47 Commerce street, Philadelphia.
Alex'r Fullerton & Co., 119 Milk street, Boston.

Stickney & Beatty, South Charles street, Baltimore.
May 6, 1848.

Railroad Iron.

B. O. Railway Tires, Railway Wheels,
Scotch Pig Iron, Tin Plates and Banca Tin,
Muntz Patent Metal Sheathing,
Baltimore Copper.

Contracts for Rails made on behalf of the manufacturers, for delivery at any ports in the United States, at fixed prices.

Bowling Tires and Tire Bars and Scotch Pigs imported to order.

Muntz's Ship-sheathing, and a general stock of Tin Plates and Banca Tin in store, and for sale by

RAYMOND & FULLERTON, 45 Cliff st.

IRONDALE PIG METAL, MANUFACTURED
and for sale by the Bloomsburg Railroad Iron Co.

LINDLEY FISHER, Treasurer,
75 N. Water St., Philadelphia.

Car Wheel Iron.

The celebrated cold blast "Conowingo" Pig Iron, for Railroad Wheels, Chilled Rolls, etc., for sale by
E. PRATT & BROTHER,
Baltimore, Md.

Railroad Iron.

3,000 TONS C. L. MAKE 63½ lbs. per yard, now landing and to arrive.

Also contracts made for future delivery of above superior make English Iron.

300 Tons Banks Best Iron, Round, Square and Flat.
200 " English Bar " " " "

10 " 9-16 Square Iron for Railroad Spikes.

For sale in lots to suit purchasers by

DAVID W. WETMORE.
New York, March 26, 1850. 3m

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

**JOHNSON, CAMMELL & Co's
Celebrated Cast Steel,**

AND
ENGINEERING AND MACHINE FILES, which for quality and adaptation to mechanical uses, have been proved superior to any in the United States. Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cyclops Steel Works Sheffield.

JOHNSON, CAMMELL & CO.,
100 William St., New York.

November 23 1849.

Bowling Tire Bars.

40 Best Flange Bars 5½x2 inches, 11 feet long.
40 " " 5½x2 " 7 feet 8 in. long.
40 " Flat " 6x2 " 11 feet long.
40 " " 6x2 " 7 feet 8 in. long.

Now in store and for sale by

RAYMOND & FULLERTON,
45 Cliff street.

**Wheel, Forge and Foundry
Iron.**

LOCUST GROVE Wheel Iron of great strength and superior chilling property.

Balt. Charcoal Forge Iron, from Patuxent, Curtis Creek and Gunpowder furnaces.

Elkridge Foundry Iron, of superior strength and softness. Anthracite and Charcoal Iron from Pennsylvania and Virginia. Gas and Water Pipes, Lamp Posts from Elkridge furnace.

LEMMON & GLENN,
62 Buchanan's Wharf, Baltimore.

Railroad Iron.

1650 Tons, weighing about 61 lbs. per yard, 40 tons, weighing about 52 lbs. per yard, and 825 tons, weighing about 53½ lbs. per yard, of the latest and most approved patterns of T rail, for sale by
BOORMAN, JOHNSTON & CO.,
119 Greenwich street.

New York, Aug. 26, 1850.

N.B.—B., J. & Co are also prepared to take contracts for English rails, delivered in any of the Atlantic ports of the United States.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract to deliver Rails of superior quality, and of any size or pattern, to any ports of discharge in the United States.

COLLINS, VOSE & CO.,
74 South St.

New York, June 1, 1850.

Tredegar Iron Works.

ROLLING MILL FOUNDRY AND MACHINE SHOPS. The undersigned continues to manufacture at his Works in this city (from best charcoal metal) Bar Iron of every description, embracing—Rounds and Squares, from ½ to 5 inches diameter. Flats, from ½ to 7 inches, all thicknesses.

Bands and Scrolls, all sizes. Boiler plate and Plough Iron. Railroad and Locomotive Axles and Tires. Locomotive Frames, Spikes and Plates. Hoops, Ovals, Half Ovals, Half Rounds, Angle, T, L, and indeed every description of Iron usually manufactured, all of which he warrants to be equal to any made in this country. He also manufactures at his Foundry and Machine Shops all descriptions of Railroad Work, say, Locomotives, Railroad Wheels and Axles complete and ready for the road, Railroad Chairs, etc. Also, Marine and Stationary Engines all sizes, Sugar mills and Engines, Horse mills, and every kind of Machinery usually required for the operations of the country. He has paid particular attention to getting up machinery, etc., for Gold Mine operations, and those in want of such work might find it to their advantage to give him a call.

J. R. ANDERSON.

Richmond, Va., Sept. 10, 1850.

CUT NAILS OF BEST QUALITY, BAR IRON (including Flat Rails) manufactured and for sale by

FISHER, MORGAN & CO.,
75 N. Water St., Philadelphia.

Car Wheel Iron.

100 Tons "Columbia" No. 2 Cold Blast Charcoal Iron.

300 Tons "Salisbury" No. 1, do. do.
For sale by CHARLES T. GILBERT,
No. 80 Broad st.

New York, Sept. 21, 1850.

Railroad Spikes.

THE subscribers are prepared to make and execute contracts for Railroad Spikes of a superior quality, manufactured by the New Jersey Iron Company, at Boonton.

DUDLEY B. FULLER & CO.,
139 Greenwich st. corner of Cedar.

**S. S. Keyser & Co.,
IRON WAREHOUSE,**

Corner of South and Pratt Streets,
BALTIMORE, MD.

Selling Agents for the Rough and Ready Bar Iron and Elk Boiler and Flue Iron Rolling Mills, Sarah and Taylor Furnaces, and Wrightsville Hollow Ware Foundry, and Dealers in Bar and Sheet Iron, and Cast, Sheer, German, Blister, Spring and Electroplated Steel, etc., etc.

Tubes.

The undersigned are in direct communication with the Birmingham Patent Lap Welded Iron Tube Company, for the sale of their very excellent and superior Boiler and Gas Tubes in large or small quantities.—These Tubes are sold very extensively in England and on the continent of Europe are sold exclusively by

WM. BIRD & CO.,
Iron and Tinplate Merchants,
44 Wall st., New York
5 Martin's Lane, City, London,
and 140 Buchanan st., Glasgow.

Railroad Spikes, Boiler Rivets, etc.

THE Subscribers, Agents for the sale of James S. Spencer's, Jr., Railroad and Boat Spikes, Boiler Rivets, and Wrought Iron Chairs for Railroads, made at his Works near this city, will execute all orders with promptness, despatch, and of the best quality.

ALSO IMPORTERS of English refined and Merchant bar Iron; Extra refined Car and Locomotive Axles (from ¾ to 6½ inches in diameter); B. O. Locomotive Tire (welded by Baldwin). Also, supply Boiler and Flue Iron cut to pattern or otherwise.—Spring, Shear, and Cast Steel, etc., etc., etc.

T. & E. GEORGE.

Philadelphia, November 14, 1850.

Railroad Iron.

THE UNDERSIGNED, HAVING made arrangements abroad, are prepared to contract for the delivery of Foreign rails, of approved brands upon the most favorable terms.

They will also make contracts for American rails, made at their Trenton works, from Andover Iron, in whole or in part, as may be agreed upon.

They are prepared to furnish Telegraph, Spring and Market Wire; Braziers and Wire Rods; Rivets and Merchant Bars to order, all made exclusively from Andover Iron. The attention of parties who require iron of the very best quality for special purposes, is respectfully invited.

COOPER & HEWITT,
17 Burling Slip, New York.

February 15, 1850.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract for the delivery of English, Welsh and Scotch Rails, of any pattern and weight, also for every description of English, Welsh, Scotch, and Swedish Iron, Railway Chairs and Spikes, Rivets, Bolts, Nuts, Washers, Chain Cables, Anchors, Tin Plates, German Spelter, Iron Castings, and every description of Machinery.

WILLIAM BIRD & CO.,
Iron and Tin Plate Merchants,
44 Wall st., New York.

And at 5 Martin's Lane, City, London,
and 140 Buchanan st. Glasgow.

July 27th, 1850.

Railroad Iron.

THE "Montour Iron Company" is prepared to execute orders for Rails of the usual patterns and weights, and of any required length not exceeding 30 feet per rail. Apply at the office of the Company,
No. 73 South 4th st., Philadelphia,

Or to the Agents,
CHOUTEAU, MERLE & SANFORD,
No. 51 New st., New York.

September, 1850.

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. J. F. WINSLOW, *President*.

Troy, N. Y.
ERASTUS CORNING, Albany
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md

November 6, 1848.

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phoenix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehanna river; which two establishments are now turning out upwards of 1800 tons of finished rails per month.

Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.

REEVES, BUCK & CO.
45 North Water St. Philadelphia.

March 15, 1849.

**LAP—WELDED
WROUGHT IRON TUBES**

FOR

TUBULAR BOILERS,
FROM ONE AND A QUARTER TO SEVEN
INCHES IN DIAMETER.

THE ONLY Tubes of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER & SON, Patentees,
28 Platt street, New York.

Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron.

THOMAS B. SANDS & CO.,
73 New street,
New York.

February 3, 1849.

Glendon Refined Iron.

Round Iron, Band Iron, Hoop Iron,
Square " Flat " Scroll "

Axles, Locomotive Tyres,

Manufactured at the Glendon Mills, East Boston, for sale by

GEORGE GARDNER & CO.,

5 Liberty Square, Boston, Mass.

Sept. 15, 1849.

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for rail roads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.

JOHN F. WINSLOW, *Agent*.

Albany Iron and Nail Works, Troy, N. Y.

The above Spikes may be had at factory prices, at Erastus Corning & Co Albany; Merrill & Co., New York; E. Pratt & Br. & Co., Baltimore, Md.

AMERICAN PIG IRON.

"POUGHKEEPSIE" brand, Dutchess Co., N. Y.
"GLEDON" brand, Lehigh county, Pa.

Orders for the above two well known brands will be received, and promptly executed, by

J. & L. TUCKERMAN,
69 West St., New York.

**Faggotted Car and Engine
Axles**

FORGED by RANSTEAD, DEARBORN & Co.,
Boston, Mass.

These Axles enjoy the highest reputation for excellence, and are all warranted.

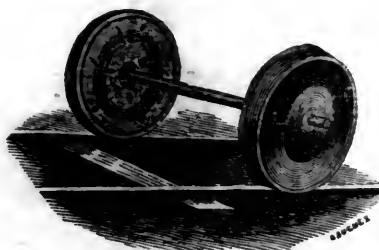
Boston Locomotive Works,

—Late Hinkley & Drury—

No. 380 Harrison Avenue,
BOSTON.

Locomotive and Stationary Steam Engines; Boilers; Iron, Brass, Copper and Composition Castings; Copper-smith's Work, and all kinds of Railroad Machinery furnished at short notice.

ALSO

**Van Kuran's Improved Railroad Wheel,**

Patented May 1, 1849. Manufactured under the personal superintendence of the Patentee, as above.

Orders for any quantity of wheels executed with dispatch, and wheels and axles fitted in the very best manner and at the lowest rates. Address

DANIEL F. CHILD, Treasurer, Boston.

**Providence Tool Co.,**

MANUFACTURERS OF

Plane Irons, Tooth Irons, Soft Moulding and Rabbet Irons, Cornice Irons, Plow Bits, and Planing Machine Knives:

NUTS, WASHERS AND BOLTS.

—ALSO—

PLATE HINGES AND PICK AXES.

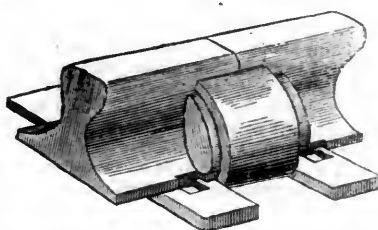
They are prepared to execute orders for all descriptions of Cold Punching and Job Work.

WM. FIELD, Agent. RUFUS WATERMAN, Treas.
PROVIDENCE, R. I.

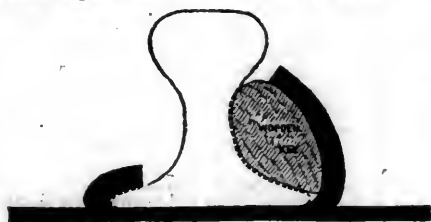
Railroad Iron,

SPIKES, AND

WROUGHT IRON CHAIRS.



THE Undersigned, Agent for Manufacturers, is authorized to contract for Welsh Railroad Iron of the best quality, and deliverable at any port on favorable terms, also Spikes and Wrought Iron Chairs, made from the best iron, and of any pattern and weight. The new Wrought Iron Chair, with the introduction of a "Key," as per the annexed plan, will be found a great improvement on the old pattern.



Boiler Plates of superior quality, perfect regularity in the squaring and thickness, and made with great care.

Samples can be seen at the office, No. 20 Beaver st.
CHARLES ILLIUS.

TO RAILROAD COMPANIES, CAR MANUFACTURERS, etc.

THE Undersigned hereby gives public notice, that the Commissioner of Patents, pursuant to his decision in relation thereto, on the 8th day of October, 1850, issued to him a Patent for the sole right to manufacture, and exclusive use of the INDIA RUBBER CAR SPRING, on account of priority of invention of said Spring.

F. M. RAY.

New York, Oct. 23, 1850.

Iron Trade of Pennsylvania.

DOCUMENTS and Statistics relating to the Manufacture of Iron in the State of Pennsylvania—giving a history of the manufacture from its commencement to this date, illustrated by diagrams. Also tables giving the address and capacity of every establishment in the State. Prepared by direction of the late convention of the trade held in Philadelphia. For sale by

LINDSAY & BLACKISTON, Philadelphia.

FIELDING LUCAS, Jr., Baltimore.

HENRY G. NICHOLS, 79 Water st., N. Y.

or at this office—price \$1 00.

It will be sent by mail to any order enclosing the money, and post paid.

Ulster Iron.

THE ULSTER IRON WORKS, Saugerties, N. Y., continue in full operation. Orders for round, square, flat, band, hoop and scroll iron, will be received and promptly executed by

J. & L. TUCKERMAN,
69 West St., New York.

Lovegrove's Patent Cast Iron Water and Gas Pipes.

THE Subscriber, the Inventor and Patentee of the Centrifugal mode of giving form to metallic substances while in a molten state, is preparing to make Cast Iron Water and Gas Pipes, of any dimensions, at prices much lower than they can be made in the old manner, and the pipes warranted to stand a pressure of three hundred pounds to the square inch, and to be soft enough to drill. Steam Engines and all kinds of machinery. Cast Iron Doors and Frames, and Mill Castings of every description, made to order.

THOMAS J. LOVEGROVE,

Machinist and Founder,

West Falls Avenue, below Pratt st., Baltimore.

American Railroad Iron.

1000 Tons, weighing 50 lbs. per yard, manufactured by Reeves, Abbott & Co., at the Safe Harbor Iron Works, and now lying in yard at Brooklyn, for sale by

CHOUTEAU, MERLE & SANFORD,
No. 51 New street.

Spikes, Spikes, Spikes.

ANY person wishing a simple and effective Spike Machine, or a number of them, may be supplied by addressing

J. W. FLACK, Troy, N. Y.

or, MOORE HARDWAY, Richmond, Va.

March 6, 1850.

Railroad Iron.

2000 Tons, weighing 53 pounds per lineal yard, of the most approved pattern of T rails, in store and to arrive, for sale by

COLLINS, VOSE & CO.,
74 South St.

New York, June 1, 1850.

American Cast Steel.

THE ADIRONDAC STEEL MANUFACTURING CO. is now producing, from American iron, at their works at Jersey City, N. J., Cast Steel of extraordinary quality, and is prepared to supply orders for the same at prices below that of the imported article of like quality. Consumers will find it to their interest to give this a trial. Orders for all sizes of hammered cast steel, directed as above, will meet with prompt attention.

May 28, 1849.

Railway Iron.

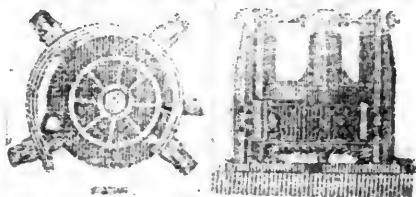
THE Subscribers will contract to deliver, in the course of the ensuing Spring and Summer, the best English Rails, made by a particular specification, and of any pattern required.

DAVIS, BROOKS & CO.,
69 Broad st.

On hand for sale, English rails of 53 lbs. to the yard, made by particular specifications.
January 10, 1851. 2m

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phoenixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous; considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll sounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y.

P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery for making Spikes, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps; Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

CHILLED RAILROAD WHEELS.—THE UNDERSIGNED are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

Brown's Old Established SCALE WARE HOUSE,

NO. 234 WATER ST., NEW YORK.

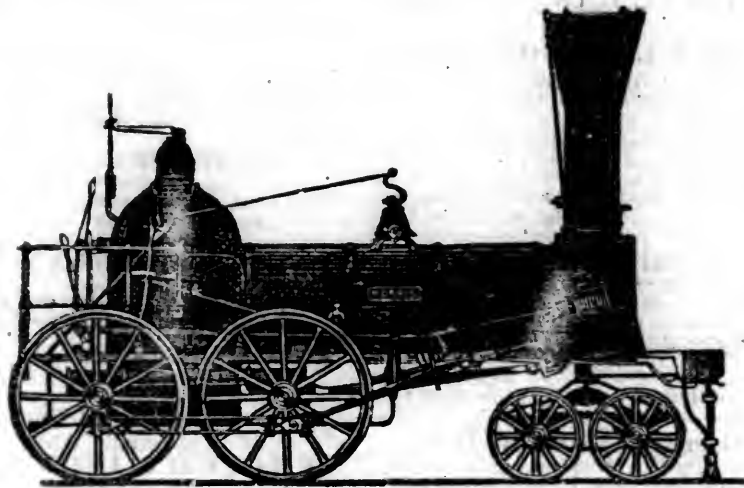
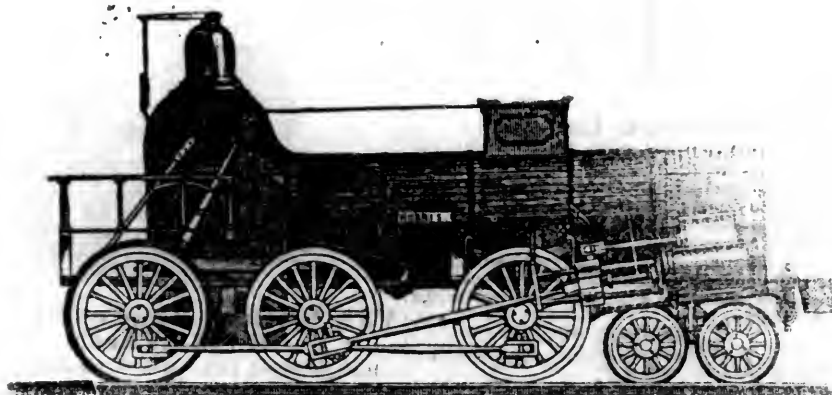
THE Subscriber, Practical Manufacturer of Scales of every description, respectfully asks the attention of Railroad Companies to his Improved Wrought Iron Railroad Track and Depot Scales which for strength, durability, accuracy, convenience in weighing, and beauty of workmanship, are not surpassed by any others in this country.

He is aware that this is rather a bold assertion for him to make, yet he can say with confidence that they have but to be tried to give them precedences over all others.

J. L. BROWN.

Bank Scales made to order, and all Scales of his make Warranted in every particular.

References given if required

NORRIS' LOCOMOTIVE WORKS.
BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA.

THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size. Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tyres are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS

PATENT MACHINE MADE HORSE-SHOES.



The Troy Iron and Nail Factory have always on hand a general assortment of Horse Shoes, made from Refined American Iron.

Four sizes being made, it will be well for those ordering to remember that the size of the shoe increases as the numbers—No. 1 being the smallest.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

Etna Safety Fuse.

THIS superior article for igniting the charge in wet or dry blasting, made with DUPONT'S best powder, is kept for sale at the office and depot of

REYNOLDS & BROTHER,

Sole Manufacturers,
No. 85 Liberty St.
NEW YORK.

And in the principal cities and towns in the U. States.

The Premium of the AMERICAN INSTITUTE was awarded to the Etna Safety Fuse at the late Fair held in this city.

November 3, 1849.

ly

UNION WORKS,

North street, opposite the Railroad Depot,
BALTIMORE.

Poole & Hunt,

Manufacturers of Steam Engines and Mill Gearing, Machinists' Tools, and all kinds of heavy and light Machinery.

Also put up Arrangements of Wrought Iron Pipes for heating buildings and conveying steam or water. Castings of every kind furnished at short notice.

Every exertion will be made to insure the satisfaction of customers.

Patent Machine Picket Fence

SIX DIFFERENT STYLES of this fence are now made by patent machinery; and is by far the most economical fence for Railroads, Farms, Yards, etc., ever yet offered to the public, costing only from 4 to 30 cents per foot, according to pattern; and is so put up as to be shipped at a trifling expense. Full particulars will be furnished, by addressing the subscriber, to whom all orders should be sent.

N. STRATTON, Troy, N. Y.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

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ASSISTANT EDITORS,

J. T. HODGE, *For Mining and Metallurgy.*

GEN. CHAS. T. JAMES, *For Manufactures and the Mechanic Arts.*

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American Railroad Journal.

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Saturday, May 3, 1851.

European and North American R.R.

Most of our readers will undoubtedly recollect, that the Legislature of the State of Maine, at its session in the summer of 1850, made an appropriation for a preliminary survey of the line of the above road from Bangor to the eastern boundary of said State, at a point "best fitted to connect with the extension of the above road through the Province of New Brunswick." The charge of making this survey was committed to A. C. Morton, Esq., Chief Engineer of the Atlantic and St. Lawrence railroad, and we have now before us his report, accompanied by a large and carefully prepared map of the entire route.

The above project possesses a deep interest, and has attracted great attention, not only from its magnitude and the interesting character of the country traversed, but from its ultimate connection with the great route of travel between the old world and the new. It proposes to throw out a great trunk line of railroad, nearly 450 miles in

advance of all works of a similar kind, and in this respect it has no parallel in this country. Its direction is nearly the same with that pursued by the steamers running between Europe and all the North American ports: and this fact will, without doubt, cause it to be adopted as a part of the route which is now entirely performed by water. It will open too a new country, a terra incognita to a large portion of the people of the United States, and one of the richest in natural resources, and in its geological characteristics, one of the most interesting portions of the continent.

The line of the European and North American railroad commences at Bangor, and is made up of the following links, viz:

Length of line in Maine.....	96 miles.
" " New Brunswick.....	200 "
" " Nova Scotia.....	124 "
	420 miles.

The survey made by Mr. Morton was confined to the State of Maine; but his report embraces the results of the surveys of the line in both Provinces, together with a general description, and statistics of the entire route. In reference to the report, it is not too much to say, that it is a model of its kind, and presents in the clearest and most distinct manner, all the leading characteristics of the route and the country traversed, with a vast amount of statistical and geographical information which must be new to most of our readers. We shall therefore make no apology for presenting copious extracts from it in our paper.

The general characteristics of that part of the route through Maine is remarkably favorable for a railroad, owing to the uniform configuration of all that part of the State lying east of the Penobscot river. On the east of this, the range of highlands which skirt almost the entire coast of that State, assumes a more rugged and lofty character, through which the streams, draining the territory beyond, precipitate themselves over steep precipices, directly into tide water. North of this range, the country falls off, into a comparatively level plain, much less elevated than any other portion of the State. Soon after crossing the Penobscot above Bangor, the line surveyed, turns the northern flank of a spur of this range which bounds the Penobscot river and bay on the east, and reaches, by an easy slope, and by a very direct route, the table land of which we have spoken. The road will

probably cross the Penobscot about 12 miles north of Bangor, and will then take a tributary of that river, and pursue a generally eastern direction to the St. Croix river, the eastern boundary of Maine, and nearly on the dividing line between the waters running north into the Penobscot and St. Croix river, and those running south into the ocean. As almost the whole extent of country on this portion of the line is an entire wilderness, without any commanding point, controlling the location of the line, and as further survey may cause the adoption of a very different route from the one surveyed, we shall copy such parts of the report as give the general features of the line, with estimates of its cost.

The following are the estimates of cost based upon the construction of a first class road:

ESTIMATE.

ITEMS.	Quantities.	Prices.	Am't.	Aggregate.
		Dolls.	Dolls.	Dollars.
Clearing & grubbing.....			50,000	50,000
Earth Work.....	Cub. yds.			
Excavation earth, including haul.....	2,856,000	\$0 30	856,800	
Do. solid rock.....	200,000	1 00	200,000	
Do. loose stone.....	88,000	0 60	52,800	
Do. pit.....	72,195	0 35	25,269	1,134,869
Masonry.				
In bridges, abutments and piers.....	30,000	6 00	180,000	
In culverts.....	28,710	3 00	86,230	
Protection walls.....	51,952	1 50	77,928	
Bridge and culvert foundations.....			50,000	394,058
Bridge Superstructure.....	Lineal ft.			
Truss bridging.....	2,500	18 00	45,000	
Do. do.....	1,100	12 00	13,200	
Pile bridging.....	1,000	7 00	7,000	65,200
Track.	Miles.			
Main track.....	95.5	7,500	716,250	
Side tracks & fixtures.....			30,000	746,250
Equipment.....				172,200
Buildings.				
Buildings and fixtures at Bangor.....			20,000	
Do. do. Calais.....			20,000	
Intermediate stations.....			14,000	64,000
Land for roadway and stations.....			40,000	40,000
Total cost.....				2,666,577
Av. cost per mile.....			27,922	

pronounced, by scientific men, to be impracticable to navigate the Atlantic ocean by steam. It seemed to have been forgotten in 1837, that, as far back as 1819, a steamer had made a successful voyage across the Atlantic. A steamer sailed from Savannah, May, 1819, having the same name as that of the port from which it sailed, and reached Liverpool in safety.

In September, 1833, the Royal William, of 180 horse power and 100 tons burthen, sailed from Quebec to Pictou and thence to London.

But it was not till 1838 that the practicability of ocean steam navigation was fully established, by the arrival of the "Sirius" and the "Great Western," one from Liverpool, and the other from Bristol, in New York harbor. To sketch the progress of the British Steam Marine for the last thirteen years, would furnish a history of one of the most interesting series of events on record.

In 1848 the ocean steam ships of the British Government, formed a grand aggregate of 115 in all, and the number has since been largely augmented.

Regular lines are established to India by the Red Sea route, to Australia, to the West Indies, to Panama and the Pacific, to various ports of Europe, in addition to the North American line known as "Cunard's line," whose contract embraces 9 first class steamers, running alternately between Liverpool, and Boston and New York.

The progress of steam navigation in this country, for the last five years has been still more rapid. Our Government have recently established lines to Liverpool, to Bremen, to Havre and Glasgow. The contract for these lines contemplate the running of 13 steamers the present year. During many weeks of last year, no less than four arrivals of ocean steamers from Europe occurred in each week, and a daily arrival may be safely anticipated within a few years at farthest.

The average time of the eastern passages of the Collins line between New York and Liverpool for 6 months, from May to October 1850, inclusive, was 11 days, 12 hours and 51 minutes, and the average of the western passages was 11 days, 13 hours and 13 minutes. These facts show a slight saving on the average time by the Cunard line, for the same period, amounting to only one and a half hours on the eastern passages, but on the western passages there is a difference of about one day.

The shortest voyages which have yet been made were by the steamship Asia of the Cunard line, from New York, which was 10 days, 9 hours and 30 minutes, and the recent trip of the Pacific of the Collins line, from Liverpool to New York in 9 days, 20 hours and 15 minutes.

There can be no doubt but that great improvements will be made in the model and machinery of steamships, by which their speed will be materially increased. But there are other means which may be resorted to which will aid in an important degree in accomplishing this desirable object. It is proposed to make Galway or some port on the western coast of Ireland, and Halifax in Nova Scotia, the points of departure for steamships, and this reduces the length of voyage about one third from that between Liverpool and New York, consequently the tonnage of fuel may be reduced in like proportion. Vessels running in connection with railways at either extremity of the voyage, should be confined to the transportation of passengers and the mails, or at most, should be permitted to transport only light and valuable merchandise. Vessels therefore of increased size and strength, with more powerful engines, less weight of fuel, with only so much freight as may be required for steadiness, would doubtless attain much greater speed in running between these points, than could be made by the same vessel with fuel for a voyage one-third longer and loaded with freight. This saving in time and the further saving by the use of railways from Galway to London and from Halifax to New York, upon which the speed will be more than double that of the steamers, would probably make a saving of some two or three days from the time required by the present mode of conveyance between London and New York.

By this line, passengers will have railway conveyance from New York and all the cities of the Union, and from Quebec, Montreal and every part of Canada to Halifax, where they would take the

steamers for Galway direct, crossing Ireland by railway to Dublin, the channel by steamboat to Holyhead, thence to London and every part of England by railway.

This line would not only materially reduce the length of the time required for the whole journey, but lessen by one third the length, the annoyances and dangers of the voyage across the Atlantic.

It is maintained by some, that passengers generally, would embark at Liverpool and land at New York, thus performing the whole journey by water, in preference to traveling by railway to Galway, taking the steamer to Halifax, and thence by railway to New York, or having arrived at Halifax would prefer to continue on in the steamer to Boston and New York.

It is hardly necessary to argue this point, for it does not appear probable that any person who has ever experienced the annoyance of a sea voyage, would choose to embark on board of a vessel, thereby increasing the danger and length of his journey, in preference to a comfortable seat in the railway car.

With cars especially arranged with sleeping accommodations for passengers requiring the greatest dispatch, and with the improvements of track which are attainable by the adoption of the continuous rail and other changes, the traveller will be relieved from any apprehensions of increased fatigue over that by the sea voyage from Halifax to New York.

Whatever may be the result, as far as relates to passengers residing at New York city and south of it—in reference to all those residing north and east, there cannot be a question as to the course they will ordinarily take.

A merchant of Montreal for instance will by the proposed railway, be able to reach Halifax with nearly the same ease as he can travel to New York. He will therefore shape his course so as to economise time and expense, in making his passage to and from Europe.

In order to do justice to the argument in favor of this plan for shortening the transit between Europe and America, we must suppose the various projected lines having this object in view, to have been constructed and the question of time and cost both reduced to their lowest point, instead of being considered with reference to the present condition of railway facilities.

Looking at the question in this aspect it will be seen passengers will seek to avoid all unnecessary travel, and will direct their attention to the shortest practicable line across the ocean.

In making the passage to and from Europe, the point of embarkation nearest the opposite shore will always be preferred to any other, more especially when it favors increased security from sea risks, and is likely to shorten the voyage.

With these principles admitted, a large portion of the present travel to Europe will necessarily seek the easternmost point of embarkation in Nova Scotia, which may be selected for the terminus of this line. It is known that Canada, New England and the Lower Provinces furnish a large proportion of the present travel.

Again, the route to and from Europe, which is the most certain and the shortest in the point of time, must eventually become the cheapest and therefore the most frequented.

No one can question this who regards the commonest principles of commercial economy. A passage to Europe will in a very few years become a matter of as common occurrence as a journey now from New York to Niagara Falls.

Ocean steamers at the present time charge at the rate of about six cents per mile from the fact that the number of passengers is too limited to admit of a reduction of price, or because the proprietors of the existing lines demand exorbitant profits on their investments. If the number of passengers should be increased four fold the price of passage might be reduced one half at least. This result will be very shortly reached.

The rapid increase of wealth and refinement in the United States will in a very few years lead the pleasure travel that now seeks our fashionable summer resorts, to spend their leisure in the same manner among the highlands of Scotland, or on the Rhine.

The same or similar results, will be witnessed

in relation to the travel from Europe to America, which always has been and still continues to be greater than the travel from America to Europe.

This great increase of travel will operate to reduce the price of passage in the same manner and to the same extent as it has operated upon the lines of railway in this country.

The consequence of this state of things will be as marked upon the character and the business of the two continents as the increase of railway facilities has been upon the character of the people of the different States of the Union.

It is well known that the most dangerous part of the voyage between New York and Liverpool is in approaching either port. Steamships after leaving New York or Boston harbor for Europe, sail along the American coast for some 800 or 1,000 miles, often enveloped in the thick fogs which so frequently prevail, and these difficulties and dangers to a certain extent are encountered in approaching or leaving Liverpool. It is on this part of the voyage that most of our disastrous shipwrecks occur.

But travelling this portion of the distance by railway, these dangers and annoyances are avoided, and the embarkation is made at points which permit vessels almost immediately to leave the coast and thus escape its perils.

Experience shows that where the railway and steamboat come in competition, the former uniformly commands the mass of passengers. We have numerous instances in our own and neighboring States which have demonstrated this in the most satisfactory manner. We have steamboats between Portland and Boston, yet the two lines of railways carry nine-tenths of the passengers that reach Boston from the east, although the fare is usually double that of the steamboat.

When the New York and New Haven railroad was proposed, it was an almost universal opinion that it could not succeed, from the fact that it was located along the shore of Long Island Sound and would have to sustain a direct competition with steamboats of the most superior character for speed, elegance and comfort. Up to that time they had supplied the connection between the cities above mentioned.

The splendid steamer Connecticut had accomplished the passage in the short time of three hours and forty-five minutes, equal to 21 miles to the hour. It was thought that the dangers of the passage were not greater than by railway, as the Sound was land-locked between these cities, affording a navigation more safe and free from detentions than most rivers. Besides this, the road having a considerable extent of 40 feet grades, with many draw bridges, and but a single track, it was supposed that it would be subject to delays and dangers, not often encountered on other roads, and consequently the mass of passengers would prefer taking a steamer. It was also urged that the steamers, even with their magnificent accommodations and sumptuous tables, could be sustained by rates which would be ruinous to a railway.

In opposition to these opinions, the railway was built, and when completed and opened for travel, there were two first class steam boats running to New Haven, one to Bridgeport and one to Norwich, touching at the intermediate towns. At the present time there are no first class boats on the route, and but two freight boats, and although their fare is but half that by the railroad, they carry very few passengers.

There are now running on this railway five passenger trains each way daily between New Haven and New York, and one train each way daily between the latter place and Bridgeport, besides other trains running less distances. In addition to this there have been three freight trains each way daily for a portion of the year.

This illustrates in a forcible manner, the capabilities of railways to compete with steamboats not only for passengers but for freight. In this case it is not a simple division of the business between the two modes of conveyance, but it amounts to almost a complete monopoly of the business by the railway. There were transported on this road during the year 1850, 652,122 passengers, and its net receipts are equal to 7 per cent on an average cost of \$56,000 per mile. The Superintendent of this road says, "I am well satisfied that the ques-

tion is fully settled on this route, that steamboats cannot be sustained in competition with the railroad."

The Hudson river railway is located on the immediate banks of that river, from New York to Albany, a distance of 144 miles, and is subjected to competition from steamboats which are universally admitted to be the fastest and most magnificent steamers in the world. The navigation is unsurpassed for safety, and the beauty of the scenery along its banks renders the sail up this river the most attractive of any perhaps on this continent.

Two months after the road was first opened from New York to Peekskill, a distance of 43 miles, an account was kept of the number of passengers that left and arrived by the steamers, at Sing Sing, Dobbs Ferry and Yonkers, for 6 days in succession. This showed that the railway carried about 84 per cent of all the passengers, notwithstanding the fare was nearly double that of the steamboats. While the railway was in operation no further than Peekskill, the fare from that place to New York was 53 cents, while the boats at first charged 37 1-2 cents, and then reduced their fare to 25 cts., but having so little business even at that low fare, they were obliged to withdraw and leave the whole business to the road.

At the present time the railway is in operation to Poughkeepsie, which is one half its length, and the same results thus far attend its extension. The Albany way boats were discontinued during the last season, for the first time it is believed, since the running of steamboats on the river. The steamers, although of the best description, and the fare varying from one to two dollars, from New York to Albany, cannot command the travel.—They require from 8 to 9 hours to make the passage, while the railway can transport passengers over this route in 4½ hours, and this alone is sufficient to turn the travel to the railway, at rates of fare fifty per cent above the steamboats.

The number of passengers transported on this railway, only one half of which is in operation, for nine months of the year 1850, was 509,180.

The manager of this railway says, "We consider the question settled as to the practicability of successfully competing for passengers with the best line of steamboats in the world."

Railways have been constructed on and near the coast in nearly all the Atlantic States, are in progress or contemplated along the banks of the St. Lawrence and the shores of Lake Champlain, Ontario and both sides of Lake Erie. On all of these waters first class steamers are running with great success. Railways are also being constructed parallel and near to many of the navigable waters of the Western States.

The question as to the ability of railways to command the travel in all places where they may come in competition with steamers, appears to be fully settled.

With reference to the proposed eastern line, it may be observed that all the reasons which induce the travelling public to give their preference to railway communication over that by steamboats, in the cases referred to, apply with far greater force on this line, and there can be no doubt whatever, but that it will command the mass of travel crossing the Atlantic.

Indiana.

Statement of the Condition and Prospects of the Jeffersonville Railroad Company.

Below we give such a portion of a late report issued by the above company as presents a general view of its route and business prospects.

The primary object in the construction of the Jeffersonville railroad was to open an outlet for the products of the rich and central portions of Indiana, to the Ohio river, their natural avenue to the sea, and through which a large majority of the people of that State must always receive many of their most important articles of consumption.

The great points on this river, through which Indiana receives and exports by far the larger part of the products and merchandise which make up her import and export trade, are Louisville and Cincinnati. Of these two, the one that will eventually monopolize this trade, is that which is the

most accessible from the interior, and from which produce can be most cheaply forwarded to the place of consumption. Measured by this, the only proper test, the position of Louisville and her younger sister, Jeffersonville, situate at the Falls of the Ohio, and separated only by that stream, is decidedly the superior.* They are nearer than Cincinnati to the ultimate markets of western produce via New Orleans, and to Indianapolis, the centre of the State, and of the system of railroads radiating from that point.

It is a well known fact that the banks of the Ohio are formed or bordered by a range of high hills which frequently rise precipitously from the water. From the Miami to the Wabash, a distance of nearly 300 miles, this range is not cut through by any stream having its rise in the table lands beyond; neither is it penetrated at any one point by a gorge or depression favorable for the route of a railroad, except by the one occupied by the line of the Jeffersonville road. The general elevation of this ridge above the river is from 400 to 600 feet. The points of elevation by which it is crossed by the several lines in progress or in operation in the southern part of Indiana, will be seen by the appended table marked (A.) The summit of the ridge is gained by the Madison road by an inclined plane of 448 feet. The maximum grade of the Lawrenceburgh route, as stated in the report of that company, is 65 feet to the mile: that of the New Albany is still greater. On the Jeffersonville railroad, the steepest grade, ascending from the Ohio, is only 26 feet to the mile, and only 23 feet in the opposite direction. The table of gradients on this road will be found in the Appendix, marked (B.)

The highest point on the Jeffersonville railroad in a distance of 66 miles, is only 172 feet above the river, a fact without a parallel in any line of railroad running for an equal distance at right angles to the Ohio. Forty four miles of the line of this road is level, or have an inclination of less than ten feet to the mile. It is believed, too, that no road of equal length can be found presenting a line so direct as *this*, which only exceeds by one and a half miles an air line drawn between the termini. If, therefore, as before stated, Louisville be the economical point of shipment for the produce of Indiana, this road forms its cheapest and most direct route to a market.

It is not proposed here to go into an exact calculation of the extent of this superiority, but merely to give some data upon which it is founded. That the route is a remarkably favorable one, even for the West, both as regards directness, grades, and cheapness of construction, will be readily seen.—That it is the *only* route in Indiana occupying the same general direction, and having a similar object, that possesses the same favorable characteristics, has been fully proved by careful surveys.—The height at which the other lines of railway cross this range of hills proves the singular uniformity of their general elevation.

Thus far the route of the road has been spoken of only in its local aspects and bearings. It is now proposed to examine it in its connection with other lines, and with the railroad systems of different and remote parts of the country.

It is well known that lines of railroads are in progress from Charleston, Savannah, Mobile, and New Orleans, all of which are aiming to make Nashville, Tennessee, a common centre. The connection between the last named city and Savannah and Charleston is soon to be completed, and the most vigorous measures are in progress, to construct a railroad from Louisville to Nashville, for the purpose of making the former the Ohio terminus of the great system of southern railroads.—Louisville has voted \$1,000,000 to this object, and as the country traversed is one of the richest and most fertile description, there can be no doubt of the speedy completion of this line, opening a direct communication with the leading southern cities upon the Atlantic and Gulf of Mexico. In addition to this, that city is now engaged in throwing out other lines of railroads into the interior of Ken-

* Below the Falls, the navigation is much better than above. The Grassy Flats sixteen miles above Louisville—well known to western boatmen—and other shoals between that and Cincinnati, are great impediments to navigation.

tucky, which promise to be of no small advantage to that State, as well as greatly beneficial to the Jeffersonville road.

Louisville is not the final terminus of any of the before mentioned lines of railroad. (This is far beyond the Mississippi.) It is only a point of union in their onward course. These, in crossing the Ohio river, find their *natural route* through the highlands of Indiana, to be that occupied by the Jeffersonville railroad. The reason that has constituted *this* the *only* route of convenience for a large portion of the people of Indiana, must forever constitute it the *great trunk* line for the extension of the lines already referred to, till they reach the table lands of Indiana, where they can take almost any direction that may be desired. As soon as this table land is reached, and particularly at Indianapolis, these lines are found radiating in every direction, and towards every important point in the United States.

The Jeffersonville road, therefore, is and must always be a leading channel of communication between the great northern and southern systems of railroads; upon it must be thrown the aggregate and collective business of a vast number of lines.

For the purpose of connecting herself still more intimately with other portions of the country, the city of Louisville has recently voted the sum of \$300,000 to aid this company in the more speedy completion of the road to Columbus, and its extension in a northeasterly direction, to intersect the lines of railroads running west, through the central and northern portions of Ohio, and which unite at Indianapolis. These lines are the natural prolongations of the lines of railroads running west from all the Atlantic cities north of Richmond, Va., and including that city. By this road, Louisville expects still more effectually to place herself on the main line of travel between the north and south. The proposed extension of this road is in the direction of the shortest route to Lake Erie. The Jeffersonville road, in connection with the Madison and Lafayette roads, will form an almost straight line in the direction of Lake Michigan and Chicago. The Terre Haute road will open an avenue to St. Louis. A connection with the Lawrenceburgh or Cincinnati and St. Louis road will form the shortest route between Louisville and Cincinnati. Through the Jeffersonville railroad, therefore, Louisville and other southern cities will be connected on the north with avenues leading in every desirable direction; while northern travel and commerce, seeking a southern market, will find, through the same channel, their most convenient route to their points of destination.

The amount of income of this road to be derived from the connections referred to and from its general relation to the country, is left for each individual to estimate according to his own judgement. It is believed that no one can examine the accompanying map without being fully convinced that it must be very large, and exceed that which will result from its local traffic; but as the extent of the former is more open to conjecture, while a local traffic, sufficient to produce an ample income, can be shown to exist, the estimates of revenue herewith submitted will be based upon local traffic alone.

Assuming that the resources of the country traversed by the Jeffersonville railroad are equal to the average of western routes, perhaps the most satisfactory and correct opinion of its probable amount of income to be derived from local traffic, may be formed from a general view of the resources, pursuits and course of trade in the West, than from any existing data, based upon past production, or from the amount of trade and transportation which is now known to exist, or in fact from the actual results of any western railroad—as these have not been a sufficient time in operation to demonstrate the full extent of their capacity.

As to the extent of production of which the west is capable, it is certainly impossible to fix any limit. This has never been tested, for the want of the proper stimulus, a market; or for its equivalent, suitable means of transportation. A railroad furnishes a market, in opening an outlet to one. It thus develops the resources of the adjacent country to an extent far beyond what was previously supposed to be possible, and creates for itself a business just in proportion to this development.

It may be truly said that *agriculture* is the principal pursuit of the people of the western States—all other branches of industry being subordinate to this. They have consequently no sufficient domestic market for their surplus products. These must be exported to find a customer. The great articles of export, such as wheat, flour, hay, corn, beef, pork, etc., are of great bulk, and pay a much larger freight in proportion to their value than many other articles of merchandise, such as dry goods, teas, etc. From the superior productiveness of the country, a vast amount of transportation must be thrown upon their railroads, and from the nature of the articles carried, they must pay much more largely, according to their value, than such as make up the business of eastern roads. Another cause which will throw a much larger amount of the ordinary business of the community, (as far as travel and the movement of property are concerned,) upon western than upon eastern railroads, is that our ordinary roads—constructed over a soft and yielding soil—are almost impassable at those seasons of the year in other respects most convenient for forwarding to market. The want of good roads has been one of the principal drawbacks to the progress of the western States. The cost of transportation for a few miles only, frequently amounts to as much as the produce will sell for at the point of shipment; but by means of railroads the farmer can cheaply and expeditiously send his products to market at those periods when his labor is least profitable in his ordinary pursuits.

These general views, as to the use and necessity of railroads in the west, convey the best idea of the probable extent of their business. That is the appropriate field for railroad enterprise. They are here to have their greatest development. They are necessary as outlets to market. They never can be superseded by the ordinary road. They can be constructed at small cost compared with eastern roads. They will have a much larger amount of business in proportion to their cost; and with the greatly reduced cost of construction, they must in their operation, if the lines are judiciously selected, prove more useful to the community, and profitable as investments for capital. This is fully sustained by the best evidence—the result of roads already in operation.

On the Use of Caustic Lime, instead of Limestone, in Blast Furnaces.

By E. Montefiore Levi, Engineer of the Ougree Blast Furnaces, and Dr. Emil Schmidt, Engineer of the Royal Austrian Company.

Having, in 1849, undertaken a series of very extensive researches on the composition of the gases of the large coke furnaces used at Ougree, researches which we have been prevented by other occupations from bringing as yet to a sufficiently successful termination to offer them to public appreciation, but which have furnished several very interesting results, we took a portion of gas from foot to foot from the tuyere to the mouth of the furnace, 54 feet in height, each time estimating the proportion of carbonic acid; this examination, the details of which we reserve for an ulterior communication, demonstrated clearly that very nearly the whole of the carbonic acid disengaged from the limestone is converted into oxide of carbon in its passage through the incandescent coke. We observed that the decomposition of the limestone takes place much lower in the furnace than is generally supposed, and that at the point where that decomposition takes place, the temperature is sufficiently high to allow the carbon of the coke to be absorbed by the carbonic acid evolved from the carbonate of lime. The quantity of coke thus uselessly consumed is very considerable, as the following calculation, deduced from the actual present working at Ougree, will plainly show:—

A blast furnace, smelting 53 tons of 38 per cent ore every 24 hours, will produce about 20 tons of iron—if, as at Ougree, 40 per cent of limestone are used, the total quantity is about 21 tons, containing about 9½ tons of carbonic acid; the coke consumed when limestone was used was about 150 for 100 of pig iron, or about 30 tons per diem. Now, 9½ tons of carbonic acid may be converted into oxide of carbon by the absorption of about 2 tons 12 cwt. of carbon, or 2 tons 18 cwt. of coke with 11 per cent of ash, the proportion of coke, which is

hereby uselessly absorbed, is equal to 9·74 per 100 of the total quantity which is charged into the blast furnace. Struck with this remarkable result, we acquired the conviction that, notwithstanding the fuel and labor necessary for the manufacture of lime in separate kilns, there would yet be a real and considerable advantage gained by using it instead of limestone; the fuel generally used for lime burning is of inferior quality, and its combustion is so managed that it is converted in burning into carbonic acid, a maximum proportion of the heat that it can produce is rendered available; it appeared to us, moreover, evident that, the great absorption of heat by the carbonic acid in its passage from the solid to the gaseous state no longer taking place, not only could the quantity of ore charged for a given proportion of coke be augmented, but, moreover, as the elaboration of the ore would take place at a higher point of the furnace, the descent of the charges might be hastened, and the production of the furnace augmented.

Consequently, carrying our ideas into practice, in the month of June, 1849, lime was used in lieu of limestone in the furnace No. 3 of Ougree. The result during the first few days did not answer our expectations, but we were not long in discovering the cause of this unsuccessful result. No more than the theoretical proportion of lime had been used, that is to say, 56 for 100 of the carbonate; but, necessarily, it was very far from being pure; there was, therefore, an insufficient quantity, and thence dark colored slags and difficult working. This fault was promptly remedied by an augmentation in the proportion of lime, which was carried to 63 for 100 of limestone. From that moment, the behavior of the furnace became most regular and excellent; the proportion of ore was augmented, and the number of charges multiplied. From that period lime has constantly been used in that furnace, and invariably with the most favorable results. Eighteen months' continual use of lime in this furnace, and six months in another (furnace No. 4 of Ougree,) during which period above 15,000 tons of pig iron have been manufactured by the use of quicklime, have proved in the clearest and most positive manner, not merely the augmentation in the daily production and the diminution in the quantity of coke used, which we did foresee, but also a remarkably ameliorating influence on the whole bearing of the furnace, of which we could have had no previous idea.

Here are the proportions of coke used for the production of 100 of pig iron, during some months of 1849, according as quicklime or limestone was used:—

Limestone.	Quicklime.
March.....150	July.....142
April.....154½	August.....138
May.....156½	September.....132
June.....151½	October.....139
	November.....142
Average.....153·2	138·6
Average with limestone.....153·2	100
Ditto with lime.....138·6	90·4
Difference.....14·6	9·6

It may thus be seen that the economy is 9·6 per cent of the coke employed—figure which corresponds in the most striking manner with that of 9·74, to which we had already arrived by calculation. Rarely have we seen provisions founded on purely theoretical considerations so fully confirmed by the practical results.

At the commencement of 1850, two new furnaces were put in blast at Ougree, the existing kilns being insufficient to supply with lime more than one furnace, and the managers of the works, considering the experience of the last six months as putting the advantage of the use of lime beyond a doubt, asked of the board of directors of the company the authority to erect new lime-kilns, so as to be enabled to supply with lime the three furnaces; but the directors were of opinion that the experiments already made, did not suffice to prove in general the advantage of the use of lime—the favorable result obtained might have been produced by an excellent state of the only blast furnace where the experiment had been tried, and that, perhaps, independently of the use of lime. For the purpose of deciding this question, quicklime was used instead

of limestone in furnace No. 4, which had during several months been working in a regular manner, using limestone as a flux; the result was immediate, and very soon a similar diminution in the consumption of coke, augmentation in the daily production, and general good working were observed, as in furnace No. 3.

The accompanying table shows the quantity of coke for 100 of iron, and the production during 28 days for six months of 1850—first, for furnace No. 1, using limestone as a flux; second, for No. 3, using lime; and third, for No. 4, using limestone during three months, and lime during three months. All the furnaces being built after precisely the same model, using the same ores, and producing white or mottled pig-iron by cold blast.

Coke for 100 Pig Iron.			
Date, 1850.	No. 1. Limestone.	No. 3. Lime.	No. 4. Limestone.
April.....	165	145	163
May.....	165	147	159
June.....	170	147½	164
			Lime.
July.....	161	146½	149½
August.....	158½	145	146
September....	153	147½	146
Average.....	160½	146½	..
Production During 28 Days.			
	No. 1. Limestone.	No. 3. Lime.	No. 4. Limestone.
April.....Tons	436	601	459
May.....	447	582	461
June.....	477	588	488
			Lime.
July.....	462	555	537
August.....	465	536	552
September.....	477	577	600
Average.....	461	573	..

Average, April to June—Limestone. 162 469 6 c.
Ditto July to Sept.—Lime.....147½ 463 0

It appears, by this table, that the quantity of coke consumed is diminished 14 to 15½ per 100 of iron, and the production in a given time is increased by 22 to 24 per cent.

Although, as a flux, lime must necessarily come to a higher price than its carbonate, yet by its use is the cost of pig iron very much diminished, and the profits are multiplied, on account of the increased production. We do not consider ourselves authorized to furnish here details of the cost price; but we can affirm, with confidence, that the increase of annual profit secured by this innovation is from 25,000 fr. to 30,000 fr.

Hitherto the opinion of metallurgists has been rather unfavorable than otherwise to the use of lime: Karsten, and after him other writers, establishes the existence of this prejudice, without being able to assign a sufficiently plausible reason. M. Valerius [*traité de la fabrication de la fonte*] says, "It is said that the use of lime causes the production of scoræ rich in iron, white cast iron, &c.; and to explain this bad effect, it is remarked that the calcination of the limestone in the blast furnace produces a very considerable diminution in the temperature, which prevents the ore from arriving too soon—that is, before the oxide of iron is reduced into a region of the furnace where the heat is sufficiently great to allow of the action of the oxide of iron upon the silica." Such a reason appears to us very ill founded; the sole effect of the lowering the temperature will be to allow the ores to arrive imperfectly reduced to a zone of fusion, just as we every day have the opportunity of observing when the ores are wet. The effect of the absorption of heat caused by this moisture is the production of black slags, white pig iron, &c., precisely the contrary of what it should be if M. Valerius's reasoning were exact; but common sense alone suffices to show that a constant cause of cooling in the furnace cannot possibly be advantageous. M. Ebelen, in his interesting researches on the reduction of iron ore in blast furnaces, observed the considerable cooling effect of the carbonic acid, and the retardation which it causes in the reduction of the ores; yet he did not remark the conversion of the carbonic acid from the limestone into oxide of carbon. The following figures are taken

from analyses made by M. Ebelmen, of a calcareous ore which had remained for some time at different depths in the blast furnace:—

	Orig- nalore.	At 8 feet.	13 feet.	15 feet.	17 feet.
Carbonate of lime.....	36.8	41	40.6	26.6	—
Quicklime.....	—	—	—	4	37.4
Peroxide of iron.....	36.2	37	27.8	24.1	—
Protoxide of iron.....	—	traces	12.7	17.5	30.2
Metallic iron.....	—	—	—	—	10

The height of the furnace was 27 feet; at 15 feet the carbonate of lime had scarcely undergone a commencement of decomposition. M. Ebelmen adds the following remarks:—"It appears to me that the cause of the very sudden variation in the rapidity of reduction of the ores must be attributed to the disengagement of carbonic acid from limestone. It may be remarked that, in the third experiment, the ore has lost a small portion of its carbonic acid, and in the fourth the whole of the lime is in the caustic state—thus the disengagement of the carbonic acid coincides in a striking manner with a sudden variation in the temperature of the furnace, and in the rapidity with which the ores are reduced. There is nothing surprising in this, as Bischoff's experiments have proved that carbonic acid absorbs a large proportion of latent heat while passing from the solid state. The gases which pass through the furnace must, in traversing the zone, where the calcination of the limestone takes place, lose a portion of their sensible heat, which becomes latent, while their reductive power is diminished, either on account of the lowering temperature, or because of the considerable admixture of carbonic acid.

In conclusion, we are, as far as we are aware, the first who have succeeded in substituting with success and economy lime for its carbonate in blast furnaces. The Ougree company, now fully convinced of the immense advantages derivable from the use of lime, is occupied with the construction of kilns heated by the blast furnace gases.—*London Mining Journal*.

The Ventilation of Collieries, Theoretically and Practically Considered.

BY MR. WILLIAM PRICE STRUVE, C.E.

The author commenced by showing that the general principles which ought to govern the ventilation of collieries were—1. That a current of air through the channels of collieries, at a velocity of five feet per second, was sufficient for most purposes. 2. That a current exceeding that velocity would only be attained at the expense of leakage and other evils. 3. That, in order to obtain the requisite supply of fresh air, the channels of a colliery or mine ought to be enlarged according to the exigency. In the process of laying out a mine, a sub-division occurred by which the workings were apportioned into numerous compartments, which facilitated the system of splitting the current of air, or diverting it into numerous channels, giving to each compartment a separate and, therefore, more effective ventilating force; at the same time the area of the channel was enlarged, and the aggregate length of the air-tube shortened, so that it was quite practicable to pass through the workings of a mine three hundred cubic feet of air per minute for each man employed. A comparison of the dimensions of the air passages and the velocities of the currents in numerous collieries led to an estimate of motive power required to produce the results attained in the best ventilated mines, in case of the employment of a steam engine and air pumps. This power would have varied between 23 horse power and 26 horse power. The efficiency of furnace ventilation was always increased by the depth of the shafts, especially if they were entirely devoted to the purposes of ventilation, irrespective of the working of the pit. The experiments of Mr. N. Wood, Mr. G. Elliot, Mr. H. Vivian, and other mining engineers, were then quoted, to demonstrate the insufficiency of the "steam jet" as a means of promoting ventilation, showing that it was a most wasteful application of power, when compared with the steam force employed to work Struve's mine ventilator at the Eaglesbush colliery. This apparatus consisted of two hollow pistons, resembling large gasometers, plunging into cisterns of water, and having inlet

and outlet valves. The pistons received alternate motion from a small steam engine of 5 horse power, and being filled and emptied at each revolution of the crank, produced a regularity of current and a degree of copious ventilation hitherto unknown in the mines to which they had been applied. The small cost of their establishment—only about one hundred pounds for an extensive mine—joined with the little liability of getting out of order, was much in their favor. The paper terminated with copious extracts from the able mining reports of Mr. John Phillips and Mr. Kenyon Blackwell, confirming all the positions assumed by the author. The discussion upon this paper was announced to take place at the next meeting, Tuesday, November 26, until which time the meeting was adjourned.—*Proc. Inst. Civ. Eng., Nov. 19, 1850.*

Weaving in Iron.

Strange as the idea may seem, it is no less strange than true, that iron, of a thickness that would make it appear impossible that it could be worked by any other agency than the forge, the anvil, and the hammer, is now, by the aid of new and powerful machinery, woven into the most beautiful patterns, and the designs varied with almost the same facility as in the weaving of a carpet, or a table cover. The specimens that we have seen, excel in beauty and finish any iron railing that we have seen, and do not cost more than half the ordinary cost of even cast iron railing. Many of the first class counting-houses and offices in New York are now fitted up with this railing, in preference to any other heretofore or at present in use. The uses of the invention, however, are not confined to railings, as the most tasteful verandahs, window gratings, garden fences, etc., are made by it. The coal miners of Pennsylvania prefer it above all other modes for their screens. Charleston and New Orleans each have parks enclosed with it, and many of the rich southerners have their flower conservatories enclosed in the same manner. In fact, wherever it has been introduced, it has come into almost unlimited favor.

Mr. John Wickersham, the ingenious inventor, also manufactures a superior article of iron wire farm fences, that cost but little, will last a man a lifetime, and are easily constructed. In thinly-wooded countries they will come into rapid demand, as they already are in many parts of Europe. Add to these one more article. Mr. Wickersham manufactures a bedstead of iron, so constructed that it can be shut up during the daytime, and will require but a few inches of room from the wall out, is bug-proof, and easily managed. We think his store (No. 240 Broadway) is worthy a visit from those who visit the city of New York.—*Daily Albany State Register*.

From the Journal of the Franklin Institute, for Feb. 1851.

Mr. Isaac Lea called the attention of the Institute to some specimens of semi-bituminous and transition coal, from Dauphin, on the Susquehanna, 8 miles above Harrisburg, and made the following remarks:

The Dauphin and Susquehanna coal company's land included that portion of the west end of the first, or southern coal field, which was semi-bituminous, and that it was the nearest coal to tide-water in Pennsylvania, being 90 miles to Havre de Grace.

The map exhibited of the several coal fields was made by R. C. Taylor, who, as geologist and mine engineer, explored this coal district, and reported most favorably on it. By it, it may be seen that the southern line of granite arrests the tide water, and thus forms shipping ports at Georgetown, Baltimore, Havre de Grace, Philadelphia, and Trenton. The parallelism to these ports, of the three coal fields—the southern, middle, and northern, or Wilkesbarre—showed the general direction of the stratification of the various formations—running nearly east and west—from the primary rocks to the carboniferous series.

The "hardest" anthracite is found at the east end of the southern or Pottsville coal field, near to the Lehigh, at Mauch Chunk, and proceeding westward the same veins or seams become "softer"—that is to say, they possess more volatile matter. The coal at Pottsville is more easily ignited, and

burns more rapidly than that at Mauch Chunk. In Pine Grove district, 12 miles west of Pottsville, the coal is "softer" still; and 10 miles further again, in the Pequa Company's land, the coal of the same veins contains still more volatile matter, and burns with a white flame, but does not coke. This is called *transition coal*, and is such as is used for making iron in South Wales, at Merthyr Tydvil. It is there called "*iron-making coal*." Four miles further west, at Yellow Spring Gap, is found the true *semi-bituminous coal*, which cokes or swells in burning, but does not "bind" or cement. This quality permits the draft of air to pass through and keep the carburized hydrogen and carbonic oxide gases constantly ignited; hence the absence of smoke. This condition admirably adapts this coal for *steamers and locomotives*. All the European steamers use this kind of coal, which is obtained from South Wales, and it is carried to all parts of the world, where steamers ply, for that purpose. Four miles further west, at Ratling Run Gap, the quantity of volatile matter is still greater, and the coal burns quicker. Three miles further again, at the Big Flats, the coal will bind. Here the veins have narrowed down to three feet in thickness.

The coal at the east end of this coal field, at Lehigh, contains about 6 per cent. of volatile matter, while the transition coal of Rausch Gap contains about 11 per cent., and the semi-bituminous coal of Yellow Spring Gap has 14 per cent., and that of Ratling Run 17 per cent.

This gradation is well marked in the specimens presented, and the change in this coal field may be compared to that of South Wales, and Donetz in the south of Russia, where the same condition of things exists—that is, hard anthracite at one end, and bituminous at the other, with the intermediate gradual changes. The analogy of the coals of Dauphin county with the celebrated Welsh coals, may be understood by the following analyses:

Dauphin Coal. Vol. Matter.

Yellow Springs, Kugler vein..... 9.60

" Backbone vein..... 14.88

Ratling Run, Perseverance vein..... 15.80

Grey vein..... 11.40

Lea vein..... 8.96

Grey vein, black part..... 9.78

Peacock vein..... 9.00

Welsh Coal. Vol. Matter.

Aberdeen blast Furnace..... 8.33

Tredegar coal..... 15.20

Dowlas Big vein..... 15.62

Dowlas Big vein, central part..... 11.87

Mountain vein, Merthyr..... 8.48

Cwm-dhu pit, "..... 9.22

Raslas vein, Aberdare Iron Works..... 9.11

Coals may be classified into four divisions—bituminous, semi-bituminous, transition and anthracite. Anthracite burns with a weak blue flame, and does not swell, making an intense but concentrated heat. Transition coal burns with a short white flame, and does not swell or coke. Semi-bituminous coal burns rapidly, gives out a long white flame, (carburized hydrogen,) swells much, does not bind, and makes very little smoke. It evaporates more water than any other kind of coal. Bituminous coal burns with a white flame, swells, and while coking "binds," or cements, making much smoke.

The Dauphin coal company have finished their railroad in the most substantial manner, with H rail, of the best quality, equal to any 20 miles in the State. The western terminus is at the town of Dauphin, 8 miles above Harrisburg, where the company have a basin and large depot, constructed to ship, by the Susquehanna State canal, any reasonable quantity of coal to market. The works were finished late in the autumn, but in time to send over 4,000 tons to market, which has been used in part by Collins' line and other steamers.—The engineers of the Collins' line reported the Dauphin coal to be "pre-eminent for marine purposes over any of the coals submitted for trial, requiring less labor by 75 per cent." than the Cumberland coal, which evaporated in an hour only 423.5 lbs. of water, while the Dauphin coal evaporated in the same time 523.8 lbs.—thus producing nearly 25 per cent more steam in a given time.

The Dauphin company's works being now complete, and all their connections made, they will

commence their regular trade with the opening of the Susquehanna canal, early in March, when their coal will, it is believed, go into general use in locomotives, as well as steamers, successful experiments having been made in the former by Mr. Baldwin, and other experienced engine builders and engineers.

New Mexico.

The subjoined new statistics of New Mexico have just been communicated by the Superintendent of the census:—"The total number of square miles in the Territory is 199,027; population on June 1st, 1850, was 61,574; deaths during the year previous, 1,157; farms, 6,715; productive establishments, 20. The number of sheep in the territory is 453,293, valued at \$566,616 25; the number of mules, 11,887, valued at \$594,350; the number of horses is 7,050, valued at \$211,500; the number of cattle is 31,581 valued at \$378,972."

Internal Improvements in Virginia.

During the recent session of the Virginia Legislature the following appropriations for internal improvements were made in the several districts named:

For Tide-water.....	\$26,611 18
For Piedmont.....	1,133,875 00
For Valley.....	288,120 00
For Trans-Alleghany.....	320,040 00
Improvements lying in several districts.....	822,716 00

\$2,591,362 18

These sums, added to those heretofore granted, make the general aggregate as follows:

Amount expended in Tide water.....	\$819,934 96
Piedmont.....	8,579,460 77
Valley.....	2,399,883 85
Trans-Alleghany.....	1,824,138 60
	\$13,623,418 18

Railroad and Wire Suspension Bridge.

The work upon the Louisville and Frankfort railroad is progressing so fast that it is expected by the 10th or 15th of May it will be finished to the Kentucky river at Frankfort. In the meantime, the construction of the bridge by which it is to cross is going forward so rapidly that by the time the road reaches the river, the bridge will be so far advanced that passengers can walk across upon it into our city. Seven of the eight immense wire cables have already been passed across the tower upon this side of the river. In a few days they will all be in their places. The length of the cables are 585 feet, and the height of the towers some 75 feet above the present surface of the water, which is at an ordinary stage for the season.—*Frankfort Commonwealth.*

Translated for the Mechanics' Magazine.

Farther Applications of Centrifugal Action to Manufacturing Purposes.

It is well known that a centrifugal machine has been hitherto employed with much advantage for the drying of textile fabrics and for clarifying sugar; but these are not the only purposes to which it is adapted; for every day new applications of this apparatus suggest themselves, and important problems are solved by its means.

We now learn that one of the most important operations of brewing may be wonderfully simplified by the use of a centrifugal apparatus. It has hitherto been considered exceedingly difficult to reduce the temperature of beer to the degree of coolness requisite; it has been necessary to make use of refrigerators for this purpose, and, notwithstanding all precautions, mistakes not unfrequently happen. It occurred to some English brewers that this difficult cooling process might be effected by means of a centrifugal machine. This idea has been put in practice with complete success. The beer was reduced to the desired temperature by merely passing it through the machine; and this was effected not only with great rapidity, but also with considerable economy.

Some time back, a M. Gauthier de la Touche, of Paris, endeavored to produce ice by means of a

hydrofugal apparatus. He did not succeed in reducing water to the freezing point, but he cooled it to a degree far below that required in brewing beer.

It would be superfluous to explain these results, for every one is acquainted with the effects of a very rapid ventilation, and the centrifugal machines are made to rotate at the rate of 3000 revolutions per minute, and even quicker.

We are further informed that in certain manufacturing in Alsace, a hydrofugal machine is used for making starch. When flour is stirred about in water, the different substances range themselves according to their specific gravities (unless prevented by some peculiar circumstance.) Now this is precisely the result obtained by the centrifugal machine; starch, being the heaviest substance, separates itself from the others, and is the first precipitated.

The centrifugal machine may also be advantageously applied for classifying grain, seed, or ores, according to their respective densities, or any other substances of different densities, whether liquid or solid, provided that they are not of a cohesive nature, or that whatever cohesiveness they possess may be easily removed.

In fact, the centrifugal apparatus may be applied to so many different manufactures, that it may justly be looked upon as one of the most fortunate and fruitful inventions of modern times.

Canadian Commerce for 1850.

From an inspection of the official returns of the trade of the Province during the year 1850, we have been enabled to compile the following summary of the year's commercial transactions.

The value of the imports was:

From Great Britain.....	\$2,407,980 4 0
" British N. A. colonies.....	96,404 19 6
" West Indies.....	1,112 19 3
" United States.....	1,648,715 2 5
" Other foreign countries.....	91,303 18 4

Total imports for 1850.....\$4,245,517 3 6

The duties paid on goods imported were as follows:

	value.	duty.
Specific duties.....	\$654,945 19 9	\$233,536 19 1
30 per cent ".....	42,854 9 5	12,847 6 9
20 " ".....	23,319 13 10	4,663 19 5
12½ " ".....	2,838,417 1 7	354,802 2 5
2½ " ".....	391,846 11 9	9,795 7 0
Free goods.....	294,133 7 2	

Total.....\$4,245,517 3 6 \$615,645 14 8

The value of the exports from Canada during the same period was as follows:

To Great Britain.....	\$1,521,279 15 3
To the United States.....	1,237,783 17 11
To North American colonies.....	202,194 1 3
To West Indies.....	2,094 0 0
To other countries.....	27,070 6 4

\$2,990,428 0 9

The exports are thus classified:

Produce of the mine.....	\$9,115 12 0
Produce of the seas.....	36,512 15 7
Produce of the forest.....	1,360,734 6 4
Arrivals and their products.....	157,580 6 0
Vegetable food.....	1,046,034 6 4
Other agricultural produce.....	13,439 14 10
Manufactures.....	6,676 19 1
Shipping, sold abroad.....	320,430 0 0
Other articles.....	39,574 0 7

\$2,990,428 0 9

Lake Superior Copper Mines.

By the last mail from Lake Superior, the Tribune has received copious accounts of the operations in the copper region for the past year, from which we make the following extracts:

"I have visited the North American and Cliff mines. The former looks well, and will, I think, ship about two hundred tons the coming season.—The Cliff looks better than ever. In the bottom drift, south, there is a mass of copper about fifty

feet in length, extending as far as drifted in south, about one foot thick and apparently pure. There is also another mass a little north, between No. 5 and No. 6 drift, weighing 50 tons, which is now being cut up. There is also another mass in the north end of the bottom drift extending to the end of the drift north, and 30 feet in height. The sheet is pure, and about 18 inches thick. The other parts of the mine look well, and there is a large amount of stamp work now on the surface."

"Late accounts received from the 'Adventure,' say the show has much improved."

"I left the North Western a few days since.—In No. 3 shaft the vein is four feet wide of rich barrel and stamp work. They are now drifting on the vein south to connect with the adit from No. 2 shaft north, both of which will prove the vein to a great extent. The prospect is very encouraging."

"The Agate Harbor mine has also a very favorable appearance for a new mine."

"There are two new mines working, Iron City mine and Cape mine. Iron City is three miles east, and Cape mine five miles from Agate Harbor mine. Iron City is a Pittsburgh company, Cape mine a Philadelphia company. The mine of each company looks very well for the amount of labor done. These are the only mines working east of the North West mine, but there will be no less than eight other companies commence mining next summer, east of North West mine. The North West mine never looked better than at present. The vein looks better as they get deeper. They have taken out some masses of pure copper lately, weighing from four to five tons each. The mine captain of the North West told me not long since that he thought he should have about 130 tons of copper ready to ship by the opening of navigation."

"Since I wrote you in the fall, I have been to the Ontonagon. I left Eagle River on New Year's day for Ontonagon. I made the trip in four days. On arriving in the Ontonagon county, I was much surprised to see so much preparation making to commence mining this spring. Some had got houses built, others were building, and others had got half a dozen men or so making a commencement at mining. I saw all of the mines that were being worked, except the old Ontonagon company's mine. I counted 14 mines in all, and some of that number were very rich. There is one mine near the Porcupine mountain, called the Norwich mine, the stock of which is held in New York.—

The company have got a vein, from a foot to 18 inches thick, nearly pure copper. They have two miners, and three or four laborers at work, and have got out sixty tons of copper. The Minnesota Ridge, Peninsula, Forest, Adventure, Piscataqua, Ohio, Merchant, Great Western, Algonquin, Bohemian and Douglass Houghton, are all mines that have got copper to work on, and there is not one of the above mines but is well deserving of considerable money being spent to prove their real value."

Canada.

We learn from the Montreal Herald that a meeting was held in that city recently, to consider the expediency and practicability of constructing the Vermont Junction railway, and to determine upon the proposition submitted by the chairman and secretary of the Provisional committee of that company, to raise stock subscriptions in that city:

The secretary of the company stated in the meeting, that in the country parts, he had been well sustained in his exertions to carry forward this enterprise. The question submitted to the meeting was simply to ascertain whether, in the opinion of those gentlemen present, the objects secured in the construction of the Montreal and Vermont Junction railway, to connect with the Burlington and Rutland railroad, the Passumpsic and Connecticut river railroad, the contemplated Stanstead and Missisquoi Valley railroad, with various tributary and connecting lines of railway from Boston, Portsmouth, and the Connecticut and Hudson valleys, were of sufficient importance to the city of Montreal to obtain stock subscriptions to the amount of £25,000, which, with the country subscriptions, and the assistance expected from other sources, will insure the construction of the

line, from St. John to the Province line at Vermont, within one year.

AMERICAN RAILROAD JOURNAL.

Saturday, May 3, 1851.

Notice to Contractors.

ENGINEER'S OFFICE,
Petersburgh, April 24th, 1851.

PROPOSALS will be received until the 20th of May next for laying 40 miles of the Track of the South Side railroad.

The Railroad Company will furnish all materials.

Plans and Specifications will be exhibited for several days previous to the letting.

Personal security to the amount of about 20 per cent. of the contract or contracts will be required, and each proposal must be accompanied with a letter from a responsible person, stating that he will become the security.

C. O. SANFORD,
3t18 Chief Engineer.

To Railroad Companies. SALISBURY REFINED IRON.

THE Undersigned, having enlarged and perfected his Works, is now prepared to furnish Locomotive Tire of a better quality than have heretofore been used. Railroad Companies who may wish it, will be furnished with a set for trial, not to be paid for until they are satisfied of their superior quality over any other. Also made at short notice, and in the best manner, Locomotive Cranks, Engine and Car Axles, and other Locomotive Forgings.

All work ordered from me will be made of Salisbury Iron, and done in the best manner.

Address: HORATIO AMES,
Falls Village, Conn.

May 1, 1851.

European and North American Railway.

This project is producing some singular and marked results in the colonial policy of the British government. It is well known that the Lower British Provinces and Lower Canada, have for years been endeavoring to obtain the aid of the home government in the construction of the Halifax and Quebec railroad, but without the slightest success. The proposed road being 636 miles long, and the estimated cost about \$20,000,000, neither private means nor the provincial securities were considered sufficient to the accomplishment of this work, and all idea of its prosecution seemed to have been abandoned. We may here remark that the whole scheme was entirely a chimerical one, without any reason in its favor, but that it would serve as a bond of union between the Provinces, and as a military highway, in case of war with the United States. A large portion of the route to be traversed by this line is of the most desolate and uninviting character, and covered for nearly one-half of the year with snows, to a depth of from one to six feet. The whole route is very sparsely settled, and nearly 200 miles of it covered with a dense forest. In case of a war, the whole military power of the British Empire could not defend all parts of this line against the efforts of one thousand resolute men. In a commercial point of view, it would be utterly worthless, and would not pay running expenses, if it were built and fully equipped. The home government very properly declined loaning its aid to such a work, and the scheme was practically abandoned.

When the project of the European and North American railroad was presented to the people of New Brunswick and Nova Scotia, it was immediately seized upon, as accomplishing all they proposed by the Halifax and Quebec railroad, and vastly more; and as a project within their own means. The proposed road would bring them into

direct connection with their natural markets, and place them on the great route of travel between Europe and the United States. Its cost would be moderate, and its construction appeared to be justified, from pecuniary considerations alone, and the means could be readily provided by the Provincial guarantees. The best feeling prevailed in both Provinces, and in New Brunswick the obvious and proper course was pursued, that of raising all that could be obtained by private subscriptions, and supplying the deficiency by the credit of the province, upon which money could be obtained at a very low rate of interest. In Nova Scotia, unfortunately, a different policy was adopted. Instead of relying upon themselves, the people of that province sent an agent to England to solicit, not the means for the work, but the imperial guarantee of the Provincial debentures. This, which had always been refused, was now offered, but it was offered in aid of the old exploded project of the Halifax and Quebec railroad, and upon the condition that the three colonies of New Brunswick, Nova Scotia and Canada should pledge to the imperial government the whole of their revenues, except the sums now payable by law; secondly, that they shall also consent to the imposition of such taxes as will ensure the annual payment of the interest on the capital advanced, and the establishment of a sinking fund for the gradual liquidation of the debt; the said taxes to be permanent until the whole is paid, "and the imperial government to decide what taxes are necessary;" and thirdly, that the said taxes are to be under the control of commissioners appointed by the imperial government. To these conditions it is understood that the agent of Nova Scotia has assented, and has apparently committed that Province to the same policy. But New Brunswick has taken an entirely different view of the matter, and her Legislature has protested against the acceptance of the proposition of the home government, which, if accepted, would defeat the European and North American railroad, and turn her whole resources to support a scheme that would impose upon her a debt of over \$6,000,000 for a work which would neither accommodate the great mass of her population, nor become the source of any revenue, nor productive of any useful results. Neither Nova Scotia nor Canada are going to throw away their money, nor pledge their credits in support of the Halifax and Quebec railroad, and the only effect that the mission of Mr. Howe will have, will be to embarrass the operations of the European and North American railroad company, and postpone the commencement of the work. The manifest interests of the Provinces, and the exercise of plain common sense, will in the end direct their cause. It is to be regretted that any of them should be so unconscious of their own strength, and so wanting in a just appreciation of their own position, as to feel compelled to run home to the mother country for aid every time that a proposition comes up requiring the raising of a little money. To all such aid, the home government affixes an onerous condition, both inconsistent with their pecuniary interests, and their freedom as a State. The absolute dependence upon the home government, which has existed among all the British colonies, and the spectacle of wretchedness which many of them present, now that the support once extended is withdrawn, is one of the most humiliating sights in the world; and the sooner that such Provinces acquire a proper self-reliance, and the habit of taking care of themselves, the better.

With regard to the final result of the mission of Mr. Howe, we have nothing to fear, though it may cause some immediate confusion among the friends of this great work, which the State of Maine, and the Lower British Provinces, have so much at heart.

The sudden change in the policy of Great Britain, of which we have spoken, is certainly very significant. The construction of the European and North American railroad would connect, by an indissoluble tie, all the great material interests of the people of New Brunswick and Nova Scotia, and those of the United States, and this in the end would result in a similarity of ideas, of tastes and pursuits, and of institutions. People so situated, and of the same great national family, would not long exist as separate nations. Mutual interests would draw them together, and the above road is the only thing wanting to give the Provinces sufficient strength to consult her own inclinations, when the proper time for action arrives. English statesmen are wise enough to see this, and hence the sudden relenting of that government. But this policy is too transparent to have any effect. Neither England nor the United States can materially hasten or postpone the question of annexation. It will come of itself, just as soon as the two parties are prepared; and through the railroad, this work of preparation is now going on with wonderful rapidity.

Stock and Money Market.

As the season opens, money continues to increase in abundance, and everything now indicates a plentiful supply for some time to come. This fact is very favorable for our new lines of railroad, and will ensure the completion of many important roads, before any commercial crisis or revulsion can take place. It is but reasonable to expect that the immense call for new works will in time cause a scarcity of money; but if, in the meantime, we can open a continuous line from the Atlantic to the Mississippi, and also from the great lakes to the gulf, we shall have done a vast deal to avert the effects of any unfavorable change of times.—Such lines would vastly strengthen our whole railroad fabric, and would tend more than anything else to give confidence in this species of property. In 1836, the whole systems of internal improvement fell through, before any practical result had been obtained. Our leading schemes are now bound to be completed, whatever may be the fact as to their success.

As we advance, the magnitude of our projects increases instead of diminishing. Active operations are to be immediately commenced upon the Illinois Central railroad by a company possessed of means, which promises the most vigorous prosecution of this work, embracing the greatest extent of line under one charter of any in the United States. The whole length of the line of this road with its branches cannot be less than 550 miles. Almost every portion of it is equally favorable, and as work can be commenced at various points with equal economy, the road can be completed in the time that it would take to construct one of half its length. In the east, the European and North American railroad will summon to its construction powerful parties, with means to open that line at the earliest day. No project in this country is likely to attract more attention, from its intimate connection with business, with our great lines of vel, and our political relations.

The Erie railroad is completed, though not

yet opened for business. The prospects of the road are most flattering, and its present earnings fully up to the estimates of its warmest friends. The earnings for April were as follows:—

Passengers and mail.....	\$87,980 81
Freight.....	101,468 70

Total.....	189,449 51
April, 1850.....	141,981 89

Excess.....\$17,467 62

The traffic of the four months of this year, compared with the same months of last year, has been as annexed:—

1851.....	\$622,563
1850.....	487,730

Increase (30 per cent).....\$134,833

As a general rule, all our railroads show a very marked increase in receipts over the past year. Every mile of new line built adds directly to the value of those in operation.

The Mansfield and Sandusky railroad bonds sold at auction this week, brought about 90 cents.

The English quotations for rails by the last steamer are from £5 2s. 6d. to £5 7s. 6d. Welsh bars from £4 15s. to £4 17s.

SALES OF STOCK IN NEW YORK.

	April 30. Sales.	April 23. Sales.
U. S '67 Loan.....	117½	117
Erie R.R.....	88½	89½
Harlem It.R.....	73½	73½
Stonington.....	43½	44
L.I. R.R.....	23½	23½
Norwich & Wor.....	65	65
Del. & Hudson.....	129½	128
Reading.....	57½	59
Morris Canal.....	16½	18½
Erie income.....	96	96
" " Bonds.....	102½	102
Canton.....	70	72
Farmers Loan.....	65	65

SALES OF STOCKS IN BOSTON.

	April 29.	April 23.
Old Colony Railroad.....	66½	67
Boston and Maine R.R.....	104½	104
Eastern Railroad.....	102½	101½
Fitchburg Railroad.....	111½	111½
Michigan Central Railroad.....	98	94½
Northern Railroad.....	69	70½
Vermont Central Railroad.....	35	35½
Vermont and Mass. R.R.....	32	33
Western Railroad.....	102½	102
Ogdensburg Railroad.....	40½	40
Rutland Railroad.....	57	58½
Boston and Worcester Railroad.....	103½	104
Rutland Railroad Bonds.....	97	97
Ogdensburg Railroad Bonds.....	97½	97½
Vermont Central R.R. Bonds.....	91½	92
Boston and Providence R.R.....	85½	85
Philadelphia, Wilm'gton & Balt.....	29½	29½
Concord R.R.....	56	56
Manchester and Lawrence.....	90	90

The Hoosic Tunnel.

A bill is now before the Legislature of Massachusetts, and has already passed the Senate, authorising the issue of State debentures in aid of the above work, secured by a lien upon the Vermont and Massachusetts, and the Troy and Greenfield railroads; the former of which is hardly able to keep its own neck above water, and the latter a road yet in embryo. We never had any faith in the practicability of this work by the expenditure of any reasonable sum, neither do we believe it will be attempted. Still we should like to see the experiment tried, and if it should turn out to be a successful one, a new and better route would be opened from Boston to the Hudson.

We know nothing about the engineering difficulties of this work, and we have hardly read the

opinion of an engineer in reference to it, but we are probably about as wise as those who claim to speak with the most confidence. Our eyes are just as good at looking through a millstone, as those of the most skilful engineer, and when the character of the excavation is a matter of conjecture, our guess is as good as that of any other person. The truth is, the whole matter of cost is the mere guess work in the world, and no sensible engineer will hazard his reputation upon an estimate with such few data. What is to be encountered in a tunnel of 4 miles, and from 1,000 to 1,500 feet below the top of the mountain, no mortal can tell, and the idea of stating a result in the absence of proper evidence, is too absurd to be tolerated. We predict that the engineer who takes charge of the work, and the person who contracts to carry it through, will be the first to quit it.

Neither can we see a necessity for this tunnel sufficient to justify its construction. The line which it is to accommodate is a rival of the Western road, and we never heard that that road had more business than it could accommodate, and accommodate very well. With a double track we presume it might dispatch twice its present business, without inconvenience to itself or the public. If this is so, it precludes all necessity of another road with a similar object. More especially can we see no reason to induce the State to embark in an enterprise which is not called for by the wants of trade and travel, and which may come into direct competition with one in which she is involved. However, the experiment would be an interesting one, and for this only should we like to see it undertaken.

European and North American Railroad.

The Legislature of New Brunswick has just passed a bill giving the above road all the ungranted land within five miles of its line on either side.

The directors of the Western railroad corporation have addressed a memorial to the Legislature of Massachusetts against the proposed loan of the credit of the State, to the amount of two millions of dollars, to the Troy and Greenfield railroad, for the construction of the Hoosic tunnel.

New York.

Hudson River Railroad.—The Evening Journal says that about twelve miles of iron rail has already been laid on the Hudson river road, between Greenbush and Hudson, and when it shall have been filled up to the depth of two feet with gravel, this portion of the railroad will be completed. It is being very strongly constructed, and when completed will be a more substantial road than any now leading from this city. It is the intention of the engineer to have it in running order to Hudson in June next. Preparations are being made for the early construction of a depot and an engine house, which will be located a short distance south of the East Albany depot.

Railroad Speed.—The 95 miles between Utica and Albany was run one evening last week, with a heavy express train, in 2 hours and 34 minutes, by the Utica and Schenectady railroad companies. This includes two stops on the Utica road and a change of engine and baggage at Schenectady. The same rate of speed from Albany to Buffalo would make the trip in nine hours.

Indiana.

Bellefontaine and Indiana Railroad.—The county of Allen has voted to subscribe \$50,000 to this work.

Wilmington and Manchester Railroad.

The president and engineers of this company have recently visited this city, for the purpose of negotiating the purchase of the iron and machinery for this great work, and we learn that there is every probability that it will be completed within the next two years.

In addition to its local uses, the public are deeply interested in this road, as the connecting link between the roads of the extreme south and those of the north. At the present time, the traveller in reaching Wilmington, N. C., is obliged to take the dangerous route by sea if he wishes to go to Charleston or Savannah, or to pass over any other roads of South Carolina, Georgia or Alabama. On the completion of the Wilmington and Manchester railroad, a continuous line will be in operation from the eastern part of Maine to Montgomery, Alabama, if not to Mobile and New Orleans.

New York.

Plattsburgh and Montreal Railroad.—The Directors are going forward energetically with this road. From the Plattsburgh Republican we learn that the directors have employed Mr. T. J. Carter, an engineer of well known competence and experience, to locate and superintend the construction of their road. We understand, also, that Mr. C. will commence operations on the locating survey on the 22d inst.; on the completion of which and the requisite estimates, &c., the contracts for grading are to be let, and the work pushed on with energy, to an early completion.

By the terms of agreement, Mr. Carter we learn has also the superintendence of the construction of the Canadian end of the road, from Mooers to Caughnawaga—thus bringing the whole line of the road, from Plattsburgh to Caughnawaga, under the eye and management of one superintending engineer.

Wisconsin.

Dodgeville and Potosi Railroad.—The Potosi Republican says that a large meeting was held at Platteville on the 13th of March, in reference to the Potosi and Dodgeville railroad company. D. A. Mackensie, Esq., was unanimously elected President of said company, and a resolution passed that the subscription books of said company be opened on Tuesday, the 22d of April, at 10 o'clock A. M., at the following places, viz: Potosi, Platteville, Mineral Point, Dodgeville, Highland, Clifton and Lancaster. There is a fair prospect of the stock being taken.

A Railroad From St. Petersburg to Warsaw.

The Emperor of Russia, having nearly completed the railroad from St. Petersburg to Moscow, (420 miles,) is now about to begin a railroad from St. Petersburg to Warsaw, between 700 and 800 miles.

The Chief Engineer of this new railroad will be Major T. S. Brown, who is now engaged on the other road, and who was late engineer on the Erie railroad.

Michigan.

A railroad Convention is to be held next month, at some point on the route between Detroit and Port Huron, to make a united effort to procure subscription for the immediate grade and superstructure of the contemplated railroad from this city to Port Huron. Offers are made for furnishing the necessary iron, as soon as the road is ready for laying it.

New York.

Northern Railroad.—The Albany Evening Journal states that this road will be put under contract in a few days. It is the intention of the Directors to push forward this important work with all possible dispatch, and to have the road in running order from this city to Cohoes early next fall. Ground will be broken at an early day, probably next week. The original intention of the projectors of this enterprise was to have this road connect with the Albany and Schenectady railroad a short distance from here, and to use their track in this city; but the Directors of the Northern road have determined to make it an entirely separate and distinct road. The line now being surveyed by Mr. BULLIONS, is due north, commencing east of the Patroon's Mansion, running along the line of the canal until it reaches the gate on the Troy road, where it is proposed to tunnel the road, and from thence run the road to West-Troy and Cohoes. If this is carried out, the track will be laid through Water street.

Illinois.

Mississippi and Atlantic Railroad.—This road is designed to connect Terre Haute with Illinoistown, opposite St. Louis, and is the same which the Legislature, at its late session, refused to grant the right of way and construction to. The stockholders, however, appear determined to push it through despite the Legislature. A meeting, to this end, was held at Vandalia on the 3d inst., over which Col. William B. Archer, of Clark county, presided. The proceedings of meetings held in various counties interested in the road, were laid before the Vandalia meeting, pledging these counties to support the Directors in any measures they may see fit to adopt in the premises. William S. Wait, Esq., President of the Board, addressed the meeting, after which the following resolutions were unanimously adopted:

1st. Resolved, That the stockholders approve of the action of the Board of Directors in procuring a complete survey of the route of the Mississippi and Atlantic railroad.

2d. Resolved, That they are highly gratified in the efforts already made, and the success that has attended the procuring the right of way thus far.

3d. Resolved, That the stockholders recommend such further measures as may be conceived necessary and expedient by the President and Board of Directors to accomplish the object of the incorporation, and that we will give our hearty support in carrying out the same.

4th. Resolved, That the Directors be requested to put the whole or a part of the road under contract so soon as a sufficient amount of stock is subscribed to justify it.

We learn that the right of way for about two-thirds of this distance has already been secured.

Railroads—Population.

The New Haven Palladium, in an article on the census of the State, gives the following results, showing the effect of railroads upon the increase of population. It says:

The very gratifying gain in Connecticut, greater than for the previous forty years, is due in a great measure, if not entirely, to the railroads which now traverse almost every part of the State. If we examine the returns from the inland towns, we will find that those lying on the line of railroads have increased largely, while others with equal natural advantages, have either lost or made very small gains. Take for instance the Housatonic road. The towns through which it passes have gained over 6,000, while the corresponding range of towns on the east, have gained less than 200. The towns on the Norwich and Worcester road have gained over 5,000, and the adjoining tier of towns about 250. So, also, those counties where there are the most railroads, have increased much

faster than other counties equally well situated. New Haven has gained thirty-six per cent., while New London has only increased fourteen. Hartford twenty-six per cent., and Tolland eleven. Fairfield twenty, and Middlesex eleven. The population to the square mile in the State, is seventy-nine and seven-eighths; in New Haven county two hundred and twenty-two; Hartford ninety-six and a half; Windham fifty and two-thirds; Litchfield fifty-one and one-fourth; Middlesex eighty-one; Tolland fifty-nine and a half. It will be seen that New Haven county has by far the largest number of inhabitants to the mile, having twenty-five and two thirds more than Hartford, which is the next largest.

Northern Indiana and Southern Michigan Railroad.

The Board of Directors of the Northern Indiana railroad company held a meeting at this place last Monday.

The grading to this place will be completed by June, at which time the iron will be here to be laid down.

The route from here west was not settled by the Board, but will be permanently located by the Chief Engineer, Mr. Jervis, probably within two weeks. The south route is one mile and five-eighths shorter than the north route; but the advantages of the two routes are so near an equilibrium that it is supposed the relative cost of the right of way will settle the question. If the north route should finally be adopted, it would run through both Terre Coupee and Rolling Prairies, skirting around and close to the high ground, at New Carlisle. On Terre Coupee the route as surveyed angles across the farms but little, varying but slightly from a due east and west line. On Rolling prairie, the angling is more unfavorable.

An assessment is ordered upon the stock, notice of which will be found in our advertising columns.

It may be as well to add, as so much has been said upon the subject, that the cars will come through without stopping or disconnecting at the Michigan State line.—*South Bend Register.*

Alabama.

Montgomery and West Point Railroad.—The annual report of the directors of this company, submitted at a meeting of the stockholders held at Montgomery on the 14th, presents the following statement of the operations of the company for the year ending March 1st, 1851:—

Receipts from passengers.....	\$78,511 29
“ freight.....	47,880 89
“ U. S. mail.....	13,664 91
“ other sources.....	8,155 48
	\$148,212 57
Deduct expenses.....	\$67,148 73
Interest on loans.....	23,492 41—
	90,634 14
Showing a net income of.....	57,571 43

Equal to 9½ per cent on the capital stock.

The road will be completed to West Point, and open for use on the 1st of May.

The company have expended in building the road, from Opelika to West Point, 22 miles, \$180,081 72.

The business of the road, for the past two years, shows a satisfactory increase in receipts, as the company only opened a part of their new road in November as far as Cusseta, and to Strahon's, within three miles of West Point, in February.

The receipts show as follows:—

	No. of Passengers.	Bales of Cotton.	Amount.
For year to—			
Mar. 1, 1851..	30,032	25,989	\$140,057 09
Mar. 1, 1850..	24,875	24,236	120,781 61
Increase....	5,157	1,753	\$19,275 48

We understand that the receipts for March, and up to the 20th of April, this year, shows a very heavy increase over last year—being this year 21,-

378; against 14,762 last year; increase, 6,616—nearly 50 per cent.

The following gentlemen were chosen directors for the current year:—

Charles T. Pollard, President.

Directors.

Thomas H. Cowles, of Alabama.

Abner McGehee, “

William Taylor, “

John P. King, of Georgia.

Illinois.

Peoria and Oquawka Railroad.—A meeting, to take into consideration the interests of the proposed road from Peoria to Oquawka was held at Knoxville on the 9th instant, at which the following resolutions were adopted:

Resolved, That while we regret the bad state of the roads has prevented very many of the friends of the Peoria and Oquawka railroad from attending this meeting, we have every confidence that the road will be built, and when built, will be of incalculable benefit to the whole region which it will affect.

Resolved, That we have entire confidence that the city of Peoria will follow the example set them by the citizens of Burlington, in voting a subscription to the stock of the road—that the action of these enterprising and growing cities will meet with a hearty response from town and county—and that when city, and town, and county shall unite in a “long pull, a strong pull, and a pull altogether,” then the construction of the road will be a fixed fact.

The people of Warren county have already voted in favor of the county taking \$50,000 stock in this road, the vote standing, so far as we have learned from our exchanges, 576 for to 113 against. The city of Peoria votes to-day (21st) upon a proposition for the city to subscribe \$75,000 to the same road.

Railroad Progress in Georgia.

The work for the junction of our railroads at Macon is going forward most satisfactorily. Timber is being fast got on the ground for the coffer dam of the viaduct over the Ocamulgee, and the lattice work is also being got out. The members of the next Legislature will pass over this new viaduct on a continuous track, and there is not the most remote doubt that the river will be crossed long before that time, for it will not be necessary to wait for the pier in the middle of the river, (should its construction be retarded) as the viaduct will be amply strong to be used temporarily without it.

The Macon and Western road have ordered their iron, surveyed the route, and made every other requisite arrangement to gain the level from the new depot on the Macon Common to a point at some distance from their depot. On this side of the river the grading, &c., for the connection, will be done in ample season. Mr. Reynolds is, at the same time, grading through the streets at Macon, and preparing the site of his new depot for the South Western road, at which the other tracks are to join.

The Milledgeville and Gordon, and Milledgeville and Eatonton roads, will be much better roads than was at first anticipated. In other words, they will have the thick flange rail from the Macon and Western road, instead of the old flat bar from the Central road, as first intended. The whole summed distance from Gordon to Eatonton is 37 miles. Of this distance, 34 miles will be laid down with the newest and best flange rail, now being removed from the Macon and Western. Hence these new roads will be quite equal to the original Macon and Western road. Already the cross ties are distributed along most of the distance from Milledgeville to Gordon. The whole distance is 17 miles. The members of the next Legislature will find at least 14 miles of that distance done. A heavy rock excavation, not far from the Oglethorpe University, may, and probably will, retard the construction of the remaining three miles.

All the contracts on the Milledgeville and Gordon road have been taken, except those for one or two bridges, and a new saw mill commenced working yesterday to cut out the stringers. Another new saw mill is being put up not far from Milledgeville, to cut out timber for the Eatonton road. The contracts for grading on this last road are all taken, and this part of the work will all be done by the first of January next.—*Savannah Republican*.

Steam Power of France.

There exists in France 5,607 manufactories of various denominations, in which steam machinery is employed. This machinery is worked by means of boilers, the number of which is 9,288, and of which 8,776 were made in French establishments. These boilers represent a force of 65,120 horse-power, calculating the horse power as 75 kilogrammes [180 lbs.] raised one metre [1 yard] per second. These boilers represent the force that would be produced by 195,361 draught horses and 1,367,530 laborers. The steam horse power is equal in effect to about four draft horses and 21 laborers. The number of boilers employed in the preceding year was only 4,033 establishments existed in which steam power was used. The length of railway now open for traffic is 2,171 kilometres [1,300 miles], on which are employed 725 locomotives. The number of steam trading vessels is 279. Their tonnage amounts to 40,098 tons. They are propelled by 502 engines, constituting a total power of 22,693 horses. The merchandise transported by these vessels amounted to 730,948 tons.

New Jersey.

Morris Canal and Banking Company.—The annual report of the directors of this company for the past year states that the canal was opened for navigation from Newark to Easton early in April, and closed about the 10th of December; during which time the navigation was continuous, and almost wholly uninterrupted. Owing to some very heavy freshets, interrupting navigation on the Lehigh canal, business was almost suspended for nearly two months. It will be remembered that this company is dependent upon the Lehigh canal and Beaver Meadow railroad for almost its entire business in the transportation of coal. The total tonnage of the past year was 239,680 against 234,305 for the year 1849. Of the total amount, coal contributed 114,017 tons.

The amount of tonnage for 1845 was 58,259; for 1846, 109,505; 1847, 153,559; 1848, 204,682. The income of the company for the year ending December 31st, 1850, is stated at \$109,173 22. The expenses for the same period were \$63,239 21.—This leaves a net balance of \$45,934 01, which would have reached \$60,000 but for the two months interruption of business operations on the Schuylkill canal. As it is, the company were enabled to pay a dividend of ten per cent on preferred stock, besides the interest on bonded debt. Since the last annual report was made, the building of ten new inclined planes, on an improved plan, has been commenced, and the old ones repaired. The aqueduct over the Pompton river has been rebuilt; the banks of the canal raised in order to increase the depth of water, and the work of reconstructing the canal from Newark to Jersey City and repairing the pier at its termination vigorously prosecuted. The whole is expected to be finished by the first of May. An increase of business, consequent upon these improvements, is of course looked for, and will no doubt accrue to the company. The number of shares of preferred stock subscri-

ed for and issued amounts to 5127 shares. The proceeds of nearly 2000 of this number were required to pay the floating debt and back interest. The remainder went to defray expenses just mentioned.

The following "general account" and statement of tolls received from 1845 to 1850, inclusive, will show the state and condition of the company and the increase of its revenue.

General Account of the Morris Canal and Banking Company, for 1850.

Cash, cash items, debts due the company, bills receivable, and suspense account at the closing of the books for 1849.....	\$3,639 55
Less debts due by the co.....	2,312 51
	\$1,346 81
Earnings in 1850.....	109,173 22
Sales of preferred stock.....	422,750 00
	\$533,270 03
Current charges for 1850.....	\$63,239 21
Floating debt and interest.....	102,125 10
Interest coupons on bonded debt.....	80,166 25
Dividends on preferred stock.....	8,033 89
New work, [improvement account].....	224,465 58
New boats.....	5,358 78
Steam tow boat.....	8,576 06
Land damages.....	3,902 92
Commissions.....	15,125 00
Salary of trustees of mortgage loan for 1848-9.....	1,200 00
Current charges for 1851.....	87 50
	\$533,270 03
Sundry Accounts.	
Debts due the co.....	\$7,097 39
Loans and bills receivable.....	26,865 64
	\$33,963 03
Less debts due by the co.....	\$12,903 92
Less bills payable.....	9,176 50
	\$22,080 42
Suspense account.....	11,882 61
Cash on hand.....	470 55
	8,482 58
	\$533,270 03

Champlain and St. Lawrence Railroad.

We have to announce to the citizens of Montreal that the President of the railroad above named, has closed for the purchase of the iron rails to complete the branch to Moffat's Island, to be shipped early this summer. There is now no doubt but that the undertaking will be perfected during the present season, and that the year 1851 will witness the connection of Montreal by rail with the cities of Boston and New York. Long have we desired to see this, and we rejoice at the prospect, ere many months, of being within a few hours' reach of those great emporiums of wealth and business. With a further extension of the lines from Rouse's Point to Plattsburg, (which will be commenced and carried on simultaneously with the works at this end,) and the ultimate connection with a road from Whitehall northward, on the west of Lake Champlain, we shall have all that can be desired in the way of communication with New York. The several railroad lines of New England, the far famed steam navigation of Lake Champlain, and the additional iron road through Plattsburg and Rouse's Point, to within one mile of our wharves, will bring to our city business and business men, with their accompanying train of wealth and prosperity.

The extension from St. Johns to Rouse's Point will be finished in the end of June or the beginning of July next. The distance will be as follows when the road is completed:

From Montreal Wharf to Moffat's Island.....	111 Miles.
" Island to Junction beyond Laprairie.....	9 43
" Junction to St. Johns.....	10 68
" St. Johns to Rouse's Point.....	22 08
Total length.....	43 20

LOWMOOR

AND U. S. BEST FINCH IRON. To Iron Merchants.

JOHN FINCH & SONS, Iron Merchants, Liverpool, now are, and for more than twenty years past have been, sole Agents for the LOWMOOR IRON COMPANY, for the United States and Canada, for the sale of their well known R. I. W. T. Bars, and Axes, Piston Rods, Boiler Plates, Angle, Rivet, and all other kinds of Lowmoor Iron; also, sole Agents for the sale of the superior Staffordshire Iron stamped "FINCH CROWN" and "U. S. BEST FINCH;" and Merchants and Wholesale Dealers in all other kinds of British Iron. &c

We hereby inform our friends and the public that we have this day appointed Mr. WM. BAILEY LANG, of Boston, as our only representative to receive orders and to transact our general business in the United States.

For JOHN FINCH & SONS,
JOHN FINCH Sen.

Boston, April 11, 1851.

LOWMOOR and other Bent, Welded and Blocked RAILWAY TIRES, ready for use, E. FINCH'S Patent Dovetailed and other kinds of WROUGHT IRON RAILWAY WHEELS, with, or without the finished Axles, for Locomotives and for Passenger and Merchandise Cars, also Wrought Iron Railway Chairs, Railway Spikes, etc.

To the Managers of Railways, Engineers and others: Gentlemen:—We, FINCH & WILLEY, Engineers, Liverpool, Manufacturers of the above articles, respectfully inform you that we have this day appointed Mr. WM. BAILEY LANG, of Boston, as our sole Agent for the sale of said articles, and the transaction of our business in the United States of America, and for whom we solicit your kind attention and patronage.

For FINCH & WILLEY,
JOHN FINCH, Sen.

Boston, April 11, 1851.

Having accepted the above Agencies, I beg leave to solicit your orders, which shall at all times receive my prompt and careful attention. Please address all communications either to MESSRS. JOHN FINCH & SONS or MESSRS. FINCH & WILLEY, Liverpool; or to me, at my Steel Warehouse, No. 9 Liberty Square, Boston. Yours very respectfully,

WM. BAILEY LANG.

Boston, April 11, 1851.

The following are testimonials of the quality of FINCH & WILLEY'S WROUGHT IRON RAILWAY WHEELS from the Yorkshire and Lancashire Railway Co., one of the largest in Great Britain, and from the London and North Western Railway Co., the largest Railway Company in the world.

LONDON AND NORTH WESTERN RAILWAY,
(Northern Division.)
WAGON DEPARTMENT, ORDELL LANE,
Manchester, January 4, 1851.

Gentlemen:—I have very great pleasure in bearing my testimony to the excellent quality of your Wrought Iron Railway Wheels.

This Company have many of them now in use on their lines, and during my experience, as their Superintendent, which is now upwards of 9 years standing, I have not known any of them to fail during that time.

I am, Gentlemen, yours, truly,

OWEN OWENS.

MESSRS. FINCH & WILLEY,
Windsor Foundry. }

LANCASHIRE AND YORKSHIRE RAILWAY, }
Wagon Department, Jan. 3, 1851. }

Gentlemen: In reply to your request writing me to give my opinion of the 700 sets of Wrought Iron Wheels you furnished this company during the years 1847 and 1848, I have much pleasure in stating that we have not had a single instance of your Wheels failing in any respect, and I consider them equal if not superior to any Wheels we have on this line of railway. The Tires being LOWMOOR Iron, 14 inch thick, I have no doubt they will run under ordinary goods' wagons 12 years without any repairs more than the tires turning up. I am Gentlemen,
Yours, truly, WM. EMMETT.

NOTE.—4 Wheels and 2 Axles are one set, consequently this order contained 200 WHEELS and 100 AXLES; value over \$100,000.

Boston Locomotive Works, —Late Hinkley & Drury— No. 380 Harrison Avenue, BOSTON.

Locomotive and Stationary Steam Engines; Boilers; Iron, Brass, Copper and Composition Castings; Coppersmith's Work, and all kinds of Railroad Machinery furnished at short notice.

ALSO



Van Kuran's Improved Rail- Road Wheel,

Patented May 1, 1849. Manufactured under the personal superintendence of the Patentee, as above. Orders for any quantity of wheels executed with dispatch, and wheels and axles fitted in the very best manner and at the lowest rates. Address
DANIEL F. CHILD, Treasurer, Boston.



Providence Tool Co.,

MANUFACTURERS OF
Plane Irons, Tooth Irons, Soft Moukling and Rabber Irons, Cornice Irons, Plow Bitts, and Planing Machine Knives:

NUTS, WASHERS AND BOLTS.

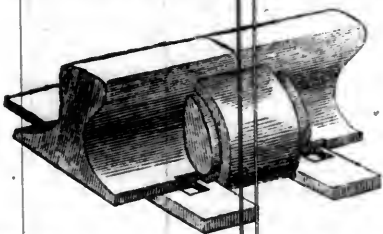
—ALSO—

PLATE HINGES AND PICK AXES.

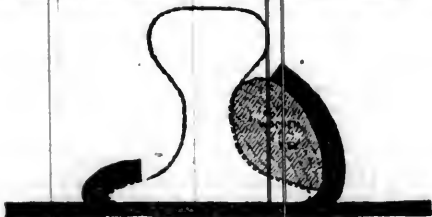
They are prepared to execute orders for all descriptions of Cold Punching and Job Work.
WM. FIELD, Agent. RUFUS WATERMAN, Treas.
PROVIDENCE R. I.

Railroad Iron, SPIKES, AND

WROUGHT IRON CHAIRS.



THE Undersigned, Agent for Manufacturers, is authorized to contract for Welsh Railroad Iron of the best quality, and deliverable at any port on favorable terms, also Spikes and Wrought Iron Chairs, made from the best iron, and of any pattern and weight. The new Wrought Iron Chair, with the introduction of a "Key," as per the annexed plan, will be found a great improvement on the old pattern.



Boiler Plates of superior quality, perfect regularity in the squaring and thickness, and made with great care.

Samples can be seen at the office, No. 20 Beaver st.
CHARLES ILLIUS.

Railroad Iron.

THE UNDERSIGNED, HAVING made arrangements abroad, are prepared to contract for the delivery of Foreign rails, of approved brands upon the most favorable terms.

They will also make contracts for American rails, made at their Trenton works, from Andover Iron, in whole or in part, as may be agreed upon.

They are prepared to furnish Telegraph, Spring and Market Wire; Braziers and Wire Rods; Rivets and Merchant Bars to order, all made exclusively from Andover Iron. The attention of parties who require iron of the very best quality for special purposes, is respectfully invited.

COOPER & HEWITT,
17 Burling Slip, New York.

February 15, 1850.

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.

August, 16, 1849.

6m33

To Contractors.

Covington and Lexington Railroad.

SEALED PROPOSALS will be received at the Covington and Lexington Railroad Company, in this city, until the fifth day of May next, for Grading forty miles of the Covington and Lexington Railroad, commencing at the town of Falmouth, Pendleton Co., and extending up the valley of the South Licking river to the town of Cynthiana, Harrison Co., thence to the town of Paris, Bourbon Co.

The proposals will include all the excavations, embankments and masonry for culverts; also, the masonry for bridges.

Plans and specifications of the work, to be seen at the office of the company at any time between the twenty-fifth of April next and the 5th of May.

SYLVESTER WELCH,
Engineer Cov. and Lex. R.R.

Office of the Covington & Lexington Railroad,
Covington, Ky., April 1st, 1851.

Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron.

THOMAS B. SANDS & CO.,
73 New street,
New York.

February 3, 1849.

Glendon Refined Iron.

Round Iron, Band Iron, Hoop Iron,
Square " Flat " Scroll "

Axles, Locomotive Tyres,

Manufactured at the Glendon Mills, East Boston, for sale by

GEORGE GARDNER & CO.,
5 Liberty Square, Boston, Mass.

Sept. 15, 1849.

3m37

Stickney & Beatty, DEALERS IN IRON AND IRON MANUFACTURERS.

AGENTS for the Baltimore City Rolling Mill, (Works of Messrs. Ellicott) also agents for the sale of the Laurel, Locust Grove and Gunpowder (Balt.) Forge Pig Irons; Hupp's Cold Blast Columbia Wheel Iron, For and anti-Eatam Pig Irons. Caledonia, Columbia and Capon Cold Blast Boiler Blooms, warranted; Wm. Jessop & Son's Steel; Old Colony and anti-Eatam Nails; Bar Iron, Boiler Plates, Hoop, Sheet, Oval, Half Oval, Horse Shoe and other Iron. Exchange Place, Baltimore.

Lovegrove's Patent Cast Iron Water and Gas Pipes.

THE Subscriber, the Inventor and Patentee of the Centrifugal mode of giving form to metallic substances while in a molten state, is preparing to make Cast Iron Water and Gas Pipes, of any dimensions, at prices much lower than they can be made in the old manner, and the pipes warranted to stand a pressure of three hundred pounds to the square inch, and to be soft enough to drill. Steam Engines and all kinds of machinery. Cast Iron Doors and Frames, and Mill Castings of every description, made to order.

THOMAS J. LOVEGROVE,
Machinist and Founder,

West Falls Avenue, below Pratt st., Baltimore.

To Contractors.

ENGINEER'S OFFICE CENTRAL OHIO R. R.,
Zanesville, March 20, 1851.

SEALED PROPOSALS for the Masonry of a Railroad Bridge across the Muskingum River at Zanesville, will be received at this office until the 15th of May next.

Also for the Iron or Wooden Superstructure of said Bridge, and for draw bridge across the Canal.

Plans and specifications furnished on the 1st of May next. Bidders may furnish their own plans and specifications, if filed at this office prior to that day.

By order of the Board.

ROBERT MAC LEOD,
Chief Engineer.

Notice to Contractors.

Virginia Central Railroad.

SEALED PROPOSALS will be received at the Engineer's Office of the Virginia Central Railroad, Charlottesville, on the 7th of May, 1851, for the Grading, Masonry and Brickwork of that portion of the line extending from Woodville to Blair Park, a distance of nine miles. Drawings and Specifications of the work may be seen from the 5th to the 7th of May inclusive. The best of references and an energetic prosecution of the work will be required.

Contractors are requested to state what work they are engaged on and when it will be completed. The directors reserve the right to accept or reject proposals, as they consider the interests of the company require. The names in full of all the parties must be given in the proposal.

By order of the President and Directors.

T. COLDEN RUGGLES,
Chief Engineer.

Charlottesville, April 8th, 1851.

ENGINEERS.

Atkinson, T. C.,

Mining and Civil Engineer,
Orange and Alexandria Railroad, Alexandria, Va.

Clement, Wm. H.,

Little Miami Railroad, Cincinnati, Ohio.

Cozzens, W. H.,

Engineer and Surveyor, St. Louis, Mo.

Alfred W. Craven,

Chief Engineer Croton Aqueduct, New York.

Floyd-Jones, Charles,

Alton and Sangamon Railroad, Alton, Illinois.

Gay, Edward F.,

Columbia and Philadelphia Railroad, Philadelphia Pa.

Gilbert, Wm. B.,

Rutland and Burlington Railroad, Rutland, Vt.

Gzowski, Mr.,

St. Lawrence & Atlantic Railroad, Montreal, Canada.

Grant, James H.,

Nashville and Chattanooga R. R., Nashville, Tenn.

S. W. Hill,

Mining Engineer and Surveyor, Eagle River, Lake Superior.

Holcomb, F. P.

Southwestern Railroad, Macon, Ga.

Latrobe, B. H.,

Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,

Buffalo and Conhocton Valley Railroad, Bath, N. Y.

Morris, Elwood,

Schuylkill Navigation, Schuylkill Haven, Pa.

Nott, Samuel,

Lawrence and Manchester Railroad, Boston,

Osborne, Richard B.,

Civil Engineer, Philadelphia.

Prichard, M. B.,
East Tennessee and Georgia R. R., Cleveland, Tenn.

W. Milnor Roberts,
Bellefontaine and Indiana Railroad, Marion, Ohio.

Roberts, Solomon W.,
Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Sanford, C. O.,
South Side Railroad, Virginia.

Schlatter, Charles L.,
Northern Railroad (Ogdensburg), Malone, N. Y.

Steele, J. Dutton,
Pottstown, Pa.

Trautwine, John C.,
Civil Engineer and Architect, Philadelphia.

Tinkham, A. W.,
United States Fort, Bucksport, Me.

Troost, Lewis,
Alabama and Tennessee Railroad, Selma, Ala.

Whipple, S.,
Civil Engineer and Bridge Builder, Utica, N. Y.

HOTELS.

DAVIS'S
ALHAMBRA HALL,
No. 136 Pratt street,
BALTIMORE.

Exchange Hotel,
Adjoining Eastern Railroad Depot,
BUFFALO, N. Y.
BY.....**FISK & SPERRY,**
Late of Delevan House, Albany.

MANSION,
Corner of Maine and Exchange Streets,
P. DORSHIMER. BUFFALO.

Barnum's City Hotel,
MONUMENT SQUARE, BALTIMORE.
This Extensive Establishment, erected expressly
for a Hotel, with every regard to comfort and convenience,
is situated in the centre and most fashionable
part of the city, and but a few minutes' walk from the
Railroad Depots and Steamboat Landings.
The House has lately undergone a thorough repair,
embracing many valuable improvements, and will accommodate 250 Guests. **BARNUM & CO.**

American Hotel,
Pratt street, opposite the Railroad Depot,
BALTIMORE.
HENRY M. SMITH.....Proprietor.
Late of the Exchange & St. Charles Hotels, Pittsburg

Washington Hotel,
BY **JOHN GILMAN,**
\$1 Per Day.
No. 206 Pratt street, (near the Depot,)
BALTIMORE.

GUY'S
United States Hotel,
(Opposite Pratt street Railroad Depot.)
BALTIMORE.
JOHN GUY. WILLIAM GUY.

DUNLAP'S HOTEL,
On the European Plan,
NO. 135 FULTON STREET,
Between Broadway and Nassau St.,
NEW YORK.

JONES' HOTEL,
NO. 152 CHESTNUT STREET,
PHILADELPHIA.
BRIDGES & WEST, Proprietors.

Fountain Hotel,
LIGHT STREET, BALTIMORE,
P. THURSTON.....Proprietor.

BUSINESS CARDS.

Walter R. Johnson,
CIVIL AND MINING ENGINEER AND ATTORNEY
for Patents. Office and Laboratory, F St.,
opposite the Patent office, Washington, D. C.

Lithography.
JOHN P. HALL & CO.,
161 Main st., Buffalo, (Commercial Advertiser Build.)
Are prepared to execute all kinds of Lithography
in good style and at reasonable rates. Particular
attention will be paid to Engraving Railroad Maps, Engineer's
Plans and drafts, etc., and orders in this line are respectfully solicited.

Cumberland, (Md.) Coals for Steaming, etc.
ORDERS RECEIVED FOR AND FILLED
by **J. COWLES, 27 Wall St., N. Y.**

J. & L. Tuckerman,
IRON COMMISSION MERCHANTS,
AND MANUFACTURERS OF
ULSTER BAR & POUGHKEEPSIE PIG IRON,
69 WEST STREET,
NEW YORK

Henry I. Ibbotson,
IMPORTER of Sheffield and Birmingham Goods.
Also, Agent for the Manufacture of Telegraph Wire.
213 PEARL ST., NEW YORK.

Charles T. Jackson, M. D.,
STATE ASSAYER, late Geologist to Maine, Rhode Island, New Hampshire, and the United States,
offers his services to his friends and the public in making
any Chemical, Mineralogical or Geological researches that may be required for the improvement of
Agriculture and the Manufacturing Arts. Particular
attention will be paid to the exploration of mines and
to assaying of ores of the metals.
State Assayer's office, 31 Somerset st.
Boston Sept. 3, 1850.

STEEL AND FILES.
R. S. Stenton,
20 CLIFF STREET, NEW YORK,
AGENT FOR
J. & RILEY CARR,
BAILEY-LANE WORKS, SHEFFIELD,
Manufacturers of Cast, Shear, German, Blister, and
Spring Steel,
Of all descriptions, Warranted Good.
FILES.
Manufacturers of Machinists' Warranted Best Cast
Steel Files, expressly for working upon Iron and Steel,
made very heavy for recutting.
A full Stock of Steel and Files at all times on
hand. 6in4

Dudley B. Fuller & Co.,
IRON COMMISSION MERCHANTS,
No. 139 GREENWICH STREET,
NEW YORK.

Manning & Lee,
GENERAL COMMISSION MERCHANTS,
NO. 51 EXCHANGE PLACE,
BALTIMORE.
Agents for Avalon Railroad Iron and Nail Works.
Maryland Mining Company's Cumberland Coal "CED"
—'Potomac' and other good brands of Pig Iron.

Samuel Kimber & Co.,
COMMISSION MERCHANTS
WILLOW ST. WHARVES, PHILADELPHIA.
AGENTS for the sale of Charcoal and Anthracite
Pig Iron, Hammered Railroad Car and Locomotive
Axles, Force Pumps of the most approved construction
for Railroad Water Stations and Hydraulic Rams, etc., etc.
July, 27, 1849.

James Herron, Civil Engineer,
OF THE UNITED STATES NAVY YARD,
PENSACOLA, FLORIDA,
PATENTEE OF THE
HERRON RAILWAY TRACK.
Models of this Track, on the most improved plan,
may be seen at the Engineer's office of the New York
and Erie Railroad.

PLUSHES

FOR
Railway Cars & Omnibuses.
F. S. & S. A. MARTINE,
112 WILLIAM ST., NEAR JOHN.
ARE now receiving a large and complete assortment
of Plain and Figured PLUSHES, of their
own importation, which will be sold at the lowest
market price, viz: Crimson, Maroon, Scarlet, Green,
Blue, Purple, etc.
ALSO—CURLED HAIR, the best manufactured
in market.

**To Railroad Companies,
Machinists, Car Manufacturers, etc., etc.**
CHARLES T. GILBERT,
NO. 80 BROAD ST., NEW YORK,
IS prepared to contract for furnishing at manufacturer's prices—
Railroad Iron,
Locomotive Engines,
Passenger and Freight Cars,
Car Wheels and Axles,
Chairs and Spikes.
Orders are invited; and all inquiries in relation to
any of the above articles will receive immediate attention.

**Manufacture of Patent Wire
ROPE AND CABLES,**
For Inclined Planes, Suspension Bridges, Standing
Rigging, Mines, Cranes, Derrick, Tilters, &c., by
JOHN A. ROEBLING, Civil Engineer,
TRENTON, N. J.

FORGING.
Ranstead, Dearborn & Co.,
MANUFACTURERS OF
LOCOMOTIVE CRANKS AND CAR AXLES,
ALSO
WROUGHT IRON SHAFTING,
And All Kinds of Hammered Shapes.
Office 25 Foster's Wharf, Boston.

Samuel D. Willmott,
MERCHANT, AND MANUFACTURER OF
CAST STEEL WARRANTED SAWS,
—AND FILES—
IMPORTER OF THE
GENUINE WICKESLY GRINDSTONES
NO. 8 LIBERTY STREET,
NEW YORK.

Railroad Instruments.
THEODOLITES, TRANSIT COMPASSES,
and Levels, with Fraunhofer's Munich Glases,
Surveyor's Compasses, Chains, Drawing Instruments,
Barometers, etc., all of the best quality and
workmanship, for sale at unusually low prices, by
E. & G. W. BLUNT,
No. 179 Water St., cor. Burling Slip.
New York, May 19, 1849.

IRON.

Iron.
Pig Iron, Anthracite and Charcoal; Boiler and Flue
Iron, Spring and Blistered Steel, Nail Rods, Best Refined
Bar Iron, Railroad Iron, Car Axles, Nails, Stove
Castings, Cast Iron Pipes of all sizes, Railway Chairs
of approved patterns for sale by
COLEMAN, KELTON & CAMPBELL,
109 N. Water St., Philadelphia.

Iron Store.

THE Subscribers, having the selling agency of the
following named Rolling Mills, viz: Norristown,
Rough and Ready, Kensington, Triadelphia, Pottsgrove
and Thorndale, can supply Railroad Companies,
Merchants and others, at the wholesale mill prices for
bars of all sizes, sheets cut to order as large as 58 in.
diameter; Railroad Iron, domestic and foreign; Locomotive
tire welded to given size; Chairs and Spikes; Iron
for shafting, locomotive and general machinery purposes;
Cast, Shear, Blister and Spring Steel; Boiler
or rivets; Copper; Pig Iron, etc., etc.
MORRIS, JONES & CO.,
Iron Merchants,
Schuylkill 7th and Market Sts., Philadelphia.
August 16, 1849. 1733

Bowling Iron. Stamped B.O.

Railway Tire Bars
Locomotive and other Axles
Boiler Plates
and every other description of this superior Iron.

The subscribers, agents for the sale of Bowling Iron, are prepared to execute orders for importation, especially for railway and machinery uses, with despatch from the manufacturers.

RAYMOND & FULLERTON, 45 Cliff st.

**Ibbotson, Brothers & Co's
CELEBRATED CAST STEEL**

Best Cast Steel Royal Improved Files, well known as better adapted for Engineers' and Machinists' purposes than any now in use in the United States.

Every description of Square, Octagon, Flat and Round Cast Steel, Sheet, Shovel and Railway Spring Steel, etc., and Steel to order for any purposes—manufactured at their works in Sheffield—and universally known by the old stamp "Globe."

HENRY I. IBBOTSON, Agent,
218 Pearl st., New York.

**Smith & Tyson,
IRON COMMISSION MERCHANTS,
BALTIMORE.**

REFINED Junata Charcoal Billet Iron for Wire. Do. for Bridging, of great strength. Flat Rock, Boiler and Flue Iron, rolled to pattern. Elba, Wheel Iron of great strength and superior chilling properties. Elba Forge Iron, American Shot Iron, Cut Nails, Spikes and Blasts, Nail and Spike rods, Railroad Spikes of superior quality, Wrought Chair plates of any pattern, punched or plain.

**WILLIAM JESSOP & SONS'
CELEBRATED CAST-STEEL.**

The subscribers have on hand, and are constantly receiving from their manufacture,

PARK WORKS, SHEFFIELD,
Double Refined Cast Steel—square, flat and octagon. Best warranted Cast Steel—square, flat and octagon. Best double and single Shear Steel—warranted. Machinery Steel—round. Best and 2d gy. Sheet Steel—for saws and other purposes. German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps. Genuine "Sykes" L Blister Steel. Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by

WM. JESSOP & SONS,
91 John street, New York.

Also by their Agents—

Curtis & Hand, 47 Commerce street, Philadelphia.
Alex'r Fullerton & Co., 119 Milk street, Boston.
Stickney & Beatty, South Charles street, Baltimore.
May 6, 1848.

Railroad Iron.

B. O. Railway Tires, Railway Wheels,
Scotch Pig Iron, Tin Plates and Banca Tin,
Muntze Patent Metal Sheathing,
Baltimore Copper.

Contracts for Rails made on behalf of the manufacturers, for delivery at any ports in the United States, at fixed prices.

Bowling Tires and Tire Bars and Scotch Pigs Imported to order.

Muntz's Ship-sheathing, and a general stock of Tin Plates and Banca Tin in store, and for sale by

RAYMOND & FULLERTON, 45 Cliff st.

IRONDALE PIG METAL, MANUFACTURED
and for sale by the Bloomsburg Railroad Iron Co.
LINDLEY FISHER, Treasurer.
75 N. Water St., Philadelphia.

Car Wheel Iron.

THE celebrated cold blast "Conwingo" Pig Iron, for Railroad Wheels, Chilled Balls, etc., for sale by
E. PRATT & BROTHER,
Baltimore, Md.

Railroad Iron.

3,000 TONS C. L. MAKE (3½ lbs. per yard, now landing and to arrive.

Also contracts made for future delivery of above superior make English Iron.

300 Tons Banks Best Iron, Round, Square and Flat.
200 " English Bar " " " "

10 " 9-16 Square Iron for Railroad Spikes.
For sale in lots to suit purchasers by

DAVID W. WETMORE.
New York, March 26, 1850. 3m

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

**JOHNSON, CAMMELL & Co's
Celebrated Cast Steel,**

AND
ENGINEERING AND MACHINE FILES,
which for quality and adaptation to mechanical uses, have been proved superior to any in the United States. Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cyclops Steel Works Sheffield.

JOHNSON, CAMMELL & CO.,
100 William St., New York.

November 23 1849.

Bowling Tire Bars.

40 Best Flange Bars 5½x2 inches, 11 feet long.
40 " " 5½x2 " 7 feet 8 in. long.
40 " Flat " 6x2 " 11 feet long.
40 " " 6x2 " 7 feet 8 in. long.

Now in store and for sale by

RAYMOND & FULLERTON,
45 Cliff street.

**Wheel, Forge and Foundry
Iron.**

LOCUST GROVE Wheel Iron of great strength and superior chilling property.

Balt. Charcoal Forge Iron, from Patuxent, Curtis Creek and Gunpowder furnaces.

Elkridge Foundry Iron, of superior strength and softness. Anthracite and Charcoal Iron from Pennsylvania and Virginia. Gas and Water Pipes, Lamp Posts from Elkridge furnace.

LEMMON & GLENN,

5m9 62 Buchanan's Wharf, Baltimore.

Railroad Iron.

1650 Tons, weighing about 61 lbs. per yard, 40 tons, weighing about 52 lbs. per yard, and 825 tons, weighing about 53½ lbs. per yard, of the latest and most approved patterns of T rail, for sale by

BOORMAN, JOHNSTON & CO.,
119 Greenwich street.

New York, Aug. 26, 1850.

N.B.—B. J. & Co are also prepared to take contracts for English rails, delivered in any of the Atlantic ports of the United States.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract to deliver Rails of superior quality, and of any size or pattern, to any ports of discharge in the United States.

COLLINS, VOSE & CO.,

New York, June 1, 1850. 74 South St.

Tredegar Iron Works.

ROLLING MILL FOUNDRY AND MACHINE
SHOPS. The undersigned continues to manufacture at his Works in this city (from best charcoal metal) Bar Iron of every description, embracing—Rounds and Squares, from ½ to 5 inches diameter. Flats, from ½ to 7 inches, all thicknesses.

Bands and Scrolls, all sizes. Boiler plate and Plough Iron. Railroad and Locomotive Axles and Tires. Locomotive Frames, Spikes and Plates. Hoops, Ovals, Half Ovals, Half Rounds, Angle, T, L, and indeed every description of Iron usually manufactured, all of which he warrants to be equal to any made in this country. He also manufactures at his Foundry and Machine Shops all descriptions of Railroad Work, say, Locomotives, Railroad Wheels and Axles complete and ready for the road, Railroad Chairs, etc. Also, Marine and Stationary Engines all sizes, Sugar mills and Engines, Horse mills, and every kind of Machinery usually required for the operations of the country. He has paid particular attention to getting up machinery, etc., for Gold Mine operations, and those in want of such work might find it to their advantage to give him a call.

J. R. ANDERSON.
Richmond, Va., Sept. 10, 1850.

CUT NAILS OF BEST QUALITY, BAR IRON
(including Flat Rails) manufactured and for sale by
FISHER, MORGAN & CO.,
75 N. Water St., Philadelphia.

Car Wheel Iron.

100 Tons "Columbia" No. 2 Cold Blast Charcoal Iron.

300 Tons "Salisbury" No. 1, do. do.
For sale by CHARLES T. GILBERT,
No. 80 Broad st.

New York, Sept 21, 1850.

Railroad Spikes.

THE subscribers are prepared to make and execute contracts for Railroad Spikes of a superior quality, manufactured by the New Jersey Iron Company, at Boonton. DUDLEY B. FULLER & CO.,
139 Greenwich st. corner of Cedar.

**S. S. Keyser & Co.,
IRON WAREHOUSE,
Corner of South and Pratt Streets,
BALTIMORE, MD.**

Selling Agents for the Rough and Ready Bar Iron and Elk Boiler and Flue Iron Rolling Mills, Sarah and Taylor Furnaces, and Wrightsville Hollow Ware Foundry, and Dealers in Bar and Sheet Iron, and Cast, Sheer, German, Blister, Spring and Electrolysed Steel, etc., etc.

Railroad Spikes, Boiler Rivets, etc.

THE Subscribers, Agents for the sale of James S. Spencer's, Jr., Railroad and Boat Spikes, Boiler Rivets, and Wrought Iron Chairs for Railroads, made at his Works near this city, will execute all orders with promptness, despatch, and of the best quality.

ALSO IMPORTERS of English refined and Merchant bar Iron; Extra refined Car and Locomotive Axles (from 3½ to 6½ inches in diameter); B. O. Locomotive Tire (welded by Baldwin). Also, supply Boiler and Flue Iron cut to pattern or otherwise.—Spring, Shear, and Cast Steel, etc., etc., etc.

T. & E. GEORGE.

Philadelphia, November 14, 1850.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract for the delivery of English, Welsh and Scotch Rails, of any pattern and weight, also for every description of English, Welsh, Scotch, and Swedish Iron, Railway Chairs and Spikes, Rivets, Bolts, Nuts, Washers, Chain Cables, Anchors, Tin Plates, German Spelter, Iron Castings, and every description of Machinery.

WILLIAM BIRD & CO.,
Iron and Tin Plate Merchants,
44 Wall st., New York.

And at 5 Martin's Lane, City, London,
and 140 Buchanan st. Glasgow.

July 27th, 1850.

**Railroad Spikes, Wrought
Chairs and Fastenings.**

THE subscribers continue to manufacture, with increased facilities, Hook and Flat Head Railroad Spikes and Chairs. The points being finished by hand, have a long taper, and sharp point, and are much superior to those made entirely by machinery.

We are also prepared to furnish Wrought Chairs, Clamps and Fastenings of every description, either punched or plain. The best quality of refined iron is used in the above articles, and our prices will be made as favorable as any in the country.

The patent Clinch Spike will be found an improvement to secure the rail at the joints.—They drive in the manner shown and are not liable to work loose.

All communications, addressed to the undersigned, will meet with prompt attention.

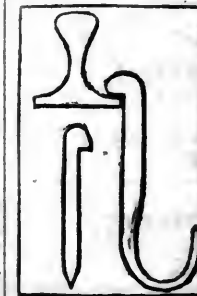
SMITH & TYSON,
No. 25 South Charles st., Baltimore Md.

Railroad Iron.

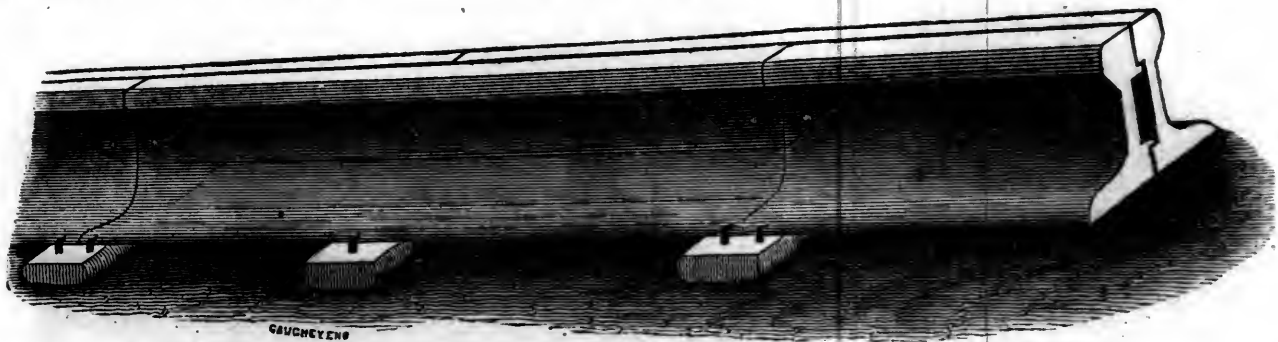
THE "Montour Iron Company" is prepared to execute orders for Rails of the usual patterns and weights, and of any required length not exceeding 30 feet per rail. Apply at the office of the Company, No. 73 South 4th st., Philadelphia,

Or to the Agents,
CHOUTEAU, MERLE & SANFORD,
No. 51 New st., New York.

September, 1850.



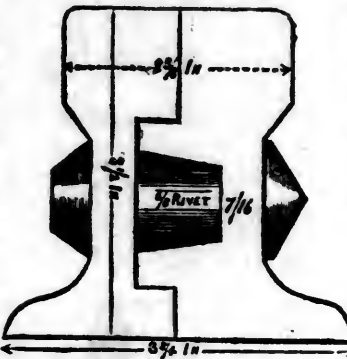
PATENT COMPOUND RAIL.



THE UNDERSIGNED NOW OFFER TO THE Railroad Public a new Compound Railroad Bar, which possesses, as they believe, a decided superiority over every kind now in use. The Cuts annexed will give a good idea of the form of the Rail, and the mode of combination.

This Rail has now been in use on the New York and Erie and the Utica and Schenectady Railroads for nearly two years, and has proved itself to be a *durable* and *continuous* rail, realizing the advantages of a theoretically perfect rail, over the one in common use. We invite the attention of Railroad Companies to a careful examination of the merits of the form now offered.

The advantages of this Rail are: first, it effects a saving of from 25 to 50 per cent. in the wear and tear of the machinery; secondly, it saves to a vastly greater extent in the repairs of track; thirdly, it secures a much higher rate of speed with the same power; and what is of still



greater importance, it offers complete protection against most of the accidents to which companies are liable. For these reasons, it is believed to be not only the best, but the cheapest rail that can be used. In enumerating its advantages, the proprietors only repeat the statements of competent persons, who have had the best opportunities of judging of its merits.

This improved Rail is now being manufactured at the Works of the Mount Savage Iron Co. in Maryland. Any communications or enquiries addressed to either of the undersigned will receive prompt attention.

J. F. WINSLOW, President,
Troy, N. Y.
ERASTUS CORNING, Albany.
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore.

April 8, 1851.

Faggotted Car and Engine Axles

FORGED by RANSTEAD, DEARBORN & Co., Boston, Mass. These Axles enjoy the highest reputation for excellence, and are all warranted.

TO RAILROAD COMPANIES, CAR MANUFACTURERS, etc.

THE Undersigned hereby gives public notice, that the Commissioner of Patents, pursuant to his decision in relation thereto, on the 8th day of October, 1850, issued to him a Patent for the sole right to manufacture, and exclusive use of the **INDIA RUBBER CAR SPRING**, on account of priority of invention of said Spring. F. M. RAY.
New York, Oct. 23, 1850.

Iron Trade of Pennsylvania.

DOCUMENTS and Statistics relating to the Manufacture of Iron in the State of Pennsylvania—giving a history of the manufacture from its commencement to this date, illustrated by diagrams. Also tables giving the address and capacity of every establishment in the State. Prepared by direction of the late convention of the trade held in Philadelphia. For sale by

LINDSAY & BLACKISTON, Philadelphia.
FIELDING LUCUS, Jr., Baltimore.
HENRY G. NICHOLS, 79 Water st., N. Y.
or at this office—price \$1 00.

It will be sent by mail to any order enclosing the money, and post paid.

Ulster Iron.

THE ULSTER IRON WORKS, Saugerties, N. Y., continue in full operation. Orders for round, square, flat, band, hoop and scroll iron, will be received and promptly executed by

J. & L. TUCKERMAN,
69 West St., New York.

Railway Iron.

THE Subscribers will contract to deliver, in the course of the ensuing Spring and Summer, the best English Rails, made by a particular specification, and of any pattern required.

DAVIS, BROOKS & Co.,
68 Broad st.

On hand for sale, English rails of 58 lbs. to the yard, made by particular specifications.
January 10, 1851. 2m

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. J. F. WINSLOW, President,
Troy, N. Y.

ERASTUS CORNING, Albany
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md

November 6, 1848.

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phoenix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehanna river; which two establishments are now turning out upwards of 1800 tons of finished rails per month. Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.

REEVES, BUCK & CO.
45 North Water St. Philadelphia;
March 15, 1849.

LAP—WELDED WROUGHT IRON TUBES

FOR

TUBULAR BOILERS,
FROM ONE AND A QUARTER TO SEVEN
INCHES IN DIAMETER.

THE ONLY Tubes of the same quality and manufacture as those so extensively used in England Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER & SON, Patentees,
28 Platt street, New York.

AMERICAN PIG IRON.

"POUGHKEEPSIE" brand, Dutchess Co., N. Y.
"GLENDON" brand, Lehigh county, Pa.
Orders for the above two well known brands will be received, and promptly executed, by
J. & L. TUCKERMAN,
69 West St., New York.

Spikes, Spikes, Spikes.

ANY person wishing a simple and effective Spike Machine, or a number of them, may be supplied by addressing J. W. FLACK, Troy, N. Y. or, MOORE HARDAWAY, Richmond, Va.
March 6, 1850.

Railroad Iron.

2000 Tons, weighing 58 pounds per lineal yard, of the most approved pattern of T rails, in store and to arrive, for sale by
COLLINS, VOSE & Co.,
74 South St.

New York, June 1, 1850.

American Cast Steel.

THE ADIRONDAC STEEL MANUFACTURING CO. is now producing, from American iron, at their works at Jersey City, N. J., Cast Steel of extraordinary quality, and is prepared to supply orders for the same at prices below that of the imported article of like quality. Consumers will find it to their interest to give this a trial. Orders for all sizes of hammered cast steel, directed as above, will meet with prompt attention.
May 28, 1849.

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for rail roads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.

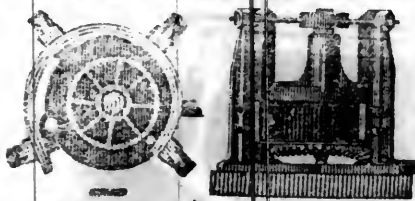
JOHN F. WINSLOW, Agent.
Albany Iron and Nail Works, Troy, N. Y.
The above Spikes may be had at fact: 17 prices, at Erastus Corning & Co Albany; Merritt & Co., New York; E. Pratt & Br: 1849, Baltimore, Md.

American Railroad Iron.

1000 Tons, weighing 50 lbs. per yard, manufactured by Reeves, Abbott & Co., at the Safe Harbor Iron Works, and now lying in yard at Brooklyn, for sale by
CHOUTEAU, MERLE & SANFORD,
No. 51 New street,

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phoenixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll sounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y. P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery for making Spikes, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

CHILLED RAILROAD WHEELS.—THE UNDERSIGNED are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

Brown's Old Established SCALE WARE HOUSE,
NO. 234 WATER ST., NEW YORK.

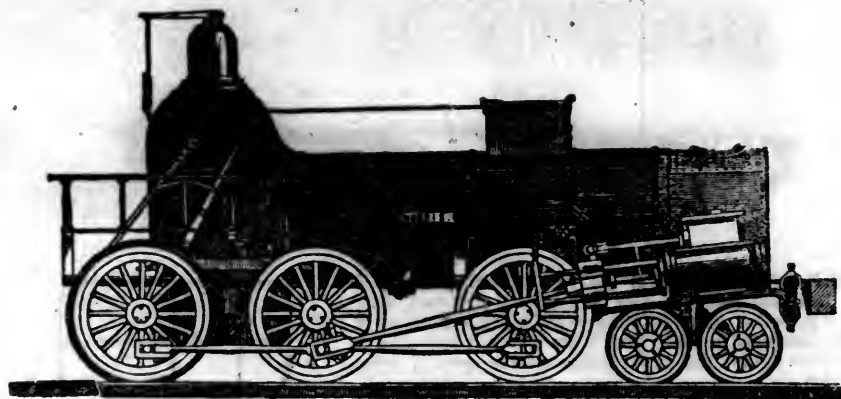
THE Subscriber, Practical Manufacturer of Scales of every description, respectfully asks the attention of Railroad Companies to his Improved Wrought Iron Railroad Track and Depot Scales which for strength, durability, accuracy, convenience in weighing, and beauty of workmanship, are not surpassed by any others in this country.

He is aware that this is rather a bold assertion for him to make, yet he can say with confidence that they have but to be tried to give them precedence over all others.

J. L. BROWN.
Bank Scales made to order, and all Scales of his make Warranted in every particular.
References given if required.

NORRIS' LOCOMOTIVE WORKS.

BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,



THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size. Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tyres are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS

PATENT MACHINE MADE HORSE-SHOES.

The Troy Iron and Nail Factory have always on hand a general assortment of Horse Shoes, made from Refined American Iron.

Four sizes being made, it will be well for those ordering to remember that the size of the shoe increases as the numbers—No. 1 being the smallest.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

Etna Safety Fuse.

THIS superior article for igniting the charge in wet or dry blasting, made with DUPONT'S best powder, is kept for sale at the office and depot of

REYNOLDS & BROTHER,
Sole Manufacturers,
No. 85 Liberty St.
NEW YORK.

And in the principal cities and towns in the U. States. The Premium of the AMERICAN INSTITUTE was awarded to the Etna Safety Fuse at the late Fair held in this city.
November 3, 1849.

UNION WORKS,

North street, opposite the Railroad Depot,
BALTIMORE.

Poole & Hunt,

Manufacturers of Steam Engines and Mill Gearing, Machinists' Tools, and all kinds of heavy and light Machinery.

Also put up Arrangements of Wrought Iron Pipes for heating buildings and conveying steam or water.

Castings of every kind furnished at short notice. Every exertion will be made to insure the satisfaction of customers.

Patent Machine Picket Fence

SIX DIFFERENT STYLES of this fence are now made by patent machinery; and is by far the most economical fence for Railroads, Farms, Yards, etc., ever yet offered to the public, costing only from 4 to 30 cents per foot, according to pattern; and is so put up as to be shipped at a trifling expense. Full particulars will be furnished, by addressing the subscriber, to whom all orders should be sent.

N. STRATTON, Troy, N.Y.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 136 NASSAU ST., NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.
SECOND QUARTO SERIES, VOL. VII., No. 19! SATURDAY, MAY 10, 1851. [WHOLE No. 786, VOL. XXIV.]

ASSISTANT EDITORS,

J. T. HODGE, *For Mining and Metallurgy.*
GEN. CHAS. T. JAMES, *For Manufactures and the
Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & Co., 136 NASSAU ST.

Saturday, May 10, 1851.

New Orleans, April, 1851.

TO THE EDITOR OF THE R. R. JOURNAL:

Dear Sir—The public mind of our city is now very much exercised upon the subject of railroads, and a proper spirit is developing itself. The main question now with us is, how shall the money be raised—by taxation, or voluntary subscription?—Our people are divided upon this issue. Knowing the means and opportunities you have of obtaining information, and collecting statistics upon this important subject, I have taken the liberty of addressing you for the purpose of obtaining your co-operation, by furnishing us with such statistical information as may be within your reach. One of our objects is to show the expediency of the city contributing, in its corporate capacity, to these enterprises, by the example of other cities—the increase of trade and general prosperity that will necessarily accrue therefrom. Any facts or suggestions

that you may be able to communicate in aid of our efforts, will confer a favor upon our cause, and upon
Yours truly,

OFFICE OF THE RAILROAD JOURNAL,
May, 5th, 1851.

Dear Sir—I am happy to acknowledge the receipt of your favor of the 23d ult., in relation to the railroad movements in New Orleans, which have for their object a more intimate connection of that city with such portions of the surrounding country as have been accustomed to make her their market.

I have long wondered at the apparent apathy of New Orleans upon the subject of railroads, feeling convinced, that without them, the advantage of her position would fail to secure her against the influences of the lines of railroads, which all the Atlantic cities are now throwing out into the Mississippi valley; and I have watched, with much interest, the efforts that have been recently making to engage your people in the prosecution of such works.

Experience has now fully proved the value of railroads as instruments of commerce. Wherever they are constructed, travel and merchandise leave their old channels for those better adapted to their wants. If one city commences their construction, all others within the sphere of its influence, must follow the example, or at once sink in the scale of relative importance. This fact has compelled every Atlantic city of any considerable magnitude, to construct, or commence the construction of lines of railroad to connect itself with portions of the country, upon which it had depended for its business. The condition of the leading towns of New England is a striking proof of this necessity. After having had their trade nearly ruined by the superior enterprise of Boston, which city anticipated all her rivals in the construction of railroads—every considerable New England town was forced into the construction of its appropriate line; and all of them are now gradually recovering the ground they had lost. Wherever there has been an experience in their use, railroads are universally admitted to be the most efficient agents in the creation of wealth that modern science has provided; and since science now so intimately connects itself with every step in our physical progress, no community can neglect, if it wishes to keep pace with its neighbors, all the aid she can furnish in

every department of industry. The necessity of building railroads, imposes heavy burdens; but these are the penalties which every community must pay, if it would reap all the advantages that modern science can secure.

New Orleans will soon have a formidable rival in *Mobile*, as a market for a large part of the cotton which now goes to the former. The completion of the Mobile and Ohio railroad, traversing the most fertile portions of Mississippi, Tennessee and Kentucky, is now placed beyond a contingency. Savannah and Charleston are now drawing off a large amount of cotton, which formerly went to New Orleans. But the most formidable rival of your city is *New York*. As soon as the enlargement of the Erie canal is completed, boats of 224 tons burden, will be enabled to pass from this city to Buffalo, and will carry freight for a less sum per mile than the average freight on the Mississippi river. Iron can now be forwarded from New York to Toledo and Detroit, 800 miles, for a sum not much exceeding \$4 per ton, including all charges, and to Cincinnati for seven dollars. With the enlargement, this rate will be materially reduced.—Iron for the Crawfordsville and Wabash railroad has just been forwarded, at a cost of \$6 90 to Lafayette, Indiana, a distance of one thousand miles from this city. The Erie canal is fast becoming the favorite route for forwarding railroad iron for roads in Ohio, Indiana, Illinois, and Wisconsin, and will soon be for Kentucky and Missouri.—From Liverpool the freight to New York is less than to New Orleans. Insurance is lower. So are port charges. New York is healthy at all seasons. So is the northern route. During the season of navigation, the canal is always in good order, and the time necessary to forward to any given point can be calculated to a day. New York being the great monetary and commercial centre of the U. States, it is for this reason, all other things being equal, by far the most convenient port for importation. The route by the canal and the great lakes is identical with the great route of travel between the east and the west; and the merchant can follow, and keep his eye upon his shipments. Every western railroad must have an agent in this city to attend to its financial concerns, who can see to the forwarding of the iron and machinery for a road without additional charge. For these reasons New York is rapidly enlarging the sphere of its in-

fluence in the Mississippi valley. To show the extent of western trade, I would state that the value of the merchandise that passed over the New York (chiefly the Erie) canals the past season, was nearly \$160,000,000. This amount is rapidly increasing, and with the enlarged canal, the State Engineer, in his recent report, estimates that this amount will be doubled in 5 years! I give this fact to show what your people will have to contend with in New York; and New York is but one of your rivals. To understand the extent of your danger is the surest pledge that you will take the proper steps to avert it.

For the reasons stated, it is too late in the day for a city like New Orleans to stop to calculate the extent of the benefit that would flow from the building of railroads. They are essential to her progress. She must build them, or retrograde; and she has too much pride to present, in her own case, such an anomaly in our almost universal advance and improvement. Boston, New York, Philadelphia and Baltimore, from the influence of railroads, are having a much more rapid growth than at any former period. New York has just begun to feel the influence of her lines of road, and her increase, including her environs, from 1843 to 1850, was fully 250,000! The increase must be vastly greater for the next five years.

The mode in which money is raised for public works, always exerts an important influence upon the economy of its expenditure. It is well known that money expended by the general government, never accomplishes one-half as much, as the same amount expended by individuals. The reason is obvious. In the former case, those interested in its disbursement, have no interest in the result. In the latter they are directly so. One-half of the money expended by the State of Pennsylvania, upon her public works, would, in private hands, have accomplished twice as much. So with a city.—One of its inhabitants is more directly interested in the proper expenditure of its revenues, than in those of the United States: still, in this case, the portion that he is called to contribute is so small, compared with the aggregate sum, he does not feel the necessity of that rigid accountability, that he would, if he contributed a large portion of the whole. On every hand can we find illustrations of this truth. In prosecuting all public works, therefore, it is a great desideratum, in fact it is almost a necessary condition of success, that those who have the application of the money, should have a large direct and personal interest in the result; with whom failure involves the loss of a considerable portion of their property.

It is, at the same time, equally important, that public credit should furnish a portion of the means necessary for a work by which a community in the aggregate is to be equally benefited. There can certainly be no more equitable mode of raising money, than to make the burden and the advantage go together. Where private capital is called upon for a large amount, a scarcity of money may be the consequence, because this must be furnished by the community immediately interested. But a public credit, such as would be the debentures of New Orleans, will command the money in any market, and may be made the means of drawing money from abroad. The building of railroads, therefore, by money obtained upon such credits, has a direct tendency, for the time being, to make it plenty, instead of scarce. If we could have the same security, that money raised in this way would be

equally well expended as that raised by private subscriptions, and also that, from the facility of obtaining it, there would be no danger that railroads would multiply beyond the wants of business, there can be no doubt, that the best and cheapest mode of raising the means for our railroads would, in all cases, be by the corporate subscription of cities and towns.

The safe and economical policy, is the *medium* between the two—for individuals to contribute a sufficient sum to make them directly interested in the result, and then for the community in the aggregate to furnish the necessary balance, upon the security of what has already been provided. This course leaves a railroad in private hands, and secures to it all the advantage of private management, with the economy of ample means provided without crippling those of individuals or the community.

The manner in which the means for the Atlantic and St. Lawrence railroad have been provided, affords, perhaps, as good an illustration of a happy combination of public credit and private capital in the prosecution of a great work, as can be found. The whole road is about 275 miles long—that portion in the United States being 150. The construction of this division devolved upon Portland, a city of about 20,000 inhabitants. At the commencement of this work, individual subscriptions were obtained in that city to the extent of \$1,000,000, which were promptly paid and expended. The sum was nearly sufficient to open the road to a paying point. The city then obtained permission to lend its credit to the road for \$1,000,000. This credit readily sold. When the further progress, and the prospects of the road justified it, the city was authorised to pledge its credit for an additional sum of \$500,000, making the whole amount furnished \$2,500,000, and this by a town of only 20,000 people. The amount of cash means required for that portion of the road in the United States, was something over \$4,000,000. Any balance wanting, is to be provided by a sale of the company's bonds. All of this immense sum has in this manner been raised by a small town, without crippling its means, or impairing its credit. The bonds of the city, though only 6 per cents, have remained above par. The road has progressed with wonderful rapidity, and the business of the city has increased with equal ratio. Those having the management of the road, contributed in the outset a very considerable portion of their own property, and the sums paid by them are the pledges for the faithful performance of their duties and trusts. Should the road fail to pay well, they and their associates must bear the loss. They have the double inducement to careful management, not only in the ordinary ambition which every person feels of having the reputation of presenting a good account of his stewardship, but in the pecuniary loss which must follow from the least improvidence, or inattention.

Such are our views as to the manner in which cities in their corporate capacity should be connected with railroads. We believe that they are fully sustained by experience. The economical mode of raising money is upon the credit of the community. To expend it economically we must connect this expenditure with a personal interest. We should regard it as a great misfortune, for New Orleans, in the present condition of railroad enterprises there, to vote a large sum to a railroad, before any efforts had been made to obtain a portion of the

money wanted by individual subscriptions. If that city commences the construction of railroads, the projects now before her will soon embrace but a very small number of all she will be called upon to aid. For all such, she cannot expect to furnish, in her public capacity, all the aid required. She must in the end resort to the very course which she now perhaps may decline to follow. But the reasons we have assigned are not the strongest arguments against corporate subscriptions in the outset. If the money is furnished in this manner, each individual, under the pressure of his business engagements, will excuse himself from any personal attention to the subject of its expenditure. He votes the loan, and then says, "I have done all in my power; some body must build the road"—and never enquires into the matter again. The money perhaps goes into the hands of incompetent persons, for it is more likely to get into such than into competent hands. Instead of building the road, for which it was intended, a portion of it is lost. A new loan is demanded, and those who voted the first, become disgusted with the whole subject of railroads, and give to them and their management a sweeping condemnation. They will never afterwards listen to anything relating to these works; the whole system is regarded as a nuisance and a humbug.

On the other hand, what is likely to be the result when railroads are commenced, and prosecuted for a time by private means? Every person who contributes \$1000 has something at stake—something that constantly calls his mind to these subjects. He has put into a work his money; the earnings probably of years of toil; and he is very naturally desirous that what has cost him so much labor shall not be wasted. He keeps a sharp eye upon those who have the spending of it; and if anything, in his estimation, goes wrong, the public is sure to hear from him. The directors of the road are in this manner surrounded by men at every turn, who are watching every step they take; and the knowledge of this fact, goes far towards securing the best management, and the most rigid accountability. Every stockholder constitutes himself a committee of public safety, and thus secures the end he has in view, just as if he were regularly appointed as such. But there is another capital advantage growing out of private subscriptions. A man, as soon as he takes stock, begins to study the subject of the construction of railroads—of their uses—of the relations they bear to business—to the increase of property—of their social influences, etc., etc. The study of this great subject is of the most interesting and improving character. It connects itself with everything that concerns life, with science, with morals, with political relations and economy. It liberalises and improves the mind and prepares a person to meet cheerfully further calls, that are certain in this age of progress to be made upon him. In the end, it not only makes him expert in all matters relating to railroads, but makes him, in everything else, thrice the man he was before. But where no sufficient motive is presented to the mind, to turn it from its accustomed channels, it plods on in the old way; and although a city may vote liberally, all expenditure unconnected with that training of which we have spoken, and which grows directly out of a personal interest, can never be turned to a profitable account.—Means raised this way, are tools without skill, power without intelligence, just as likely to do harm as good. Money expended by accident, is never

well expended. Ignorance, which in practical affairs is nothing more than inexperience, can never expend economically. Why did the early efforts of Illinois, in her internal improvement schemes, present such a disastrous result? She voted a plenty, and had an abundance of money, till she lost her credit, by her incompetence in using it. One hundred millions at the time would have done her no more good than the twenty she lost. It would have served to crush her more deeply to the earth. She lacked the requisite experience in its expenditure. The lapse of fifteen years has given her this experience, and she is now successfully proceeding in the work of railroad construction, with as much caution and good sense, and with every prospect of a favorable issue, as the most experienced and successful of her neighbors. This breaking down of a whole State was no accidental affair. It was inevitable. As well might an infant bear the load of a giant, as could she stand up under the load she imposed upon herself. I do not mean to compare the matured growth of New Orleans with the immaturity of Illinois, or to intimate that a similar use of means would produce a similar result. Far otherwise. I have cited the latter as an extreme case. But wherever a like condition of things exists, we must, to a greater or less extent, expect a like issue.

The application of these views is easily made. If New Orleans commences the construction of railroads, let her commence with the means of her citizens, which are abundant. In the outset, let her lay a deep and broad foundation, upon which all her projects can securely rest, based upon the personal interest of every citizen. The moment a man takes stock he puts himself to school. He studies the subject of railroads in every aspect. He qualifies himself for a director, or he renders himself competent to judge of their fitness. He prepares his own mind for further contributions when such are wanted. A highly enlightened public sentiment is thus created, which directs and controls, without legal enactment, the application of money. Railroad projects, instead of resting upon the vague idea of their importance existing in a community, and dependent for their means upon the fickleness which is the inseparable attendant of ignorance, rest upon an enlightened conviction, which is sure to point out the proper course, and always to supply means corresponding with the result to be obtained. Such is the difference between an enlightened and an unenlightened community, upon every subject that concerns its interests. I urge these views still more strongly, from the fact, that when N. Orleans has once put her hands to the plough, there is no looking back. The expenditure of one million merely lays the foundation for ten more. Boston, with her \$75,000,000 in railroad stocks, is as much occupied as ever with new projects. Her example merely illustrates what is to be the experience of other cities. Such being the fact, how important is it, that a suitable education and training should commence, and keep pace with a similar expenditure.

Indiana.

Terre Haute and Indianapolis Railroad.—The Terre Haute Express says, the President of the Terre Haute and Richmond railroad company, Chauncy Rose, Esq., returned home on Sunday last, in good health, from the east, where he had been for several months past, on business of the company. His operations have been very successful, and we congratulate our citizens on the pro-

spect of an early completion of the road. Three barges of iron are now on their way from New Orleans to Terre Haute, and will soon be received at this place and Madison in quantities to be conveniently placed down, beginning at each end about the same time. All the necessary machinery to put the road in operation, will also soon be received. The road is ready for the superstructure, and we are rejoiced to learn that before frosts of another winter shall come, the slow and dangerous mode of travel from here to Indianapolis, by stage, will be superseded by the steam car.

We understand that the bonds of the company were readily and favorably negotiated; this, no doubt, resulted in part from the high credit the company has attained, by its having been prudently and economically managed.

Statistics of Great Britain.

We are indebted to a friend for a copy of a valuable work that has just been published in London on the Statistics of Great Britain. It furnishes information of a truly interesting character. We proceed to notice a few of its most important statements:—

PROPERTY IN THE SOIL OF THE UNITED KINGDOM.

Annual rental of the land of Great Britain.....	£45,753,610
Rental of the land in Ireland.....	17,618,886
Value (according to 60 years' purchase) of the land in Great Britain and Ireland.....	1,901,144,730
Poor rates of England and Wales...	5,271,264
Farmers' live stock, dead stock, wages and supplies.....	604,833,730

PRODUCE OF THE SOIL OF THE UNITED KINGDOM.

Wheat, annual value.....	\$73,059,700
Barley, ".....	30,888,000
Oats, ".....	62,302,000
Potatoes, ".....	51,800,000
Gardens, ".....	31,600,000
Straw, ".....	108,593,463
Turnips, ".....	36,400,000
Hay, clover, rye, grass, and the meadows.....	78,750,000
Best pasture.....	106,250,000
Tares, chicory, carrots, &c.....	19,800,000
Grazing, second class pasture.....	58,500,000
Natural grazing, rivers, sites, towns, &c.....	7,380,470
Forests, trees, &c.....	16,000,000
Hops, flax and hemp.....	5,500,000
Lime, stone, bricks and clay.....	24,000,000
Iron, coal, lead, tin, copper, salt, &c.....	50,000,060

Grand total of the produce of the soil of the United Kingdom..... £670,524,132

INVESTMENT OF CAPITAL.

Estimated Capital vested in the following Branches of Business.

Capital vested in land.....	£3,109,778,940
cultivating do..	604,833,736
	£3,714,612,670

" cotton trade.....	£45,000,000
" woollen trade....	38,000,000
" linen trade.....	12,000,000
" silk trade.....	12,000,000
" leather trade....	15,000,000
" iron, hardware & cutlery.....	30,000,000
" ditto.....	3,700,000
" coal trade.....	18,000,000
" glass, china, &c..	8,000,000
" paper, books, colors, &c.....	10,000,000
" spirits, porter, &c.	37,000,000
	£223,700,000

THE IRON TRADE OF THE UNITED KINGDOM.

The value of that which is consumed at home,

is estimated at the declared value of that which is exported:—

Imported, 1847.....	Tons. 33,317
Made, 1847.....	1,999,688
Total for use.....	2,032,925

Pig iron exported....	176,036
Wrought do., (bar, bolt, &c.,).....	373,623
Hardware and cutlery, do.....	20,615
	570,324

Remain for home use.....	1,462,601
Divided thus—	
Wrought and unwrought.....	1,059,608
Hardware and cutlery, do.....	402,993
	1,462,601

Wrought and unwrought, home use.....	1,059,608	at L 958=	10,151,544
Hardware and cutlery.....	302,692	1136	45,780,000

Total home consumption.....		£55,931,544
Total value exported.....	L.7,607,760	
Of which to British possessions.....	1,236,522	1,236,522

Leaves for foreign parts.....	L.6,371,238
British consumption.....	£57,168,066
Add foreign.....	6,371,238

Value iron trade, 1847..... £63,539,304

REMARKS.

The whole material is the produce of the British soil and British labor. Besides persons immediately employed in the greater branches of the manufacture [47,554 are employed in mining.] 323,681 individuals in Great Britain engaged in different trades, of which iron is the staple.

The export to the home consumption is only about *one-tenth*. In 1846 = 147 tons iron were manufactured into 300,000,000 steel pens, which, at the value of one-eighth of a penny each, would amount to £166,950.—*Phil. Inq.*

On some Properties Peculiar to Caoutchouc, and their Applications.

Caoutchouc is a vegetable constituent, the produce of several trees; the most prolific in this substance are, *Siphonia Caoutchouc*, *Ureola Elastica*, *Ficus Elastica*, &c.; of these the *Siphonia Caoutchouc* extends over a vast district in Central America, and the caoutchouc obtained from this tree is best adapted for its manufactures. Over more than 10,000 square miles in Assam the *Ficus Elastica* is abundant. The *Ureola Elastica* (which produces the Gintawan of the Malays,) abounds on the islands of the Indian Archipelago. It is described as a creeper of growth so rapid that in five years it extends 200 feet, and is from 20 to 30 inches in girth. The tree can, without being injured, yield by tapping, from 50 to 60 pounds of caoutchouc in one season. A curious contrast is exhibited in the tardy growth of the tree from which the Gutta Percha is obtained. This tree does not come to its prime in less than from 80 to 120 years. The produce cannot be obtained but by the sacrifice of the tree. It is found in a concrete state between the bark and the wood after the tree has been cut down, and it is in this condition that, having been scraped out, it is sent to our market.

When coagulated by evaporation or agitation, caoutchouc separates from the aqueous portion of the sap of the trees which yield it. The solid and fluid cannot afterwards be reunited, any more than butter is capable of mixing with the milk from which it is separated. Caoutchouc is a hydrocarbon. This chemical character belongs to all

varieties of the substance, and many other vegetable constituents, though they differ materially in physical qualities. Some specimens are harder than Gutta Percha itself, while others never solidify, but remain in the condition of bird lime or treacle.

The process termed the *vulcanising* of caoutchouc was discovered by Mr. Thomas Hancock in 1843. A sheet of caoutchouc immersed in melted sulphur absorbs a portion of it, and at the same time it undergoes some important changes in many of its characteristic properties. It is no longer affected by climatic temperature; it is neither hardened by cold, nor softened by any heat which would not destroy it. It ceases to be soluble in the solvents of common caoutchouc, while its elasticity becomes greatly augmented and permanent.

The same effect may be produced by kneading sulphur into caoutchouc by means of powerful rollers; or the common solvents, naphtha and spirit of turpentine, may be charged with a sufficient amount of sulphur in solution to become a compound solvent of rubber. In these cases articles may be made in any required forms before heating for the change of condition. It is necessary, however, for this purpose, that the form should be carefully maintained during the exposure to the heat necessary to effect the vulcanisation which leaves it in a normal state. A vulcanised solid sphere of 2½ inches in diameter, when forced between two rollers ½ inch apart was found to maintain its form uninjured. In fact, it is the exclusive property of *vulcanised* caoutchouc to be able to retain any form impressed upon it, and to return to that form on the removal of any disturbing force which has been brought to act upon it.

Caoutchouc slightly expands and contracts in different temperatures; it is also capable of being condensed under pressure. A cube of 2½ inches, impactly secured, was subjected to a force of 200 tons. The result was a compression amounting to 1-10th; great heat appeared to have been evolved, and the excessive elasticity of the substance caused a fly-wheel weighing 5 tons to recoil with alarming violence.

The evolution of heat from caoutchouc under condensation is a property possessed by it in common with air and the metals. It differs, however, from the latter in being able to exhibit cold by reaction. Mr. Brockdon stated that he had raised temperature of an ounce of water 2° in about 15 minutes by collecting the heat evolved by the extension of caoutchouc thread: he refers this effect to the change in specific gravity. He contends that this heat thus produced is not due to friction; because the same amount of friction is occasioned in the contraction as in the extension of the substance, and the result of this contraction is to reduce the caoutchouc thus acted upon to its original temperature.

Among the latest applications of the elastic force of caoutchouc—the chief purport of Mr. Brockdon's lecture—attention was directed:

1. To Mr. E. Smith's patent application of tubes of vulcanised caoutchouc as torsion springs to roller blinds—adjusted to the heaviest external blinds of houses, or the most delicate carriage blinds; and equally applicable to clocks and various machines as a motive power.

2. To the raising of weights (Mr. Hodge's patent application.) Short lengths of caoutchouc (termed by him vulcanised power-purchases) are successively drawn down from or lifted to a fixed bearing, and attached to any weight which it is required to raise; when a sufficient number of these power purchases is fixed to the weight, their combined elastic force lifts it from the ground. Thus ten purchases of the elastic strength each of 50 lbs. raise 500 lbs. Each purchase is six inches long and contains about 1½ oz. of vulcanised caoutchouc. These ten purchases, if stretched to their limit of elasticity, not of their cohesive strength, will lift 650 lbs. This power—the accumulation of elastic force—though it obey the common law of mechanical powers, differs enough to be distinguished as a new mechanical power.

The same principle is applicable to relieve boats in tow from the strain they are subject to, and to easing the strain on ships' cables, especially where several boats are towing one vessel.

3. Applied as a projectile force. A number of

power purchases, attached to the barrel of a gun constructed to project harpoons, will exert a power if suddenly relieved proportioned to their aggregate forces.

Similar contrivances have been made for projecting balls 200 yards or more; a charge of No. 4 shot can be thrown 120 yards. On the same principle a bow was contrived in which (reversing the usual form) the string alone was elastic; this bow throws a 30-inch arrow 170 yards.

There were also exhibited adaptations of this material, for restraining furious horses—for slinging horses whose limbs have been broken—for enabling bed-ridden persons to assist themselves, for strengthening feeble joints, and many other new and valuable purposes.—*Heraclitus's Journal*.

U. S. Mint.

The operations of the United States Mint at Philadelphia, during the past month of April were as follows:

GOLD.	
117,744 double eagles, value.....	\$2,354,880
21,179 eagles	211,790
88,908 quarter eagles.....	222,270
387,118 gold dollars.....	387,118

614,949 pieces. \$3,176,058

SILVER.	
24,000 dimes	2,400

COPPER.	
1,333,676 cents.....	13,336 76

1,972,625 pieces. \$3,191,794 76

Total gold bullion deposited for coinage from 1st to 30th April, 1851, inclusive:

From California.....	\$2,785,500
From other sources.....	75,000

\$2,860,500
Silver bullion deposited in same time.. 18,000

The coinage of three cent pieces has reached to about \$16,000, and is progressing rapidly. By instructions from the department, one half of this coinage is to be reserved for the assistant treasurers and government depositories in distant cities, who will, by exchanges and otherwise, introduce them into circulation. The balance will be paid out at the Mint, in amounts of \$30, \$60 and \$150. The issue will take place on the 8th inst.

The British and North American Royal Mail Steam Navigation Company's New Steam Vessel "Africa."

Built by Messrs. Robert Steele & Co., Greenock, 1851. Engines, &c., by Mr. Robert Napier, Glasgow.

	British.		American.	
	Ft.	In.	Ft.	In.
Length aloft.....	267	0	267	0
Ditto, keel and fore rake... 267	0	267	0	0
Breadth of beam.....	40	6	40	6
Do. over paddle-boxes.... 63	6	63	6	6
Depth of hold.....	27	6	20	3
Length of engine-space.... 92	3	92	3	3
Tonnage.....	Tons.		Tons.	
Hull.....	2128		2106	
Contents of engine space... 811			800	

Register.....1316 1305

New measurement. British Act for foreign vessels.

	Ft.	Tns.	Ft.	Tns.
Length on deck.....	265	2	265	2
Breadth on do., amidship... 37	6	37	6	6
Depth of hold on ditto.... 27	2	27	2	2
Length of engine space.... 92	3	92	3	3

Tons. Tons.
Hull.....2226 2067
Contents of engine-space...1010 1010

Register.....1216 1057

By the loaded act this vessel is 748 tons less than the *Pacific*. A pair of side lever engines of 814 horses nominal power; diameter of cylinder, 96 inches × 9 feet length of stroke; paddle-wheels, diameter extreme, 37 feet 7 1-2 inches, and 36 feet

10 1-2 inches effective; 28 floats, 9 feet 2 inches × 3 feet 2 inches; three sets of 28 arms; 8 floats in water, at a mean draft of 19 feet 3 inches.

Four flue boilers, with return flues at the back of the boiler; length 20 feet; breadth 16 feet, height 12 feet; with a large steam chest; 20 furnaces, 5 in each boiler, length, fire bars, 8 feet breadth, 2 feet 9 inches; height 7 feet; passage between boilers, 2 feet wide; boiler to bunkers, 7 feet 7 inches; bunkers hold 890 tons of coals draught of water, (mean,) with engines, boiler &c., 15 feet; carries 1,842.9 tons of cargo.

Kentucky.

Covington and Lexington Railroad—The city of Covington is one of the most thriving and promising of any in the west, is separated from Cincinnati by the Ohio river, but connected by numerous steam ferry boats of the first class, as is the city of New York with that of Brooklyn, making, as it were, one city. Its location is exceedingly favorable, being at the junction of the Licking river with the Ohio; and its contiguity with the cities of Cincinnati and Newport, gives it many advantages. Its rapid growth within the last few years is without parallel, as the following statistical report (copied from certified reports in my possession) will show:

1845—Value of real estate in the city was \$1,065,245
Population3,567

Revenue 5,500

1846—Value of real estate.....\$1,420,962

Population4,030

Revenue 6,042

1849—Value of real estate.....\$2,759,837

Population7,014

Revenue 17,685

1850—Value of real estate.....\$4,408,918

Population9,010

Revenue 34,000

The entire debt of the city, prior to the issuing of the one hundred thousand dollars, was 25,000 dollars, borrowed in 1830 for a period of 30 years, which will fall due in 1860; she has always paid promptly the interest when due. The real estate owned by the city is worth \$80,000. The above one hundred thousand dollars of bonds were given to the Covington and Lexington railroad company in payment of subscription to their capital stock, by said city holding stock therefor. Although the foregoing shows an uncommonly rapid improvement, yet, with our prospects for the completion of the Covington and Lexington railroad, we consider her improvements but commenced. This road will run from this city, through the counties of Kenton, Pendleton, Harrison, Bourbon and Fayette, to the city of Lexington, (distant about ninety miles), the acknowledged garden spot not only of Kentucky, but America. We have had thirty-four miles under contract, and the work rapidly progressing for several months, and have advertised to let forty miles more on the 5th of May next.—The road is intended to be of the best class, there being no grades that will exceed twenty-one feet to the mile, and no curves short enough to impede the rapid passage of cars. The radius of curvatures on the curved parts of the line, exceeds for the most part 1900 feet.

The road is estimated to cost about \$17,-

000 per mile, making\$1,530,000

Stock subscribed by individuals, \$525,000

The city of Covington, payable

in the bonds of the city..... 100,000

Cincinnati bonds, a loan to the

company..... 100,000

725,000

In addition to the above, the county of Kenton, has, by authority of an act of the legislature, voted by a majority of 641, for an ad valorem tax on the property of the county of one per cent. per annum, for three years, which will amount, when collected, to about \$220,000. Besides this, the legislature, at its last session, authorised the county of Bourbon to subscribe the sum of \$100,000. Added to the above, will make the sum total of one million two hundred and forty-five thousand dollars, which will ensure the speedy completion of the road. You will see, by casting your eye on the map of Kentucky, that this is a road of vital importance, running as it does from Cincinnati in a direct line to

Lexington, Ky. One important feature of our charter is, that we are at liberty to declare any amount of dividend the road may make, while some companies in the west are limited down to an amount not exceeding fourteen per cent. per annum. And while the roads leading from Cincinnati on the Ohio side of the river have great competition in the various roads now completed and under construction, this road will be without a rival, as it is located in the valley of the Licking river, the only practicable route from Cincinnati to Lexington; and at no very remote period will no doubt become the main thoroughfare for the transportation of the various commodities brought from Charleston, S. C., and Savannah, Ga., which States are already pushing their roads with rapidity, in a course to meet those leading from Lexington, Ky., toward these points; when completed will make a direct railroad communication with Charleston, Savannah and the lakes, by the way of Covington and Cincinnati.

The completion of this road will also make tributary to it, that most fertile and productive region embraced in the counties adjacent to Fayette, Bourbon, Harrison, etc. The five counties through which this road runs, shows an assessed value of taxable property amounting to \$43,880,114.

Baltimore and Pennsylvania.

The Baltimore American, in speaking of the lines of railroads now opening into the interior of Pennsylvania, and connecting with that city, says:

The completion of the short railroad link of 25 miles, known as the York and Cumberland railroad, has brought the cities of Baltimore and Harrisburgh within less than five hours' ride of each other, and has in like manner effected a direct connection with the Cumberland Valley railroad, and also with the Pennsylvania railroad. These new connections have existed but a short period, yet they have already afforded evidences of their value, which it is very gratifying to us to refer to.—The trade and travel between Baltimore and Harrisburgh have been largely increased, and exhibit all the indications of a continued steady growth.

The business on the line of railroad from this city to Harrisburgh, now requires the whole force of the road in engines and cars, and were the stock double the present amount, the whole would be actively and profitably employed. The president and directors of the Baltimore and Susquehanna railroad are increasing, as rapidly as possible, facilities for the transportation of produce, and are applying themselves, with their usual diligence and discretion, to promote the various interests concerned to the utmost of their ability. Preparatory explorations and surveys have been made, or are in progress, to connect the road with Westminster from some eligible point, from whence it may be continued farther west, so as to form a more direct communication between Baltimore and the more western counties of Maryland. The proceedings of the company are characterized by great energy and enterprise, and the result is, a most extraordinary advance in the price of the stock.

The Baltimore and Susquehanna railroad was considered, for a long while, a dead burthen upon the State treasury, paying little or no interest on the heavy advances made. Henceforth it will, we feel confident, be able to pay regularly the annual interest upon the whole debt, besides providing additional stock for the road and making repairs and improvements. We congratulate the citizens of Baltimore and of the whole State on this happy result, and think that they may look to this road as a source of enlarged trade and of permanent revenue.

In connection with the above, we copy the following from the York, Penn., Democratic Press:

"The bill incorporating the Susquehanna railroad company, which, when completed, will secure a connection for the York and Cumberland railroad, with the Pennsylvania railroad on the west bank of the Susquehanna river, and with the coal fields of Dauphin and Northumberland counties, passed at the close of the session of the Pennsylvania Legislature, and has been signed by the Governor. This is a most important improvement to this section of Pennsylvania, and to the business interests of the city of Baltimore. It is a link in a chain of improvements that will, at no distant

period, extend to Lake Erie, and will command an immense foreign and local trade. This great project was opposed by Philadelphia, and that portion of our State the citizens of which have been induced to believe that their interests are identical with that city. It was a determined and a decided opposition—so much so that we regard the success of the measure as one of the greatest triumphs ever achieved by the representatives of that section of the State, who invariably find in Philadelphia an antagonist, whenever they ask the privilege of constructing an improvement designed to benefit their own locality, and which will not inure to advantage of our great metropolis.

"We know of no individuals to whom the credit of the success of the railroad and the tax bills can be more freely awarded than to Robt. M. Magraw, Esq., the energetic President of the Baltimore and Susquehanna railroad. He was present at Harrisburgh during the greater part of the session, and while he supplied his friends with the valuable information upon railroad matters, which he always has at command, he gained the respect of the opponents of his measures, by his gentlemanly deportment and kind and social disposition. As a resident of a sister State, whose institutions and customs differ widely from our own, with sectional prejudice against him, he entered the field of his operations and did not leave it until his efforts were rewarded with success, and he had gained hosts of warm friends. We feel confident that in these remarks we are but expressing the views of all who understood Mr. Magraw's operations at Harrisburgh—we repeat what we have heard repeated from many with whom we conversed during the session of the legislature, and since its adjournment. A desire to render "honor to whom honor is due," induces us to mention his name in this connection."

Sidney Smith on Progress.

It is some importance at what period a man is born. A young man, alive at this period, hardly knows to what improvements of human life he has been introduced; and bring before his notice the following eighteen changes which have taken place in England since I began to breathe the breath of life—a period amounting now to nearly seventy years. Gas was unknown; I groped my way about the streets of London, in all but the utter darkness of a twinkling oil lamp, under the protection of watchmen, in their climacteric, and exposed to every species of insult. I have been nine hours in sailing from Dover to Calais, before the invention of steam. It took me nine hours to go from Taunton to London. In going from Taunton to Bath, I suffered between 10 and 12,000 severe contusions, before stone breaking Macadam was born. I paid £15 in a single year for repairs of carriage springs on the pavement of London; and now I glide, without noise or fracture, on wooden pavements. I can walk, by the assistance of the police, from one end of London to the other, without molestation; or, if tired, get into a cheap cab, instead of those cottages on wheels, which the hackney coaches were at the beginning of my life.

I had no umbrella. They were little used and very dear. There were no water proof hats, and my hat was often being reduced by rain to its primitive pulp. I could not keep my small clothes in their proper places, for braces were unknown. If I had the gout, there was no colchicum. If I was bilious, there was no calomel. If I was attacked by the ague, there was quinine. There were filthy coffee houses instead of elegant clubs. Game could not be bought. Quarrels about uncommuted tithes were endless. The corruption of Parliament before reform, infamous. There were no banks to receive the savings of the poor. The poor laws were gradually sapping the vitals of the country. Whatever miseries I suffered, I had no post, for a single penny, to whisk my complaints to the remotest corner of the empire. And yet, in spite of all these privations, I lived on quietly, and am now ashamed that I was not discontented, and utterly surprised that all these changes and inventions did not occur two centuries ago. I forgot to add that as the basket of the stage coaches, in which baggage was then carried, had no springs, your clothes were rubbed to pieces, and that even

in the best society, one-third at least of the genteel, were always drunk.

Ohio.

Hyron and Sandusky.—We are happy to learn that these counties voted on Monday last, in favor of subscription to the Toledo, Norwalk and Cleveland railroad, the first \$60,000, and the latter \$50,000. The majority in each county was about five hundred. The road will at once be put under contract the whole length, and completed we hope before July 1st, 1852. We also learn that work is progressing rapidly between here and Fremont; the contractors will receive their first estimate tomorrow at Fremont.

The Cincinnati, Wilmington and Zanesville railroad company will be organized on the 15th of May by the election of officers. It has now about \$1,000,000 subscribed to the capital stock, and engineers for location will be put on at the first meeting of the Directors.

Illinois.

Aurora and Rock Island Railroad.—We learn from Stephen F. Gale, Esq., who has just returned from New York, that the Illinois Central railroad company have pledged themselves to meet the Aurora road with the Galena branch whenever the former may be extended to the proposed point of intersection. There is no question now but what this work will be pushed forward immediately. One gentleman of this city, of large ability, proffers to take one-tenth of the stock, and others have expressed a readiness to subscribe liberally. Books will very shortly be opened for this purpose, and all the requisite steps taken to secure its earliest possible commencement.—*Chicago Tribune.*

Raleigh and Gaston Railroad.

It appears that the efforts to raise the subscription of \$400,000, necessary to secure the charter granted for this road by the late Legislature, are likely to be unsuccessful. About \$50,000 have been subscribed in Raleigh, and \$8,000 in Petersburg, and along the line between Raleigh and Gaston almost nothing. It is announced also by the Petersburg Intelligencer, that unless a movement is made to resuscitate the road, operations on it will be discontinued at the end of a month. It was expected that Norfolk and Petersburg would each come forward and subscribe a hundred thousand dollars; but, through mutual jealousy or for some other reason, neither city seems disposed to bleed so liberally. Without their assistance to this extent, the prospect of resuscitating the road is hopeless.—*Greensboro' (N. C.) Republican.*

Indiana.

Peru and Indianapolis Railroad.—The 1st section, to Noblesville, opened on the 11th of March. Number of passengers carried on the day of the celebration of the opening of the first 22 miles from Indianapolis,.....2,813

Passengers from the 12 March to the 4th of April.....1,048
Total.....3,861
Total receipts in twenty days,.....\$1585 50

Ohio.

Akron and Hudson Railroad.—The engineers have commenced the survey of this road, and the work is to be pushed on rapidly. An instalment of \$5 per share on the stock is ordered to be paid before the 17th of May, and similar amounts each month thereafter.

Important Railroad Movement.

We learn from a certain source, that J. W. Brooks, Esq., the efficient superintendent of the Michigan Central railroad, has succeeded in making arrangements for the completion of the line of road from Michigan city to the Illinois line, and thence to Chicago. This has been accomplished without the aid of legislation, and in a manner to render it liable to no contingency nor uncertainty. We congratulate the people of Michigan, therefore, upon the prospect of a swift and speedy communication between Buffalo and Chicago, by the way of Detroit. The iron for the line of road between Michigan City and Chicago, is purchased,

work will be immediately begun upon it, and prosecuted without delay, until it is finished.—*Detroit Adv.*

Railroad in California.

The California Courier states that \$100,000 have already been subscribed towards the construction of a railroad between San Francisco and the beautiful valley of Santa Clara, and that a committee is about to visit San Francisco to invite further subscriptions. The whole amount of money wanted is \$250,000. The work seems to be feasible, and there is a reasonable prospect of its being carried through.

The San Jose Railroad.—It seems that the project of building a railroad between San Jose and San Francisco is entertained with a feeling of sincerity by its projectors. We go for all improvements and trust that the work may be accomplished. At a meeting on Saturday evening, the committee on the subscriptions made a very encouraging report, and it was resolved that the books should be opened immediately.—*Id.*

Connecticut.

New London Railroad.—The following named gentlemen were chosen directors by the stockholders of this road, on the 15th ult., at the annual meeting in New Haven:

Frederick R. Griffin, Joel Tuttle, of Guilford; Henry L. Chaplin, of Saybrook; Wm. P. Burrall, of Bridgeport; Henry Hotchkiss, of New Haven; E. E. Morgan, of New York; Ely A. Elliott, of Clinton; Charles C. Griswold, of Lyme, and Elias Perkins, of New London.

The board of directors met immediately after, and was organized by the choice of Frederick R. Griffin as president, and Ralph D. Smith as secretary and treasurer.

Shoe Manufactures at Lynn.

In the Directory of Lynn it is stated that the number of shoe factories in the city is 155, and the following is the number of persons employed by them and the amount of the annual product:

Cutters, commonly termed clickers.....	295
Workmen, termed cordwainers.....	3,779
Females, termed binders.....	6,412
Pairs of women's and children's shoes, boots and gaiters.....	4,571,400
Value.....	\$3,421,300

The value of the raw material used in the manufacture is estimated at \$1,627,716, and the capital invested in the business by the manufacturers at \$1,043,650.

Trial of the Humboldt.

The new steamship Humboldt, built to run between New York and Havre, in connection with the Franklin, made a trial trip down the bay yesterday. She accomplished the distance from the wharf at the Novelty Works to the Light Ship, outside Sandy Hook, in about three hours and thirty minutes. The wind was blowing strong from the southeast at the time, and there was a powerful current running in, so that no fair estimate of her speed can be formed from this trial.

The dimensions of the Humboldt are as follows: Length on deck, 290 feet; of keel, 283 ft.; breadth of beam, 40 feet; depth, 27 feet; registered tonnage 2200 tons. In place of the usual curved bow, hers is perfectly straight, and thus affords six feet additional breadth of deck room. The body of the vessel is of live oak, and by an adaptation of double floors, no butts or joints are visible below the engines and boilers. Her frames and timbers are secured by iron and copper bolts. She is rigged with three masts, and no bowsprit. The cylinders of her two side lever marine engines are 95 inches diameter, with pistons of 9 feet stroke; diameter of

wheels 35 feet; shaft 21 inches. She has four boilers, each 11 feet diameter by 27 feet 6 inches in length, and containing 32 furnaces.

The Humboldt positively sails for Southampton and Havre on the 6th inst.

Maine.

Kennebec and Portland Railroad.—A meeting of the stockholders of the Kennebec and Portland railroad company, was recently held in Gardiner, to take into consideration a proposal from the Somerset and Kennebec corporation, to lease their road, when built, for a term of twenty years at six per cent—provided it does not cost more than \$600,000.

Remarks were made in favor of the measure by Hon. Ruel Williams, Hon. James W. Bradbury, Friend Lang, Judge Weston, Hon. R. H. Gardiner and others.

The question was taken by shares—1407 yeas, 30 nays. A vote was also passed unanimously, instructing the directors to petition the legislature for such modification of the charter of the company as will be necessary to authorize this measure.

Pennsylvania.

Susquehanna Railroad Co.—The enterprise covered by the charter of the "Susquehanna Railroad Company," recently enacted by the Pennsylvania legislature, is undoubtedly one of leading importance to the numerous interests whose welfare is to be promoted by it. It contemplates the construction of a railroad commencing at and connecting with the northern end of the York and Cumberland railroad; thence running up the west bank of the Susquehanna river and crossing and connecting with the Pennsylvania railroad; thence continuing up the west bank to a point opposite Dauphin, where it will pass to the east side of the river by a suitable bridge; connecting at Dauphin with the railroad leading to the semi-bituminous coal fields; passing up the east bank of the Susquehanna river from Dauphin to Sunbury, and in its course intersecting and connecting with the Lykin's Valley railroad, the Mahonoy railroad, and the Shamokin railroad, each of which penetrates its corresponding anthracite coal region. This first great division of the enterprise, which we hope to see promptly undertaken and completed, holds out assurance of direct and great advantage to the city of Baltimore, to the Baltimore and Susquehanna railroad, to the York and Cumberland railroad, to the whole agricultural region above Harrisburg, and to the four coal companies which will thus have a direct and rapid communication with the Baltimore market. The route from the west end of the Harrisburg bridge to Sunbury, although comparatively a short one, possesses advantages of the highest importance. Within the first six miles of its progress northwardly it will consummate a direct connection with the Pennsylvania railroad on the west side of the Susquehanna river, and thus save time, expense and distance in the intercommunications of Baltimore and Pittsburgh.—Within the second six miles the road will pass to the east bank, and the coal trade of the Dauphin and Piqua company rendered directly available. So, in like manner, as the work advances up the river to Sunbury, will it command at each successive step new and important accessions of trade.

Erie Canal vs. the Mississippi River:

We find that most of the railroad companies in Ohio, Indiana and Illinois are ordering their iron by way of New York and the Erie canal, instead of the Mississippi river; and that the former is fast becoming the favorite route between the Western States and the ocean. The enormous charges at New Orleans bid fair to drive from that city a large part of the merchandise and freight which formerly took the Mississippi route. Take the article of railroad iron for instance. This, if landed at New Orleans, is subjected to a *drayage* charge of three dollars, (in addition to other charges,) a much larger sum than the whole cost of shipment

from New York to the former port. In the summer and autumn months, it is very difficult to get iron forwarded at all, in consequence of the general suspension of business, and the low stages of water.

By the Erie canal, merchandise can be forwarded from this city during the whole season of navigation to almost every part of the west at an expense but little, if any, exceeding that of forwarding by way of New Orleans, with the additional advantage of a much better climate, the certainty that it will reach its place of destination, within a given time, and by a route where it can be looked after for the whole distance by those interested.—By the Erie canal, heavy articles, such as iron, can be forwarded to any point on Lake Erie at a cost not much exceeding one-half of a dollar per ton. This will be much reduced in the enlargement of the canal. As soon as the enlarged boats of 224 tons shall commence running, we may expect to see the Erie route the grand outlet for the greater part of the Mississippi Valley. New York is the great point to which western produce is forwarded, and when the expenses by either route shall be equal, we may naturally expect that the northern route will take the business, as the route of convenience as well as of economy. Would it not be well for New Orleans to look at this matter, for the purpose of seeing how her business is endangered by the improvements now in operation by her enterprising northern rivals.

Continuous Line to Chicago.

We are happy to learn that arrangements have been made which will enable the Central railroad company to construct their line from Michigan city to Chicago. The work of construction will be immediately commenced. The iron has been contracted for, and ere another year passes the locomotives of the Central railroad company will whistle in the streets of Chicago.—*Detroit Free Press.*

Railroad Law.

U. S. Circuit Court.—Henry Baldruff vs. Camden and Amboy Railroad.

This was an action against the company, as carriers of passengers and their baggage, from New York to Philadelphia. The Jury in the Court below found a special verdict as follows: That the defendants are carriers of passengers and their baggage, and not carriers of merchandise from New York to Philadelphia—that the defendants had published in the public daily newspapers of New York and Philadelphia, from May to September, 1846, an advertisement, and delivered to the plaintiff, (now defendant) who is a German, and did not understand the English language as well as the other passengers, on the 22d of August, 1846, a card or ticket.

The plaintiff took passage in defendant's line, upon the said 22d August, 1846, and put on board the steamboat Independence, belonging to defendants, and forming part of defendants' means of conveyance, among other baggage, a trunk containing 2,101 silver coins, commonly called French five franc pieces, and also certain articles of wearing apparel. The said trunk was directed to the conductor, or other agent of defendants, on board of said boat. The extra weight of plaintiff's baggage, including the said trunk, was paid for, and the said agent did take charge thereof. The plaintiff did not notify the defendants, or their agent, that the trunk contained coins or money, and no special agreement was made by them to accept or carry the same. The said trunk was lost and not delivered to the plaintiff upon the arrival at Philadelphia, or at any time thereafter.

If the Court shall be of opinion that the defendants are responsible for the injury arising from the loss of the money or silver coins aforesaid, then the Jury find for the plaintiff, and assess the damages at twenty-two hundred and forty-five dollars and ninety-five cents (\$2,245 95.) If the Court

shall be of opinion that the defendants are not liable for the injury arising from the loss of the money or silver coin aforesaid, then the jury find for the plaintiff and assess the damages at ten dollars.

The District Court gave judgment that the plaintiff recover the larger amount.

Accidents on Massachusetts Railroads in 1850.

The annual reports of the railroad corporations for 1850, show the following fatal or serious accidents during the year:—Lowell, three killed, four injured; Maine, 3 killed, 3 injured; Providence, two killed; Worcester, three killed, eight injured; Cheshire, two killed, five injured; Eastern, three injured; Fitchburg, five killed, three injured; Nashua and Lowell, two killed, two injured; Old Colony, two killed, five injured; Providence and Worcester, four killed; Taunton Branch, one killed; Vermont and Massachusetts, two killed; Western, eleven killed, one injured. The total is forty-three killed, and thirty-four severely injured. Of the killed, two were engineers, [one by the explosion of a boiler,] two merchandise conductors, one road agent, eleven brakemen, [mostly by striking bridges,] and two baggage masters; eleven were killed while on or crossing the track; five in consequence of being intoxicated; two passengers were killed by accidentally falling from the platform of the cars. Only three passengers were killed while actually occupying their proper places in the cars, and this was in consequence of the breaking of an axle of a car on the Western road at Hinsdale.

The Tehuantepec Road.

This enterprise, which constitutes an important link in the great line of which the Jackson road is to be the great south-western trunk, is, we learn, in quite a successful and promising condition.—The reports of its failure are idle fictions of the enemies of this great national work. The survey is proceeding rapidly, and without interruption. The hydrographical party having concluded their duties, will return shortly. A schooner with supplies, and a reinforcement of the surveying party, under Mr. Sidel, left the city a few days ago to proceed to the Coatzacoalcas. The work goes on bravely, and it is by no means certain that the grant to Garay has been annulled by the Mexican Congress.—*N. O. Delta.*

Line of Steamers from New York to Richmond, Va.

Stock has been subscribed in Richmond, Norfolk and New York, and a contract made with R. F. Loper, of Philadelphia, for building a steam propeller to run between New York and Richmond via Norfolk and City Point, to be on the line some time early in July next. The dimensions of this vessel are to be as follows:—150 feet long, 25 feet beam, 9½ feet lower hold, 7 feet between double engine, with 26 inch cylinders. Capacity approaching 500 tons. Three-eighths of the stock is taken in Richmond, and about one-quarter in Norfolk, and the balance in New York. Rankin & Whitlock are the agents in Richmond. This vessel is, we understand, only the pioneer of a line of three, to run regularly between Richmond and New York. Subscriptions for building the second vessel have already been partially made; and will be completed in a few days. The vessels not yet contracted for are to be of larger dimension than the one now building.

Kentucky.

Covington and Lexington Railroad.—There is a rumor afloat that the contractors on the Covington and Lexington railroad have discontinued work, and that there is nothing doing, etc. Justice to the company demands a statement of the facts. Unfortunately the company contracted several miles of the road to an individual who sublet a large portion of it; and the difficulty is with him and his contractors. We are authorized to say, that every contractor from the company is pushing the work rapidly. There has been no difficulty with them. We may add, the company has punctually,

at each estimate, paid all that was due to contractors, and that it is fully able to meet all its engagements. The difficulty between the sub-contractors will soon be arranged and the work on that part of the line go on.—*Covington Journal.*

Illinois.

Central Military Tract Railroad.—This road is to connect with the Northern Cross railroad at some point between Quincy, on the Mississippi, and Meredosia, on the Illinois river, and running northward through the heart of the Military district, the finest portion of Illinois, will pass through the towns of Macomb, Galesburg, Henderson, etc., to some point on the Rock Island and Chicago road. A sufficient amount of stock having been subscribed and paid in, a meeting of the stockholders was held at Henderson on the 12th ult. for the purpose of organising. The following gentlemen were elected directors:—Wm. A. Wood, Silas Willard, James Bunce, G. C. Lanphere, L. E. Conger, W. H. McMurtry, E. T. Elliott, I. M. Wetmore, Ezra Chapman, Alfred Brown.

Gov. McMurtry was elected President of the board, G. C. Lanphere Secretary, and William A. Wood Treasurer.

Missouri.

Plank Road to the Iron Mountain.—We understand, says the St. Louis Republican, that a reconnaissance of the country between Ste. Genevieve and the Iron Mountain, has just been completed, and that a favorable report is made of the practicability and value of the proposed plank road. The capital stock of the company has been subscribed, and the work placed under the general direction, as consulting engineer, of Mr. Kirkwood, the Chief Engineer of the Pacific railroad company. Under his directions this reconnaissance has been, and the parties for survey are about commencing their labors. The work is to be put under contract with the least possible delay, say between the 15th June and the 1st July, and urged to immediate completion.

The projectors contemplate branches to the Pilot Knob, and to the lead mines near Frederickton, and a continuation to the Potosi mines, thus opening to constant market an immense mineral wealth. The main trunk of this road to the Iron Mountain will be about forty-five miles in length, and passes through fine farming land, and where there is an abundance of timber, both oak and pine. Farmington is one of the first points.

The above is but one of the several plank roads which are about being commenced.

New York.

Canandaigua and Niagara Falls Railroad.—The engineer in charge of this road has completed a survey of the whole line, from which we gather the following particulars:

The line, as surveyed, passes through Batavia, and is the most direct line to the Niagara river which can be run, making the entire distance 92 miles, 2 of which may probably be saved in locating the line near Akron, Erie county. The grades nowhere exceed 40 feet per mile, and more than one-half of the entire distance is either level, or the grades of a very light order. With a single exception there will be no curve of a less radius than 5,700 feet, and the per centage of straight line is greater than that of any railroad in the State, some of the tangents running as high as 28 miles. Mr. Smith estimates that there is on the route at least 80 miles of straight line.

The report concludes with the following:

"From the above statements you will be fully capable of appreciating the feasibility and utility of the project, knowing, as you do, that the greater part of the line runs through a country unequalled in fertility by any in this State or in the Union, and making, as it will, the connecting link on the shortest and most direct line from the far west to the City of New York, it must prove a very profitable investment, and I trust you will see fit to use every exertion for its early completion."

Rhode Island.

Plainfield Railroad.—We learn from the Providence Journal, that the efforts which have been making in that city to aid in building the Plainfield railroad have been successful—\$400,000 having been unconditionally subscribed. A meeting of the stockholders will soon be called for the purpose of organisation.

New Hampshire.

Cocheco Railroad.—A correspondent of the Portsmouth Journal who lately passed over the route of the Cocheco railroad, between Farmington and Alton Bay, states that sleepers were being distributed along the line, ready to be laid down, the steamboat which is building to connect the road with Wiers is in a forward state, and every thing indicates the vigorous prosecution of the work. Early in September the road will be completed to the Bay. The villages along the route gives evidence of great thrift. The freight business from these places is now considerable, and there is a prospect of its increase.

New York.

Rochester and Syracuse Railroad Direct.—There was a meeting of the directors of this road on the 2d inst., at which the line was located through from Rochester to Syracuse. It will leave the present Rochester and Syracuse railroad at Brighton, will pass within one-half a mile of Palmyra, Newark, Port Byron, and Jordan, and within one quarter of a mile of Lyons. Allen's Creek, the most considerable impediments on the route, will be crossed on embankment and bridge at the height of seventy feet at the lowest point. The bridge portion, with the embankment, is about half a mile long, the construction of which will be the principal extra outlay on the line. The lettings will soon be made, and the road put in the way of construction.

Alabama.

Alabama and Tennessee Railroad.—The Gadsden Herald, speaking of the lettings which have recently been made to the planters along the line of the above road, says:—

We are pleased to announce that at the letting of the Alabama and Tennessee river railroad, which took place in our town, on the 19th, 21st, 22d, and 23d of this month, proposals were received from a large number of the stockholders in this and the adjoining counties for the grading of the railroad between Gadsden and Davis's Gap. This shows the right spirit. We are satisfied from the character and ability of the stockholders, who have proposed, that the work will be executed within the time given, which is two years from the date of proposal. A large amount of the work proposed for, is to be paid for in stock of the company. This is an admirable arrangement, and will tend greatly to relieve the difficulties of raising the means of construction. We are informed that if the stockholders will comply with their proposals of which, as we said before, we have no doubt the railroad will be completed through our section in three years.

Our citizens have done well, and we hope they will not "grow weary in well doing" but will

stand up to the work and push it through. Let not the great enterprise be forgotten, or lost sight of by selfish interest, but let each and every one put his shoulder to the wheel and his hand in his pocket, and the time is near when we shall hear the "snort of the iron horse," in the mountains of Alabama.

AMERICAN RAILROAD JOURNAL.

Saturday, May 10, 1851.

Notice to Contractors.

Pennsylvania Railroad.

PROPOSALS will be received from the 9th to the 24th of June next, at Johnstown and Summit, for the Grading and Masonry of that part of the Mountain Division of the Pennsylvania Railroad between Altona, in Blair county, and Pringle's Point, a few miles below Jefferson, in Cambria—a distance of 25 miles.

The road within this distance will cross the Allegheny mountains, encountering some of the heaviest grading offered in this country. In addition to a number of extensive cuttings, embankments and culverts, there will be one tunnel 1200 yards in length at the summit of the mountain, and another of 200 yards through Pringle's Point.

Terms cash, monthly. For further information apply to EDWARD MILLER, Esq., Associate Engineer, Blairsville, Indiana Co., or to STRICKLAND KNEASS, P. A. Engineer, Altona, Blair county.

J. EDGAR THOMSON,
Chief Engineer.

Engineer Department P. R. R. Co.,
Philadelphia, May 1st, 1851.

To Railroad Companies, etc.



The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

I also invite attention to an improved PATENT SPRING LOCK, for SLIDING Doors to Freight and Baggage Cars, now in use upon the Pennsylvania Central, Greenville and Columbia, S.C., Reading, Pa., and other Railroads.

Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to C. LIEBRICH,

46 South 8th St. Philadelphia.

May 9, 1851.

New York and Erie Railroad.

The formal opening of this great work is to be celebrated the coming week in a manner worthy the event. The President and his cabinet, with many other distinguished persons, have been invited to take part in the ceremonies, and are to accompany the excursion from this city to Lake Erie. The train for this purpose will leave the foot of Duane street on Wednesday morning, May 14th, at six o'clock, and return on Saturday. We hope in our next paper to give a suitable account of this great event.

Covington and Lexington Railroad.

We invite attention to the exhibit of this company in another column. It is a leading project in Kentucky, and its main object is to open an outlet to the Ohio river, opposite Cincinnati, for the rich and central portions of that State. Thirty-five miles of that road are already under contract, and forty more were advertised to be let on the 5th instant.

To aid in the above work, the company are now offering for sale the bonds of the city of Covington for the amount of \$100,000. That city now contains nearly 10,000 inhabitants, and is well known

to be one of the most thriving towns in the west. The safety of these securities is undoubted, and as the credit of Kentucky, and of her cities, has always been without a flaw, we can commend nothing better to the attention of capitalists.

Population of Illinois.

The following is the population by Congressional districts.

	1850.	1840.
First District.....	101,108	89,102
Second ".....	84,084	62,008
Third ".....	101,009	88,814
Fourth " (Chicago).....	191,018	71,230
Fifth " (Peoria).....	140,392	82,787
Sixth " (Galena).....	185,999	59,488
Seventh ".....	98,537	61,420

Total population.....849,992 473,375

Stock and Money Market.

Since our last, the prices of stocks have not materially changed. There is a gradual appreciation of such as are well known to offer a safe investment. The fluctuations in many of our leading stocks, are due to the supposed influence of rival projects, and we must expect this to continue till a sufficient time shall have elapsed, to show the absolute strength of each line.

The monthly returns of railroads show a very marked increase in their receipts. We believe that this increase is uniform throughout the country. While the income of our roads are much greater than formerly, stocks remain very near the old mark. This is a very favorable feature of the times. It indicates a very healthy state of feeling in the money market. So long as we can keep from exceeding a reasonable limit in prices, we shall escape the danger of falling below it.

Money continues abundant, with but little doing in new securities. Negotiations for new works are what chiefly concern our readers, and we are obliged to state that the market in these is inactive. The prospect, however, is not unfavorable. New York, for the two past years, has contributed a vast sum for roads, south and west, and capitalists are now disposed to wait awhile for the purpose of seeing how these investments will turn out.—Should they prove fortunate, and should our roads continue to be well managed, the favorable impression which now exists will be confirmed, and a new impulse given to works of internal improvement. As it is, large amounts of bonds are constantly being negotiated, though many of them at a pretty large discount. This, though a cause of some complaint, operates as a very wholesome check upon extravagance, and upon the prosecution of unwarranted schemes. Could every company obtain what money it wanted at par, it would be the greatest misfortune, both to our railroads and to the community, that could happen. As it is, very few companies not deserving of credit can get money at all. Those that can, are taught the economical expenditure by what it costs to get it.

We can hardly give quotations of sales of bonds, as these vary to a great extent, and sales are often mixed up with other transactions. Eighty-five cents net may be considered a fair price for good railroad bonds.

The rail market by the last steamer was dull, with a prospect of a decline. Quotations were from £5 to £ 7-6.

The Harlem road continues to gain largely.

The receipts in April were.....\$49,610 8
April, 1850.....39,375 7

Increase, 26 per cent.....\$10,235 05

The April traffic of the New York and New Haven railroad shows a large increase. The receipts are:

From passengers.....\$46,496 51
From freight, etc.....8,500,000

\$54,996 51

Paid Harlem road.....3,751 36

Net receipts.....\$51,245 15

April, 1850.....33,009 69

Increase about 60 per cent.....\$18,235 46

The receipts of the Ogdensburg railroad for the month of April, have been as follows:

Freights.....\$19,643 51
Passengers.....7,018 46
Mail.....425 00

Total.....\$27,096 97

The receipts of the Madison and Indianapolis road continue to show a very large increase of traffic. The freight business of the last week was interrupted two or three days by the failure of a bridge. The earnings for the first seventeen weeks are as follows:

	1850.	1851.
January.....	\$18,289	\$30,700
February.....	12,688	24,550
March.....	20,625	29,800
April.....	18,234	25,000

Total.....\$69,833

Increase, \$40,000.

SALES OF STOCK IN NEW YORK.

	April 30. Sales.	May 6. Sales.
U. S '67 Loan.....	117½	117½
Erie R.R.....	88½	89½
Harlem R.R.....	73½	73½
Stonington.....	43½	44
L.I. R.R.....	23½	21½
Norwich & Wor....	65	63
Del. & Hudson.....	129½	128
Reading.....	57½	55½
Morris Canal.....	16½	16½
Erie income.....	96	97½
" " Bonds.....	102½	102½
Canton.....	70	71½
Farmers Loan.....	65	66

SALES OF STOCKS IN BOSTON.

	April 29.	May 7.
Old Colony Railroad.....	66½	168½
Boston and Maine R.R.....	104½	104½
Eastern Railroad.....	102½	101½
Fitchburg Railroad.....	111½	112½
Michigan Central Railroad....	98	99½
Northern Railroad.....	69	70½
Vermont Central Railroad.....	35	36
Vermont and Mass. R.R.....	32	31½
Western Railroad.....	102½	103½
Ogdensburg Railroad.....	40½	40
Rutland Railroad.....	57	58½
Boston and Worcester Railroad.	103½	104
Rutland Railroad Bonds....	97	98½
Ogdensburg Railroad Bonds....	97½	97½
Vermont Central R.R. Bonds....	91½	91½
Boston and Providence R.R.....	85½	87½
Philadelphia, Wilm'gton & Balt.	29½	29½
Concord R.R.....	56	56
Manchester and Lawrence.....	90	90

Pennsylvania.

Railroad through Erie County.—The Legislature of Pennsylvania, at its last session, failed to take any action in relation to the road now in progress from Erie to the Ohio State line, by the Franklin Canal company. We presume that this work will be completed before the next session of the legislature of that State, and be beyond the power of legislative interference.

The above work has been going on under a charter granted to the Franklin Canal Co. in 1844, and the supplement thereto, passed in 1849, gave them the privilege of constructing a railroad on the

banks of the old Franklin canal, and of *extending* said road from the northern end of said canal to Erie, by such route as they may deem *expedient and advantageous*. The friends of the above project decided that it was "expedient," under the authority given, to make a railroad from Erie to the Ohio State line, while the opponents of the line endeavored to restrain the company by a legislative enactment. Having failed in this, and left the *bars* down, the animal will probably be out of harm's way before any danger can happen again.

From Dunkirk to Cleveland, the whole line is now under most rapid progress; and but a short time will elapse before the traveller will get into the cars at Jersey City, and get out at Cincinnati.

Ohio.

Cleveland and Pittsburgh Railroad.—This road, which is now open to Ravenna, 38 miles, is doing a remarkably fine business, carrying nearly 1,500 passengers per week, and this, before the opening of canal or lake navigation, besides a large amount of freight. The receipts from both of the above sources far exceed the estimate of the most sanguine friends of the road. The business, too, has been much crippled for the want of sufficient machinery to do all that offers. Two additional locomotives are to be placed immediately upon the road, and others are to follow very shortly.

The work south of Ravenna is progressing with all possible speed. Large forces are at work along the whole length of the line, and more are being added every day. In a few days an extensive gang will commence putting down the rail south from the above point. The iron has all arrived necessary to complete the road to the Ohio river, a distance of 98 miles from Cleveland.

As is well known, this road traverses one of the finest portions of Ohio. In the importance of its connections, it cannot be excelled by any line in Ohio. It unites Lake Erie and the Ohio river, at their points of nearest approach, and by a line of less than 100 miles. The importance of such a connection will be readily understood by persons unacquainted with the particular geography of that region. The affairs of the company, under the direction of its president, Cyrus Prentiss, Esq., have been conducted with signal ability; and this has contributed not a little to the ease and expedition with which this work has progressed. We regard the above as one of the most promising and best managed projects in Ohio; one that is sure to pay well as a private enterprise, as well as to confer great public benefit.

European and North American Railroad.

We have before us a copy of the recent correspondence between the British Government and the Provincial Government of Nova Scotia, in reference to the Quebec and Halifax and the European and North American railroads.

On the 27th of March, 1850, the Legislative Council of Nova Scotia, in an address to Sir John Harvey, the Lieutenant Governor of that Province, requested him to call the attention of the British Government to the project of the Quebec and Halifax railroad, for the purpose of securing to this work the aid and encouragement of that power.—In pursuance thereto, Sir John Harvey addressed a dispatch to the Home Government, dated May 2, 1850, urging upon its attention the proposed work. To this Lord Grey answered by a dispatch dated June 19, 1850, declining to recommend the project to the consideration of Parliament. On the 31st of July, 1850, the Portland Convention

was held, the design of which was to promote the construction of the European and North American railroad; and as a complete revolution had taken place in the public mind of the Provinces, in relation to the former project, which was now virtually abandoned, Sir John Harvey again addressed the Home Government, soliciting its guarantee of the Provincial debentures for the latter work. To this, a similar reply was returned; but nothing daunted by these repeated rebuffs, the Government of Nova Scotia, on the 25th of October last, dispatched Hon. John Howe, a member of the council, to England, for the purpose of presenting this matter to the British Government in person. On the 18th of November, Mr. Howe had an interview with Lord Grey, and was desired by him to prepare a statement of the reasons upon which the Province based its petition for aid. In compliance with this order, Mr. Howe, on the 25th of November, submitted to the Colonial Secretary an elaborate memorial, stating the object of his mission.—This memorial, after reciting the efforts that had been in vain made to enlist the Home Government in aid of the Halifax and Quebec railroad, and which had been abandoned in consequence, goes on to say that a new project had been presented to the attention of the people of Nova Scotia, to wit: the European and North American railroad—that this project offered great advantages over the proposed road to Quebec—that it would pass through a highly cultivated country—would cost only one-half the estimated cost of the Quebec railroad—that it would in effect be a prolongation of the railroads of the United States to Halifax, and would become a part of the great route of travel between the two continents. The memorial also states that American capitalists offer upon Provincial guarantees, to complete the whole of the road through the Provinces, but that Nova Scotia is unwilling to permit this to be done, for fear that this great "highway of nations," which should be kept entirely under British control, should fall into foreign hands. Influenced by these considerations, the Colonial Government sought aid from the mother country, in the guarantee of the bonds of the former, by which the latter would be enabled to obtain money at 3½ per cent., and effect a saving in interest of £20,000 annually, on £800,000, the estimated cost of the Nova Scotia portion of the road. Such was the object of Mr. Howe's mission, the result of which we gave in our last issue. Mr. Howe went out to England as the agent of the European and North American railroad, and returned with a proffered aid to the Quebec, the direct rival and antagonist of the former. He seems hardly conscious that any substitution has been made, and returns his most humble thanks for a favor, which he never thought of asking for, and which, if accepted, would certainly prove fatal to the object of his mission. A more successful piece of humbuggery than that practised upon this agent we have never witnessed. If he has not been most effectually sold, we do not know who has. The Colonial Secretary, without taking hardly the slightest notice of the real object of Mr. Howe's mission, gravely informs him that he will recommend to the consideration of Parliament the subject of guaranteeing a loan sufficient to build the Halifax and Quebec railroad, upon condition that the road pass entirely through British territory and through portions of the three Provinces of Nova Scotia, New Brunswick and Canada; and that these Provinces unite in pledging all their revenues for the purpose of paying the interest on such loan, and of provid-

ing a suitable sinking fund. This road would be about 650 miles long, and would cost something over \$20,000,000. To these propositions, New Brunswick has openly rebelled, which defeats the whole project. Canada, we have no doubt, would be as unanimous against it; and we believe the proposition would be just as unpopular in Nova Scotia.

We look at this correspondence through our own medium, and very likely with prejudiced eyes; but we confess it does not impress us with any exalted notions of any of the actors that are parties to it. In the first place, Lord Grey is either playing a part, or he is grossly ignorant in reference to the subject upon which he is writing. We accept the former hypothesis, for he says he does not think the construction of the Halifax and Quebec railroad justifiable as a commercial speculation. He is probably fully aware that it is utterly impracticable, and agreed to aid the Quebec railroad merely as a *ruse*, to get rid of the importunity of Mr. Howe—well knowing that it would end in nothing. If this was his object, he has succeeded most admirably.

The memorial of Mr. Howe, though well written, and part of it containing some interesting information and statistics, sounds somewhat queerly in this latitude. He seems to be an excellent, though timid, gentleman, haunted by an idea of being, at some time or other, eaten up by the Yankees. He states, in the commencement of his memorial, that these omnipresent geniuses had offered to build the whole line, and take what the Provinces had to offer in payment. But Mr. Howe only sees in this another *Trojan horse*, threatening destruction under the fairest guise. Let these men but once get within their walls, and all is lost. He regards the fascination of the Yankees, as he does that of serpents—horrible, yet irresistible—by all means to be avoided, but fatal if one comes within the sphere of its attraction. He depicts, in the most feeling language, the unfortunate condition of the Provinces, shut out alike from the markets of the old world and the new; poor, with the most abundant resources; deprived of all the objects for the exercise of a lofty ambition, mere citizens of a principality, with a tether limited to the narrow and humble range of colonial office, and contrasts their depressed condition with that of the citizens of the great fierce "Democracies" on the one hand, and those of Great Britain on the other, within whose reach are placed the highest prizes that reward human ambition. He pleads most eloquently the past loyalty of Nova Scotia, which, like a dutiful child, has received no rewards for good conduct, because in no danger of going astray; while Canada, like the prodigal son, had received the rattled calf, though she had spent millions of the paternal estate in her riotous proceedings. He says that the loyalty of Nova Scotia has been without a flaw; but intimates, that he will not promise that she may not be led to do something dreadful, unless properly restrained. That she cannot get on much longer in the old way—that something must be done, or all this loyalty may soon turn up missing. He tries in one part of his argument to convince Lord Grey that John Bull and Brother Jonathan never will set their horses together. Hear him.

"A few years ago I spent the 4th of July at Albany. The ceremonies of the day were imposing. In one of the largest public halls in the city, an immense body of persons were assembled. English, Irish and Scotch faces were neither few nor far between. In the presence of that breathless au-

dience, the old bill of indictment against England, the Declaration of Independence, was read, and at every clause each young American knit his brows, and every Briton hung his head with shame. Then followed the oration of the day, in which every nation, eminent for arts, or arms, or civilization, received its meed of praise, but England. She was held up as the universal oppressor and scourge of the whole earth—whose passage down the stream of time was marked by blood and usurpation—whose certain wreck, amidst the troubled waves, was but the inevitable retribution attendant on a course so ruthless. As the orator closed, the young Americans knit their brows again; and the recent emigrants, I fear, carried away by the spirit of the scene, cast aside their allegiance to the land of their fathers."

This did the mischief, we are certain. This knitting the brows! What English nobleman and English lady would consent to ride on a railroad in this country, with a parcel of Yankees on each side knitting their brows? Intolerable! Unlucky "4th of July" that, which so affected Mr. Howe, and which forced the European and North American railroad to steal on its way to the St. Lawrence, through the intricate, uninhabited wilds of New Brunswick and Canada, to avoid these fierce looking Yankees.

On the whole, when we divest this correspondence from the importance which great names attach to it, it inspires us with but little respect for its actors. It is impossible to avoid this feeling. It is hard for us in the United States to appreciate the motives and feelings which actuate the government officials of some of the British Provinces, or some of the loyal subjects on this side of the water. They remind the reader of some antiquated *aunt*, living in the precise observance of the ideas and customs of half a century ago, and shocked at everything that does not square with her standard of traditional propriety. We should like, to see the experiment tried, of having some Englishmen offer to build some of our leading roads. We guess they would not wait long for a favorable answer. We should be very willing to take the future on trust, and run our risk of teaching these Englishmen how to behave. Every foreigner is equally acceptable in this country, even should he be, in his religion, a Musselman, and in politics, a worshipper of the Czar. With us, the greater number of what other people call heresies, the greater our quiet and safety. Where perfect liberty exists for all, no two will think alike upon any subject; of course no two can unite upon any points, upon which they will agree to oppress the third. Has he money? is the only question we ask of the foreigner. His politics and religion concern himself; his money, the whole community.

Mr. Howe seems to think that the Provinces can continue to hug their old ideas still closer, and become rich, thriving and great; forgetting it is those very principles, which he values so highly, that has brought them into their present condition. Every effect must have its cause, and we do not see why a greater infusion of the *past*, will not produce a greater intensity of the *present*. What the Provinces want is self-reliance, and a habit of taking care of themselves—in other words, an adaptation to the circumstances in which they are placed; and this can never grow out of a loyalty to past absurdities and traditions, but must spring from a proper estimate of present emergencies. They should invite to their aid every person that can offer a new idea, or a cent of money, no matter whether the idea is propounded by a cobbler, or a blacksmith. The Yankee puts himself to school of all creation. Asking questions is his great employment. The

Provinces are fast beginning to set up for themselves, and they should not reject some good advice, if homely. Many of them resemble a great family of boys, who have grown up supported by the paternal income, when all at once they are suddenly turned off upon the world to shift for themselves. Some members of this great family, we confess, present unmistakable evidence of having a pretty hard time of it. However, experience will in the end work out a cure. Reform will commence as soon as they are thrown entirely upon their own resources.

The city of Portland, Me., with about 20,000 people, single handed, provided the means for building 150 miles of the Atlantic and St. Lawrence railroad, which is to cost \$4,500,000. The whole Province of Nova Scotia, with 250,000 inhabitants, is committed to the proposed road through her territory, which is estimated to cost but \$4,000,000. We should be sorry to believe that they cannot accomplish what less than one-tenth of their number can readily do in the States. Mr. Howe's mission will, we think, convince them that it is useless to expect any valuable aid from the home government, and that the sooner they cease to rely upon any strength but their own, the better.

Pennsylvania.

Williamsport and Elmira Railroad—At an election held in this city, on Monday evening last, the following officers of this company were unanimously chosen for the ensuing year:

Hon. Eli Lewis, Lancaster, President.

Archibald Robertson, Philadelphia, Secretary; R. N. Arms, Treasurer; Theophilus E. Sickles, New York, Principal Engineer of Construction; Robert Faries, Williamsport, Consulting Engineer and General Superintendent.

This company, we understand, is entirely free from debt. New stock has been subscribed to the amount of \$980,000. This, with a loan the company propose obtaining on 7 per cent bonds, will be amply sufficient to complete the entire road from Ralston to its intersection with the New York and Erie road, near Elmira, N. Y., and to relay with a T rail that part of the road which has been in operation for a number of years from Williamsport to Ralston.

Mr. Joseph Gonder, Jr., has taken the contract for the completion of the road within two years from the 5th of June next. We understand that the contractor and engineers will proceed to make the necessary preparations on the route in a few days. We know Mr. Gonder well, and he is well known throughout the Union as one of the most successful and energetic railroad contractors in the Union.

The contract requires the road to be constructed to correspond in width with the wide track of the New York and Erie railroad. The effect of this will be to increase the facility of passing on and from the N. York and Erie road. When it is considered that the lake trade, for the year 1848, amounted to the enormous value of \$186,484,905, being forty millions of dollars more than the whole foreign export trade of the United States—that this trade is constantly increasing—that a very large portion of it will proceed to the seaboard by way of the New York and Erie railroad—that on arriving at Elmira, both Philadelphia and Baltimore may be reached by the Williamsport and Elmira railroad, at a shorter distance, and by better grades than to New York city—it is manifest that the Williamsport and Elmira railroad must be regard-

ed as one of the most important and profitable railroads in the United States. The new railroad from Buffalo to Attica, and from thence to Hornellsville, now chartered by the name of the Buffalo and New York City railroad, will be entirely finished by the first of January next. This will bring on to the New York and Erie railroad a large amount of trade and travel, which will proceed east as far as Elmira, and then a great portion of it must necessarily proceed south by the Williamsport and Elmira railroad, being the most direct route to the seaboard. The new charter granted by the last Legislature of Pennsylvania, providing for a railroad connection with the York and Cumberland railroad on the west side of the Susquehanna at Harrisburg, and with the Williamsport and Elmira road at Williamsport, completes the great northern and southern line of railroad from Washington and Baltimore through Williamsport and Elmira to the lakes.

So important has the Williamsport and Elmira railroad been considered to the interests of Pennsylvania, that the Legislature has granted to it a bonus of all the tolls on the Pennsylvania Canal from Williamsport to the junction at Duncan's Island, (80 miles,) on all freight and passengers descending, which may be brought on to the Williamsport and Elmira railroad. This important bonus is to commence upon the completion of a single track to the New York and Erie railroad near Elmira, and is to continue for the period of fifteen years after that time.

We are assured, upon the best authority, that there will not be the slightest difficulty in negotiating the loan proposed. The security is most ample. The bonds are to be convertible into stock at the election of the holder. These bonds, we have no doubt, will be sought after as one of the most secure and at the same time profitable investments ever offered to capitalists.

The rails for the entire route, we understand, were contracted for yesterday upon favorable terms—to be made of Pennsylvania iron, and delivered at Williamsport.

The iron is to be manufactured by the celebrated Montour Works, at Danville, and it is, beyond all question, one of the best and most responsible establishments in this country, or in England.—The quality of the iron is well known, and we are glad to know the company is doing well.—*Pennsylvanian of the 7th.*

Anthracite Beds of Rhode Island.

In the year 1808, even before the coal mines of Pennsylvania were wrought, public attention was directed to the beds of mineral coal found along the shores of Narragansett Bay—mining operations were undertaken, and attempts were made to introduce the new field into domestic use. Though there seemed to be no lack of the material, these attempts, successively repeated for many years, all proved failures. Large sums of money were expended at various localities by one company after another, influential and enterprising men were engaged in the operations, some who were heartily interested in developing this new resource for the sake of advancing the prosperity of their native State, as well as adding to their individual wealth. But it was all of no avail. Rhode Island coal would not be made to burn. It was pronounced incombustible, and its mines were regarded as the last places to be destroyed in the day of universal conflagration. Still a few of the enterprises continued to live along in a sickly way even to the

present time. To be connected with them insured to one a character for credulity; and if a man of science risked his reputation so far as to speak of them, it was to damn them with faint praise—or worse. Notwithstanding all this, we were, rather against our will, and with a kind of feeling as if we did not wish it to be known, induced to visit some of these mines last December, and subsequently to repeat and extend our observations.—Some of the results on these we will now give.

At Portsmouth, at the northern extremity of Rhode Island, is the only mine now wrought south of Providence; and this at present by a small force of only twenty miners. It is one of the old mines, which has passed through several hands, and has for the last year been in possession of the "Portsmouth Coal Company," the members of which are mostly of Worcester, Massachusetts. The locality is ten miles north of Newport. The Fall river steamboats pass within sight of the mine, and large vessels may come to the wharf, which is within one hundred rods of the shaft. Three coal beds are here found in black slates, which, with a greyish sandstone, called by Dr. Jackson "greywacke," are the rock formations of this island. They repose in the form of a basin on the granitic bed beneath, the strata on the east side dipping towards the west, and those on the west side towards the east. The granite appears on the main land on each side.—Several beds of coal have been found in these black slates: At the Portsmouth mine there are no less than three beds within a cross section of about 300 feet. They incline at an angle of from 30° to 35° towards the east. The middle one of the three beds has been sunk upon by an inclined shaft following the coal-seam to the depth of 300 feet; and within the last two years this shaft has been carried down 200 feet farther. Levels go off in the coal each way from the shaft 1000 feet, and at the bottom these already reach more than 500 feet in each direction. The thickness of the coal bed has therefore been fully proved over a considerable area. This is found to vary from three feet to sixteen feet; the walls undulating in their course, approach and then recede from each other within these limits. No sudden breaks are seen in the beds, no contortions, indicating the action of violent disturbing causes; but, on the contrary, the stratification is as regular as it is commonly found in the anthracite beds of Pennsylvania. The quantity of coal in an acre may be calculated with a close approximation to accuracy; and no one at all acquainted with the character of these deposits can pass through the workings without being impressed with the large amount of coal this bed alone must contain. In soundness of structure it is not very different from much of the Pennsylvania anthracites. The lumps come out of large size, but on being broken up, perhaps a larger proportion goes into fine coal. This, however, proves to be no serious objection, for the fine coal pays a good profit for the supply of the brick and lime kilns on the sea-board, and is in demand to an extent much greater than the fine coal produced at mines far in the interior. No slate is found in the midst of the coal bed; but in its place are occasional bands of white quartz, and this mineral in fine net-work sometimes is seen in the sound lumps of coal. It is for the most part easy of separation, contrasting strongly in color with the dark shade of the coal itself.

The lowest of the three coal beds has been opened by a cross cut towards the west from one

of the levels in the middle bed, and it too has been pretty extensively proved by long galleries. It is about the same thickness as the bed now wrought but the coal is not so highly esteemed. It appears to be very ferruginous, and the water in the levels leaves a deposit of the yellow oxide of iron.

This mine employs a steam engine rated at about forty horse power. The water is pumped up by it, and the coal is drawn up on a little railway in iron wagons. The works are in good condition, and the mine produces about 600 tons of coal per month. This is sorted, and a portion of it screened by hand. There is a deficiency of machinery for the preparation of the coal for market, which will probably be soon supplied, as the company extends its operations.

As to the abundance and convenience of getting this coal, and transporting it to market, there can be no question. Its limited use is to be ascribed altogether to the bad reputation it has acquired for its incombustible qualities. Whether this may be considered as fairly established, or whether it may not to some extent be owing either to an unreasonable prejudice, or to want of skill in the mode of using it, is a subject well worthy of investigation, when we regard the low rates at which the coal may be supplied to our northern markets.

These beds were opened and the coal was offered for sale before we had any acquaintance with the anthracites of Pennsylvania. The first attempts both at mining and burning the new fuel were failures. It early acquired a bad name. It was taken from near the outcrop, where coal is seldom of good quality, and no encouragement was given to seek for it at the depth where it would be most likely to be sound, and of the best quality. Every new mine resulted in a new failure.

The early operators, either through wilfulness or ignorance, neglected to sort the coal from the quartz. Both were sold together. A farmer now living in the vicinity of the mine, who had been employed to sell the coal, informed us "he had sold hundreds of tons of stones." More recently another company, avoiding this error, committed another equally fatal, of giving their agents positive instructions to hold the coal at the same price, within twelve and a half cents a ton, with that of the Pennsylvania coal. By this means it was effectually kept out of the market, and the operations of the company soon ceased.

The present operations, carried on at a proper depth below the surface, care being taken to separate the quartz from the coal, and an extensive sale being already obtained by the greater cheapness at which it was offered the last winter, the question promises now to be fairly settled as to the economy of mining and using the Rhode Island coal.

We have before us a report of Dr. A. A. Hayes, who has been investigating the properties of this fuel on a large scale, at the Roxbury Laboratory, near Boston. Appended to the report are certificates of several manufacturers, who are large consumers of it in Providence, Boston, etc. From these we gather that it kindles with difficulty, but that it requires less draft when ignited than the Pennsylvania anthracites; it burns slowly, giving out great heat, does not require stirring, and leaves a less weight of cinders than the Pennsylvania anthracite in general use in New England: At the less price at which it can be offered, it appears to give full satisfaction, and is preferred to the Pennsylvania anthracites; and on the whole is recom-

mended as a good and economical article of fuel. These are very decided expressions, and coming from parties who are now purchasing the coal in large quantities for their own consumption, they certainly give an importance to the subject which will warrant us in giving it further notice in a future number of the Journal. We will then quote more fully from the account of the experiments of Dr. Hayes.

J. T. H.

Notice to Contractors.

ENGINEER'S OFFICE,

Petersburgh, April 24th, 1851.

PROPOSALS will be received until the 20th of May next for laying 40 miles of the Track of the South Side railroad.

The Railroad Company will furnish all materials.

Plans and Specifications will be exhibited for several days previous to the citing.

Personal security to the amount of about 20 per cent. of the contract or contracts will be required, and each proposal must be accompanied with a letter from a responsible person, stating that he will become the security.

C. O. SANFORD,
3118 Chief Engineer.

To Railroad Companies. SALISBURY REFINED IRON.

THE Undersigned, having enlarged and perfected his Works, is now prepared to furnish Locomotive Tire of a better quality than have heretofore been used. Railroad Companies who may wish it, will be furnished with a set for trial, not to be paid for until they are satisfied of their superior quality over any other. Also made at short notice, and in the best manner, Locomotive Cranks, Engine and Car Axles, and other Locomotive Forgings.

All work ordered from me will be made of Salisbury Iron, and done in the best manner.

Address HORATIO ANES,
Falls Village, Conn.

May 1, 1851.

To Contractors.

ENGINEER'S OFFICE CENTRAL OHIO R. R.,
Zanesville, March 20, 1851.

SEALED PROPOSALS for the Masonry of a Railroad Bridge across the Muskingum River at Zanesville, will be received at this office until the 15th of May next.

Also for the Iron or Wooden Superstructure of said Bridge, and for draw bridge across the Canal.

Plans and specifications furnished on the 1st of May next. Bidders may furnish their own plans and specifications, if filed at this office prior to that day.

By order of the Board.

ROBERT MAC LEOD,
Chief Engineer.

Stickney & Beatty, DEALERS IN IRON AND IRON MANUFACTURERS.

AGENTS for the Baltimore City Rolling Mill, (Works of Messrs. Ellicott) also agents for the sale of the Laurel, Locust Grove and Gunpowder (Balt.) Forge Pig Irons; Hupp's Cold Blast Columbia Wheel Iron, Fort and anti-Eatam Pig Irons. Caledonia, Columbia and Capon Cold Blast Boiler Blooms, warranted; Wm. Jessop & Son's Steel; Old Colony and anti-Eatam Nails; Bar Iron, Boiler Plates, Hoop, Sheet, Oval, Half Oval, Horse Shoe and other Iron. Exchange Place, Baltimore.

Lovegrove's Patent Cast Iron Water and Gas Pipes.

THE Subscriber, the Inventor and Patentee of the Centrifugal mode of giving form to metallic substances while in a molten state, is preparing to make Cast Iron Water and Gas Pipes, of any dimensions, at prices much lower than they can be made in the old manner, and the pipes warranted to stand a pressure of three hundred pounds to the square inch, and to be soft enough to drill. Steam Engines and all kinds of machinery. Cast Iron Doors and Frames, and Mill Castings of every description, made to order.

THOMAS J. LOVEGROVE,

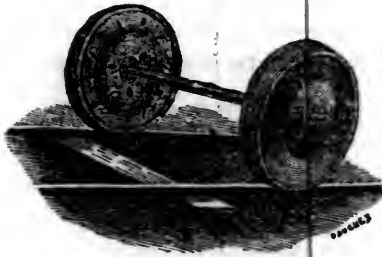
Machinist and Founder,

West Falls Avenue, below Pratt st., Baltimore.

Boston Locomotive Works, —Late Hinkley & Drury— No. 380 Harrison Avenue, BOSTON.

Locomotive and Stationary Steam Engines; Boilers; Iron, Brass, Copper and Composition Castings; Coppersmith's Work, and all kinds of Railroad Machinery furnished at short notice.

ALSO



Van Kuran's Improved Rail-Road Wheel,

Patented May 1, 1849. Manufactured under the personal superintendence of the Patentee, as above.

Orders for any quantity of wheels executed with dispatch, and wheels and axles fitted in the very best manner and at the lowest rates. Address

DANIEL F. CHILD, Treasurer, Boston.



Providence Tool Co.,

MANUFACTURERS OF

Plane Irons, Tooth Irons, Soft Moulding and Rabbit Irons, Cornice Irons, Plow Bits, and Planing Machine Knives.

NUTS, WASHERS AND BOLTS.

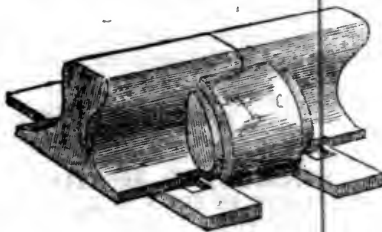
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PLATE HINGES AND PICK AXES.

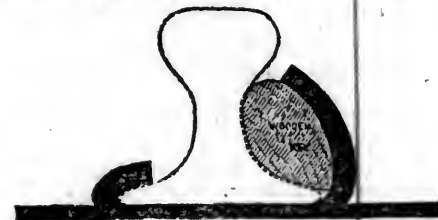
They are prepared to execute orders for all descriptions of Cold Punching and Job Work.

WM. FIELD, Agent. RUFUS WATERMAN, Treas.
PROVIDENCE, R. I.

Railroad Iron, SPIKES, AND WROUGHT IRON CHAIRS.



THE Undersigned, Agent for Manufacturers, is authorized to contract for Welsh Railroad Iron of the best quality, and deliverable at any port on favorable terms, also Spikes and Wrought Iron Chairs, made from the best iron, and of any pattern and weight. The new Wrought Iron Chair, with the introduction of a "Key," as per the annexed plan, will be found a great improvement on the old pattern.



Boiler Plates of superior quality, perfect regularity in the squaring and thickness, and made with great care.

Samples can be seen at: office, No. 20 Beaver st.
CHARLES ILLIUS.

LOWMOOR AND U. S. BEST FINCH IRON. To Iron Merchants.

JOHN FINCH & SONS, Iron Merchants, Liverpool, now are, and for more than twenty years past have been, sole Agents for the LOWMOOR IRON COMPANY, for the United States and Canada, for the sale of their well known Railway Tire Bars, and Axles, Piston Rods, Boiler Plates, Angle, Rivet, and all other kinds of Lowmoor Iron: also, sole Agents for the sale of the superior St. Iddshire Iron stamped "FINCH CROWN" and "U. S. BEST FINCH," and Merchants and Wholesale Dealers in all other kinds of British Iron.

We hereby inform our friends and the public that we have this day appointed Mr. WM. BAILEY LANG, of Boston, as our only representative to receive orders and to transact our general business in the United States.

For JOHN FINCH & SONS,
JOHN FINCH Sen.

Boston, April 11, 1851.

LOWMOOR and other Bent, Welded and Blocked RAILWAY TIRES, ready for use, E. FINCH'S Patent Dovetailed and other kinds of WROUGHT IRON RAILWAY WHEELS, with, or without the finished Axles, for Locomotives and for Passenger and Merchandise Cars, also Wrought Iron Railway Chairs, Railway Spikes, etc.

To the Managers of Railways, Engineers and others: Gentlemen:—We, FINCH & WILLEY, Engineers, Liverpool, Manufacturers of the above articles, respectfully inform you that we have this day appointed Mr. WM. BAILEY LANG, of Boston, as our sole Agent for the sale of said articles, and the transaction of our business in the United States of America, and for whom we solicit your kind attention and patronage.

For FINCH & WILLEY,
JOHN FINCH, Sen.

Boston, April 11, 1851.

Having accepted the above Agencies, I beg leave to solicit your orders, which shall at all times receive my prompt and careful attention. Please address all communications either to MESSRS. JOHN FINCH & SONS or MESSRS. FINCH & WILLEY, Liverpool; or to me, at my Steel Warehouse, No. 9 Liberty Square, Boston. Yours very respectfully,

WM. BAILEY LANG.

Boston, April 11, 1851.

The following are testimonials of the quality of FINCH & WILLEY'S WROUGHT IRON RAILWAY WHEELS from the Yorkshire and Lancashire Railway Co., one of the largest in Great Britain, and from the London and North Western Railway Co., the largest Railway Company in the world.

LONDON AND NORTH WESTERN RAILWAY,
(Northern Division.)

WAGON DEPARTMENT, ORDSALL LANE,
Manchester, January 4, 1851.

Gentlemen:—I have very great pleasure in bearing my testimony to the excellent quality of your Wrought Iron Railway Wheels.

This Company have many of them now in use on their lines, and during my experience, as their Superintendent, which is now upwards of 9 years standing, I have not known any of them to fail during that time.

I am, Gentlemen, yours, truly,

OWEN OWENS.

MESSRS. FINCH & WILLEY,
Windsor Foundry.

LANCASHIRE AND YORKSHIRE RAILWAY,
Wagon Department, Jan. 3, 1851.

Messrs. Finch & Willey,

Gentlemen: In reply to your request writing me to give my opinion of the 700 sets of Wrought Iron Wheels you furnished this company during the years 1847 and 1848, I have much pleasure in stating that we have not had a single instance of your Wheels failing in any respect, and I consider them equal if not superior to any Wheels we have on this line of railway. The Tires being LOWMOOR Iron, 1½ inch thick, I have no doubt they will run under ordinary goods' wagons 12 years without any repairs more than the tires turning up.

I am Gentlemen,
Yours, truly, WM. EMMETT.

NOTE.—4 Wheels and 2 Axles are one set, consequently this order contained 2300 WHEELS and 1400 AXLES; value over \$100,000.

Railroad Iron.

THE UNDERSIGNED, HAVING made arrangements abroad, are prepared to contract for the delivery of Foreign rails, of approved brands upon the most favorable terms.

They will also make contracts for American rails, made at their Trenton works, from Andover Iron, in whole or in part, as may be agreed upon.

They are prepared to furnish Telegraph, Spring and Market Wire; Braziers and Wire Rods; Rivets and Merchant Bars to order, all made exclusively from Andover Iron. The attention of parties who require iron of the very best quality for special purposes, is respectfully invited.

COOPER & HEWITT,
17 Burling Slip, New York.

February 15, 1850.

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.

August, 16, 1849.

6m33

Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc, Iron.

THOMAS B. SANDS & CO.,

73 New street,
New York.

February 3, 1849.

Glendon Refined Iron.

Round Iron, Band Iron, Hoop Iron,
Square " Flat " Scroll "

Axles, Locomotive Tyres,

Manufactured at the Glendon Mills, East Boston, for sale by

GEORGE GARDNER & CO.,

5 Liberty Square, Boston, Mass.

Sept. 15, 1849.

3m37

ENGINEERS.

Atkinson, T. C.,

Mining and Civil Engineer,
Orange and Alexandria Railroad, Alexandria, Va.

Clement, Wm. H.,

Little Miami Railroad, Cincinnati, Ohio.

Cozzens, W. H.,

Engineer and Surveyor, St. Louis, Mo.

Alfred W. Craven,

Chief Engineer Croton Aqueduct, New York.

Floyd-Jones, Charles,

Alton and Sangamon Railroad, Alton, Illinois.

Gay, Edward F.,

Columbia and Philadelphia Railroad, Philadelphia Pa.

Gilbert, Wm. B.,

Rutland and Burlington Railroad, Rutland, Vt.

Gzowski, Mr.,

St. Lawrence & Atlantic Railroad, Montreal, Canada.

Grant, James H.,

Nashville and Chattanooga R. R., Nashville, Tenn.

S. W. Hill,

Mining Engineer and Surveyor, Eagle River,
Lake Superior.

Holcomb, F. P.

Southwestern Railroad, Macon, Ga.

Latrobe, B. H.,

Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,

Buffalo and Concho Valley Railroad, Bath, N. Y.

Morris, Elwood,

Schuylkill Navigation, Schuylkill Haven, Pa.

Nott, Samuel,

Lawrence and Manchester Railroad, Boston,

Osborne, Richard B.,

Civil Engineer, Philadelphia.

Prichard, M. B.,

East Tennessee and Georgia R. R., Cleveland, Tenn.

W. Milnor Roberts,

Bellefontaine and Indiana Railroad, Marion, Ohio.

Roberts, Solomon W.,

Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Sanford, C. O.,

South Side Railroad, Virginia.

Schlatter, Charles L.,

Northern Railroad (Ogdensburg), Malone, N. Y.

Steele, J. Dutton,

Pottstown, Pa.

Trautwine, John C.,

Civil Engineer and Architect, Philadelphia.

Tinkham, A. W.,

United States Fort, Buckport, Me.

Troost, Lewis,

Alabama and Tennessee Railroad, Selma, Ala.

Whipple, S.,

Civil Engineer and Bridge Builder, Utica, N. Y.

HOTELS.**DAVIS'S****ALHAMBRA HALL,**No. 136 Pratt street,
BALTIMORE.**Exchange Hotel,**Adjoining Eastern Railroad Depot,
BUFFALO, N. Y.BY.....**FISK & SPERRY,**
Late of Delevan House, Albany.**MANSION,**Corner of Maine and Exchange Streets,
P. DORSHIMER. **BUFFALO.****Barnum's City Hotel,****MONUMENT SQUARE, BALTIMORE.**

This Extensive Establishment, erected expressly for a Hotel, with every regard to comfort and convenience, is situated in the centre and most fashionable part of the city, and but a few minutes' walk from the Railroad Depots and Steamboat Landings.

The House has lately undergone a thorough repair, embracing many valuable improvements, and will accommodate 250 Guests. **BARNUM & CO.****American Hotel,**Pratt street, opposite the Railroad Depot,
BALTIMORE.**HENRY M. SMITH.....Proprietor.**
Late of the Exchange & St. Charles Hotels, Pittsburg**Washington Hotel,**BY **JOHN GILMAN,**

\$1 Per Day.

No. 206 Pratt street, (near the Depot),
BALTIMORE.**GUY'S****United States Hotel,**(Opposite Pratt street Railroad Depot),
BALTIMORE.**JOHN GUY.** **WILLIAM GUY.****DUNLAP'S HOTEL,**On the European Plan,
NO. 135 FULTON STREET,
Between Broadway and Nassau St.,
NEW YORK.**JONES' HOTEL,**NO. 152 CHESTNUT STREET,
PHILADELPHIA.**BRIDGES & WEAVER, Proprietors.****Fountain Hotel,****LIGHT STREET, BALTIMORE,**
P. THURSTON.....Proprietor.**BUSINESS CARDS.****Walter R. Johnson,****CIVIL AND MINING ENGINEER AND AT-**
torney for Patents. Office and Laboratory, F St.,
opposite the Patent office, Washington, D. C.**Lithography.****JOHN P. HALL & CO.,**

161 Main st., Buffalo, (Commercial Advertiser Build.)

Are prepared to execute all kinds of Lithography in good style and at reasonable rates. Particular attention will be paid to Engraving Railroad Maps, Engineer's Plans and drafts, etc., and orders in this line are respectfully solicited.

Cumberland, (Md.) Coals for Steaming, etc.**ORDERS RECEIVED FOR AND FILLED**
by **J. COWLES, 27 Wall St., N. Y.****J. & L. Tuckerman,**
IRON COMMISSION MERCHANTS,AND MANUFACTURERS OF
ULSTER BAR & POUGHKEEPSIE PIG IRON,
69 WEST STREET,
NEW YORK**Henry I. Ibbotson,****IMPORTER of Sheffield and Birmingham Goods.**
Also, Agent for the Manufacture of Telegraph Wire.
218 PEARL ST., NEW YORK.**Charles T. Jackson, M. D.,****STATE ASSAYER,** late Geologist to Maine, Rhode Island, New Hampshire, and the United States, offers his services to his friends and the public in making any Chemical, Mineralogical or Geological researches that may be required for the improvement of Agriculture and the Manufacturing Arts. Particular attention will be paid to the exploration of mines and to assaying of ores of the metals.State Assayer's office, 31 Somerset st.
Boston Sept. 3, 1850.**STEEL AND FILES.****R. S. Stenton,**

20 CLIFF STREET, NEW YORK,

AGENT FOR

J. & RILEY CARR,**BAILEY-LANE WORKS, SHEFFIELD,**
Manufacturers of Cast, Shear, German, Blister, and
Spring Steel,

Of all descriptions, Warranted Good.

FILES.

Manufacturers of Machinists' Warranted Best Cast Steel Files, expressly for working upon Iron and Steel, made very heavy for recutting.

A full Stock of Steel and Files at all times on hand. 6m4

Dudley B. Fuller & Co.,**IRON COMMISSION MERCHANTS,**
No. 139 GREENWICH STREET,
NEW YORK.**Manning & Lee,****GENERAL COMMISSION MERCHANTS,**
NO. 51 EXCHANGE PLACE,
BALTIMORE.Agents for Avalon Railroad Iron and Nail Works.
Maryland Mining Company's Cumberland Coal 'CED'
—'Potomac' and other good brands of Pig Iron.**Samuel Kimber & Co.,**
COMMISSION MERCHANTS

WILLOW ST. WHARVES, PHILADELPHIA.

AGENTS for the sale of Charcoal and Anthracite
Pig Iron, Hammered Railroad Car and Locomotive Axles, Force Pumps of the most approved construction for Railroad Water Stations and Hydraulic Rams, etc., etc.
July, 27, 1849.**James Herron, Civil Engineer,****OF THE UNITED STATES NAVY YARD,**
PENSACOLA, FLORIDA,

PATENTEE OF THE

HERRON RAILWAY TRACK.

Models of this Track, on the most improved plans may be seen at the Engineer's office of the New York and Erie Railroad.

PLUSHES

FOR

Railway Cars & Omnibuses.**F. S. & S. A. MARTINE,**

112 WILLIAM ST., NEAR JOHN.

ARE now receiving a large and complete assortment of Plain and Figured **PLUSHES**, of their own importation, which will be sold at the lowest market price, viz: Crimson, Maroon, Scarlet, Green, Blue, Purple, etc.**ALSO—CURLLED HAIR,** the best manufactured in market.**To Railroad Companies, Machinists, Car Manufacturers, etc., etc.****CHARLES T. GILBERT,**

NO. 80 BROAD ST., NEW YORK,

IS prepared to contract for furnishing at manufacturer's prices—Railroad iron,
Locomotive Engines,
Passenger and Freight Cars,
Car Wheels and Axles,
Chairs and Spikes.

Orders are invited; and all inquiries in relation to any of the above articles will receive immediate attention

Manufacture of Patent Wire ROPE AND CABLES,For Inclined Planes, Suspension Bridges, Standing Rigging, Mines, Cranes, Derrick, Tilters, &c., by
JOHN A. ROEBLING, Civil Engineer,
TRENTON, N. J.**FORGING.****Ranstead, Dearborn & Co.,****MANUFACTURERS OF**
LOCOMOTIVE CRANKS AND CAR AXLES,**ALSO**
WROUGHT IRON SHAFTING,
And All Kinds of Hammered Shapes.
Office 25 Foster's Wharf, Boston.**Samuel D. Willmott,****MERCHANT, AND MANUFACTURER OF**
CAST STEEL WARRANTED SAWS,**—AND FILES—**
IMPORTER OF THE
GENUINE WICKESLY GRINDSTONES
NO. 8 LIBERTY STREET,
NEW YORK.**Railroad Instruments.****THEODOLITES, TRANSIT COMPASSES,**
and Levels, with Frannhoffer's Munich Glasses,
Surveyor's Compasses, Chains, Drawing Instruments, Barometers, etc., all of the best quality and workmanship, for sale at unusually low prices, by
E. & G. W. BLUNT,No. 179 Water St., cor. Burling Slip.
New York, May 19, 1849.**IRON.****Iron.**

Pig Iron, Anthracite and Charcoal; Boiler and Flue Iron, Spring and Blistered Steel, Nail Rods, Best Refined Bar Iron, Railroad Iron, Car Axles, Nails, Stove Castings, Cast Iron Pipes of all sizes, Railway Chairs of approved patterns for sale by

COLEMAN, KELTON & CAMPBELL,
109 N. Water St., Philadelphia.**Iron Store.****THE** Subscribers, having the selling agency of the following named Rolling Mills, viz: Norristown, Rough and Ready, Kensington, Philadelphia, Pottsgrove and Thorndale, can supply Railroad Companies, Merchants and others, at the wholesale mill prices for bars of all sizes, sheets cut to order as large as 58 in. diameter; Railroad Iron, domestic and foreign; Locomotive tire welded to given size; Chairs and Spikes; Iron for shafting, locomotive and general machinery purposes; Cast, Shear, Blister and Spring Steel; Boiler rivets; Copper; Pig Iron, etc., etc.**MORRIS, JONES & CO.,**Iron Merchants,
Schuylkill 7th and Market Sts., Philadelphia.
August 16, 1849. 1y33

Bowling Iron. Stamped B.O.

Railway Tire Bars
Locomotive and other Axles
Boiler Plates
and every other description of this superior Iron.

The subscribers, agents for the sale of Bowling Iron, are prepared to execute orders for importation, especially for railway and machinery uses, with despatch from the manufacturers.

RAYMOND & FULLERTON, 45 Cliff st.

**Ibbotson, Brothers & Co's
CELEBRATED CAST STEEL**

Best Cast Steel Royal Improved Files, well known as better adapted for Engineers' and Machinists' purposes than any now in use in the United States.

Every description of Square, Octagon, Flat and Round Cast Steel, Sheet, Shovel and Railway Spring Steel, etc., and Steel to order for any purposes—manufactured at their works in Sheffield—and universally known by the old stamp "Globe."

HENRY I. IBBOTSON, Agent,
218 Pearl st., New York.

**Smith & Tyson,
IRON COMMISSION MERCHANTS,
BALTIMORE.**

REFINED Juniata Charcoal Billet Iron for Wire. Do. for Bridging, of great strength. Flat Rock, Boiler and Flue Iron, rolled to pattern. Elba, Wheel Iron of great strength and superior chilling properties. Elba Forge Iron, American Shot Iron, Cut Nails, Spikes and Brads, Nail and Spike rods, Railroad Spikes of superior quality, Wrought Chair plates of any pattern, punched or plain.

**WILLIAM JESSOP & SONS'
CELEBRATED CAST-STEEL.**

The subscribers have on hand, and are constantly receiving from their manufactory,

PARK WORKS, SHEFFIELD,

Double Refined Cast Steel—square, flat and octagon. Best warranted Cast Steel—square, flat and octagon. Best double and single Shear Steel—warranted. Machinery Steel—round.

Best and 2d gy. Sheet Steel—for saws and other purposes.

German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.

Genuine "Sykes," L. Blister Steel.

Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by

WM. JESSOP & SONS,

91 John street, New York.

Also by their Agents—

Curtis & Hand, 47 Commerce street, Philadelphia.

Alex'r Fullerton & Co., 119 Milk street, Boston.

Stickney & Beatty, South Charles street, Baltimore.

May 6, 1848.

Railroad Iron.

B. O. Railway Tires, Railway Wheels,
Scotch Pig Iron, Tin Plates and Banca Tin,
Muntz Patent Metal Sheathing,
Baltimore Copper.

Contracts for Rails made on behalf of the manufacturers, for delivery at any ports in the United States, at fixed prices.

Bowling Tires and Tire Bars and Scotch Pigs imported to order.

Muntz's Ship-sheathing, and a general stock of Tin Plates and Banca Tin in store, and for sale by

RAYMOND & FULLERTON, 45 Cliff st.

**IRONDALE PIG METAL, MANUFACTURED
and for sale by the Bloomsburg Railroad Iron Co.**

LINDLEY FISHER, Treasurer.

75 N. Water St., Philadelphia.

Car Wheel Iron.

THE celebrated cold blast "Conowingo" Pig Iron, for Railroad Wheels, Chilled Rolls, etc., for sale by

E. PRATT & BROTHER,

Baltimore, Md.

Railroad Iron.

3,000 TONS C. L. MAKE 63 lbs. per yard, now landing and to arrive.

Also contracts made for future delivery of above superior make English Iron.

300 Tons Banks Best Iron, Round, Square and Flat.

200 " English Bar "

10 " 9-16 Square Iron for Railroad Spikes.

For sale in lots to suit purchasers by

DAVID W. WETMORE.

New York, March 25, 1850.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

**JOHNSON, CAMMELL & Co's
Celebrated Cast Steel,**

AND

ENGINEERING AND MACHINE FILES, which for quality and adaptation to mechanical uses, have been proved superior to any in the United States. Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cyclops Steel Works Sheffield.

JOHNSON, CAMMELL & CO.,
100 William St., New York.

November 23 1849.

Bowling Tire Bars.

40 Best Flange Bars 5½x2 inches, 11 feet long.
40 " " 5½x2 " 7 feet 8 in. long.
40 " Flat " 6x2 " 11 feet long.
40 " " 6x2 " 7 feet 8 in. long.

Now in store and for sale by

RAYMOND & FULLERTON,
45 Cliff street.

**Wheel, Forge and Foundry
Iron.**

LOCUST GROVE Wheel Iron of great strength and superior chilling property.

Balt. Charcoal Forge Iron, from Patuxent, Curtis Creek and Gunpowder furnaces.

Elkridge Foundry Iron, of superior strength and softness. Anthracite and Charcoal Iron from Pennsylvania and Virginia. Gas and Water Pipes, Lamp Posts from Elkridge furnace.

LEMMON & GLENN,

62 Buchanan's Wharf, Baltimore.

Railroad Iron.

1650 Tons, weighing about 61 lbs. per yard, 40 tons, weighing about 52 lbs. per yard, and 825 tons, weighing about 53½ lbs. per yard, of the latest and most approved patterns of T rail, for sale by

BOOKMAN, JOHNSTON & CO.,

119 Greenwich street.

New York, Aug. 26, 1850.
N.B.—B. J. & Co are also prepared to take contracts for English rails, delivered in any of the Atlantic ports of the United States.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract to deliver Rails of superior quality, and of any size or pattern, to any ports of discharge in the United States.

COLLINS, VOSE & CO.,

74 South St.

New York, June 1, 1850.

Tredegar Iron Works.

ROLLING MILL FOUNDRY AND MACHINE SHOPS. The undersigned continues to manufacture at his Works in this city (from best charcoal metal) Bar Iron of every description, embracing—Rounds and Squares, from ½ to 5 inches diameter. Flats, from ½ to 7 inches, all thicknesses.

Bands and Scrolls, all sizes. Boiler plate and Plough Iron. Railroad and Locomotive Axles and Tires. Locomotive Frames, Spikes and Plates. Hoops, Ovals, Half Ovals, Half Rounds, Angle, T, L, and indeed every description of Iron usually manufactured, all of which he warrants to be equal to any made in this country. He also manufactures at his Foundry and Machine Shops all descriptions of Railroad Work, say, Locomotives, Railroad Wheels and Axles complete and ready for the road, Railroad Chairs, etc. Also, Marine and Stationary Engines all sizes, Sugar mills and Engines, Horse mills, and every kind of Machinery usually required for the operations of the country. He has paid particular attention to getting up machinery, etc., for Gold Mine operations, and those in want of such work might find it to their advantage to give him a call.

J. R. ANDERSON.

Richmond, Va., Sept. 10, 1850.

CUT NAILS OF BEST QUALITY, BAR IRON (including Flat Rails) manufactured and for sale by

FISHER, MORGAN & CO.,

75 N. Water St., Philadelphia.

Car Wheel Iron.

100 Tons "Columbia" No. 2 Cold Blast Charcoal Iron.

300 Tons "Salisbury" No. 1, do. do.

For sale by CHARLES T. GILBERT,

No. 80 Broad st.

New York, Sept. 21, 1850.

Railroad Spikes.

THE subscribers are prepared to make and execute contracts for Railroad Spikes of a superior quality, manufactured by the New Jersey Iron Company, at Boonton.

DUDLEY B. FULLER & CO.

139 Greenwich st. corner of Cedar.

**S. S. Keyser & Co.,
IRON WAREHOUSE,**

Corner of South and Pratt Streets,
BALTIMORE, MD.

Selling Agents for the Rough and Ready Bar Iron and Elk Boiler and Flue Iron Rolling Mills, Sarah and Taylor Furnaces, and Wrightsville Hollow Ware Foundry, and Dealers in Bar and Sheet Iron, and Cast, Sheer, German, Blister, Spring and Electroplated Steel, etc., etc.

Railroad Spikes, Boiler Rivets, etc.

THE Subscribers, Agents for the sale of James S. Spencer's, Jr., Railroad and Boat Spikes, Boiler Rivets, and Wrought Iron Chairs for Railroads, made at his Works near this city, will execute all orders with promptness, despatch, and of the best quality.

ALSO IMPORTERS of English refined and Merchant bar Iron; Extra refined Car and Locomotive Axles (from 3½ to 6½ inches in diameter); B. O. Locomotive Tire (welded by Baldwin). Also, supply Boiler and Flue Iron cut to pattern or otherwise.—Spring, Shear, and Cast Steel, etc., etc.

T. & E. GEORGE.

Philadelphia, November 14, 1850.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract for the delivery of English, Welsh and Scotch Rails, of any pattern and weight, also for every description of English, Welsh, Scotch, and Swedish Iron, Railway Chairs and Spikes, Rivets, Bolts, Nuts, Washers, Chain Cables, Anchors, Tin Plates, German Spelter, Iron Castings, and every description of Machinery.

WILLIAM BIRD & CO.,

Iron and Tin Plate Merchants,

44 Wall st., New York.

And at 5 Martin's Lane, City, London,

and 140 Buchanan st. Glasgow.

July 27th, 1850.

**Railroad Spikes, Wrought
Chairs and Fastenings.**

THE subscribers continue to manufacture, with increased facilities, Hook and Flat Head Railroad Spikes and Chairs. The points being FINISHED BY HAND, have a long taper, and sharp point, and are much superior to those made entirely by machinery.

We are also prepared to furnish Wrought Chairs, Clamps and Fastenings of every description, either punched or plain. The best quality of refined iron is used in the above articles, and our prices will be made as favorable as any in the country.

The patent Clinch Spike will be found an improvement to secure the rail at the joints.—They drive in the manner shown and are not liable to work loose.

All communications, addressed to the undersigned, will meet with prompt attention.

SMITH & TYSON,

No. 25 South Charles st., Baltimore Md.

Railroad Iron.

THE "Montour Iron Company" is prepared to execute orders for Rails of the usual patterns and weights, and of any required length not exceeding 30 feet per rail. Apply at the office of the Company,

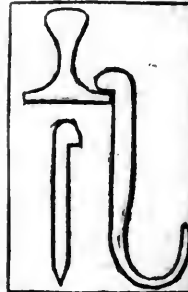
No. 73 South 4th st., Philadelphia,

Or to the Agents,

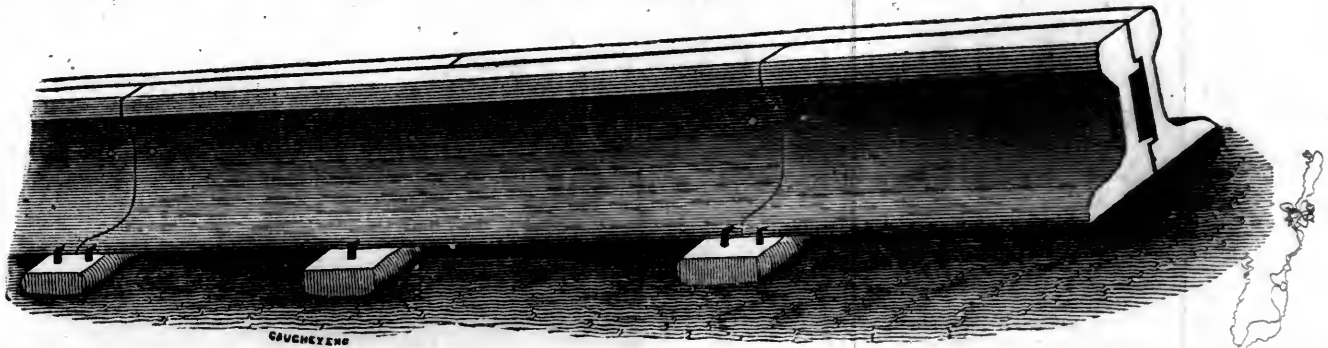
CHOUTEAU, MERLE & SANFORD,

No. 51 New st., New York,

September, 1850.



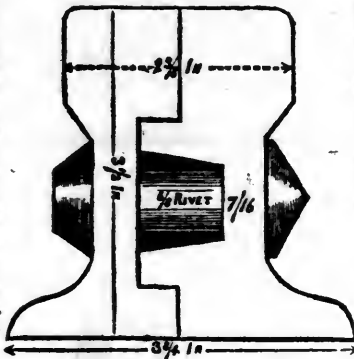
PATENT COMPOUND RAIL.



THE UNDERSIGNED NOW OFFER TO THE Railroad Public a new Compound Railroad Bar, which possesses, as they believe, a decided superiority over every kind now in use. The Cuts annexed will give a good idea of the form of the Rail, and the mode of combination.

This Rail has now been in use on the New York and Erie and the Utica and Schenectady Railroads for nearly two years, and has proved itself to be a *durable and continuous* rail, realizing the advantages of a theoretically perfect rail, over the one in common use. We invite the attention of Railroad Companies to a careful examination of the merits of the form now offered.

The advantages of this Rail are: first, it effects a saving of from 25 to 50 per cent. in the wear and tear of the machinery; secondly, it saves to a vastly greater extent in the repairs of track; thirdly, it secures a much higher rate of speed with the same power; and what is of still



greater importance, it offers complete protection against most of the accidents to which companies are liable. For these reasons, it is believed to be not only the best, but the cheapest rail that can be used. In enumerating its advantages, the proprietors only repeat the statements of competent persons, who have had the best opportunities of judging of its merits.

This improved Rail is now being manufactured at the Works of the Mount Savage Iron Co. in Maryland. Any communications or enquiries addressed to either of the undersigned will receive prompt attention.

J. F. WINSLOW, President,
Troy, N. Y.
ERASTUS CORNING, Albany.
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore.

April 8, 1851.

Fagotted Car and Engine Axles

FORGED by RANSTEAD, DEARBORN & Co., Boston, Mass.

These Axles enjoy the highest reputation for excellence, and are all warranted.

TO RAILROAD COMPANIES, CAR MANUFACTURERS, etc.

THE Undersigned hereby gives public notice, that the Commissioner of Patents, pursuant to his decision in relation thereto, on the 8th day of October, 1850, issued to him a Patent for the sole right to manufacture, and exclusive use of the INDIA RUBBER CAR SPRING, on account of priority of invention of said Spring.

F. M. RAY.
New York, Oct. 23, 1850.

Iron Trade of Pennsylvania.

DOCUMENTS and Statistics relating to the Manufacture of Iron in the State of Pennsylvania—giving a history of the manufacture from its commencement to this date, illustrated by diagrams. Also tables giving the address and capacity of every establishment in the State. Prepared by direction of the late convention of the trade held in Philadelphia.

For sale by
LINDSAY & BLACKISTON, Philadelphia.
FIELDING LUCUS, Jr., Baltimore.

HENRY G. NICHOLS, 79 Water st., N. Y.
or at this office—price \$1 00.

It will be sent by mail to any order enclosing the money, and post paid.

Ulster Iron.

THE ULSTER IRON WORKS, Saugerties, N. Y., continue in full operation. Orders for round, square, flat, band, hoop and scroll iron, will be received and promptly executed by

J. & L. TUCKERMAN,
69 West St., New York.

Railway Iron.

THE Subscribers will contract to deliver, in the course of the ensuing Spring and Summer, the best English Rails, made by a particular specification, and of any pattern required.

DAVIS, BROOKS & CO.,
68 Broad st.

On hand for sale, English rails of 58 lbs. to the yard, made by particular specifications.
January 10, 1851. 2m

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention.

J. F. WINSLOW, President,
Troy, N. Y.
ERASTUS CORNING, Albany.
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md

November 6, 1848.

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phoenix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehanna river; which two establishments are now turning out upwards of 1800 tons of finished rails per month. Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.

REEVES, BUCK & CO.

45 North Water St. Philadelphia.

March 15, 1849.

LAP-WELDED WROUGHT IRON TUBES

FOR

TUBULAR BOILERS,
FROM ONE AND A QUARTER TO SEVEN INCHES IN DIAMETER.

THE ONLY Tubes of the same quality and manufacture as those so extensively used in England Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER & SON, Patentees,
28 Platt street, New York.

AMERICAN PIG IRON.

"POUGHKEEPSIE" brand, Dutchess Co., N. Y.
"GLENDON" brand, Lehigh county, Pa.
Orders for the above two well known brands will be received, and promptly executed, by

J. & L. TUCKERMAN,
69 West St., New York.

Spikes, Spikes, Spikes.

ANY person wishing a simple and effective Spikes Machine, or a number of them, may be supplied by addressing
J. W. FLACK, Troy, N. Y.
or, MOORE HARDAWAY, Richmond, Va.
March 6, 1850.

Railroad Iron.

2000 Tons, weighing 58 pounds per lineal yard, of the most approved pattern of T rails, in store and to arrive, for sale by
COLLINS, VOSE & CO.,
74 South St.

New York, June 1, 1850.

American Cast Steel.

THE ADIRONDAC STEEL MANUFACTURING CO. is now producing, from American iron, at their works at Jersey City, N.J., Cast Steel of extraordinary quality, and is prepared to supply orders for the same at prices below that of the imported article of like quality. Consumers will find it to their interest to give this a trial. Orders for all sizes of hammered cast steel, directed as above, will meet with prompt attention.

May 28, 1849.

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for railroads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.

JOHN F. WINSLOW, Agent.

Albany Iron and Nail Works, Troy, N. Y.
The above Spikes may be had at fact prices, of
Erastus Corning & Co Albany; Merrill & Co., New York; E. Pratt & Co., Baltimore, Md

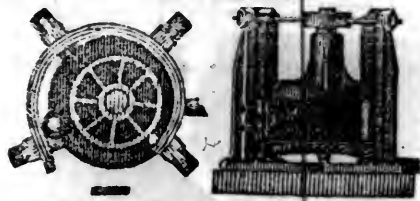
American Railroad Iron.

1000 Tons, weighing 50 lbs. per yard, manufactured by Reeves, Abbott & Co., at the Safe Harbor Iron Works, and now lying in yard at Brooklyn, for sale by

CHOUTEAU, MERLE & SANFORD,
No. 51 New street.

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phoenixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll sounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y.

P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery for making Spikes, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

CHILLED RAILROAD WHEELS.—THE UNDERSIGNED are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without turning them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St. below 13th,
Philadelphia, Pa.

Brown's Old Established SCALE WARE HOUSE,

NO. 234 WATER ST., NEW YORK.

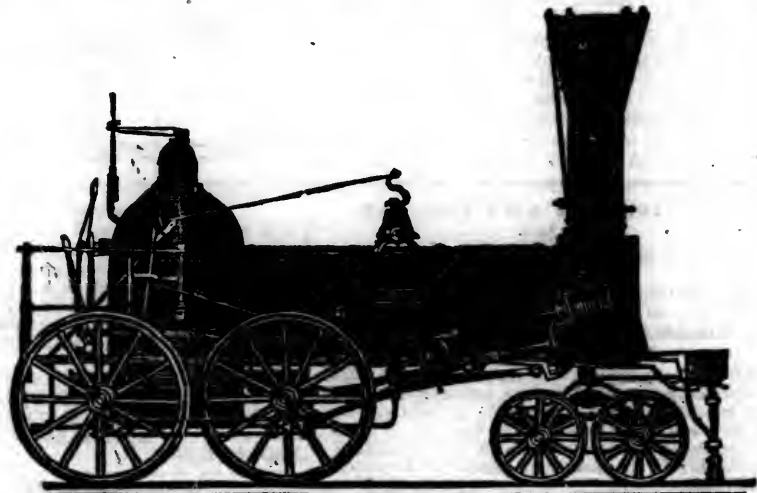
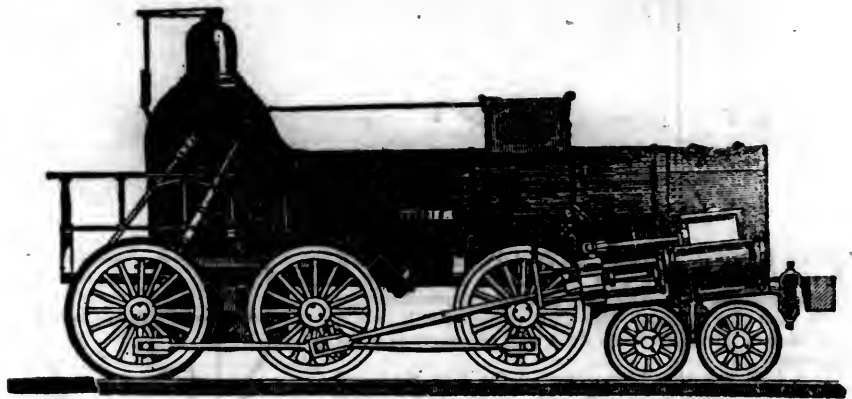
THE Subscriber, Practical Manufacturer of Scales of every description, respectfully asks the attention of Railroad Companies to his Improved Wrought Iron Railroad Track and Depot Scales which for strength, durability, accuracy, convenience in weighing, and beauty of workmanship, are not surpassed by any others in this country.

He is aware that this is rather a bold assertion for him to make, yet he can say with confidence that they have but to be tried to give them precedence over all others.

J. L. BROWN.

Bank Scales made to order, and all Scales of this make Warranted in every particular.

References given if required

NORRIS' LOCOMOTIVE WORKS.
BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,

THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size. Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tyres are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS

PATENT MACHINE MADE HORSE-SHOES.



The Troy Iron and Nail Factory have always on hand a general assortment of Horse Shoes, made from Refined American Iron.

Four sizes being made, it will be well for those ordering to remember that the size of the shoe increases as the numbers—No. 1 being the smallest.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

Etna Safety Fuse.

THIS superior article for igniting the charge in wet or dry blasting, made with DUPONT'S best powder, is kept for sale at the office and depot of

REYNOLDS & BROTHER,

So. 8 Manufacturers, No. 85 Liberty St.

NEW YORK.

And in the principal cities and towns in the U. States.

The Premium of the AMERICAN INSTITUTE was awarded to the Etna Safety Fuse at the late Fair held in this city.

November 3, 1849.

ly

UNION WORKS,

North street, opposite the Railroad Depot,
BALTIMORE.

Poole & Hunt,

Manufacturers of Steam Engines and Mill Gearing, Machinists' Tools, and all kinds of heavy and light Machinery.

Also put up Arrangements of Wrought Iron Pipes for heating buildings and conveying steam or water. Castings of every kind furnished at short notice.

Every exertion will be made to insure the satisfaction of customers.

Patent Machine Picket Fence

SIX DIFFERENT STYLES of this fence are now made by patent machinery; and is by far the most economical fence for Railroads, Farms, Yards, etc., ever yet offered to the public, costing only from 4 to 30 cents per foot, according to pattern; and is so put up as to be shipped at a trifling expense. Full particulars will be furnished, by addressing the subscriber, to whom all orders should be sent.

N. STRATTON, Troy, N. Y.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

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SATURDAY, MAY 17, 1851.

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ASSISTANT EDITORS,

J. T. HODGE, *For Mining and Metallurgy.*

GEN. CHAS. T. JAMES, *For Manufactures and the Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & Co., 136 NASSAU ST.

Saturday, May 17, 1851.

New York and Erie Railroad.

We had the pleasure the last week of passing, for the first time, over the portion of this road then opened towards Lake Erie; and it is with much satisfaction we bear our testimony to the excellent arrangements that have been provided for the most speedy and comfortable transportation of passengers. When, in the course of another week, these arrangements are fully completed, so that passengers can go directly through to the Lake without change of baggage, which in these long lines of travel is a great desideratum, we cannot but believe this road will receive the largest share of patronage of any of those leading from the seaboard toward the far-west. From Jersey City, the line commences on the old road to Trenton, branching off from it to Patterson about four miles out. It follows up the lovely valley of the Passaic—a region filled with beautiful farms, which though with-

in a few miles of New York city, are held at prices strangely low; and passing through the flourishing town of Patterson, enters into the hilly region of Northern New Jersey. The highlands are passed near the line of the two States, and towards the north and east, as the road winds along by the side of the Ramapo, these hills are seen stretching away towards West Point. On the 6th of May their tops were white with snow, while in the lowlands the apple and peach trees were blooming in rich luxuriance. This is a very interesting portion of the route from the fineness of the scenery as well as from the geological character of the country. It is in these hills are found the famous beds of magnetic iron ore, which until recently have given support to many busy furnaces and forges, both in New Jersey and New York. But the fires of these are now in great part extinguished, and the eye meets many deserted establishments scattered along the Ramapo, upon its abundant but now almost useless water-falls. Beyond the highlands, the great eastern belt of granitic rocks is soon passed, and the rough features these rocks impart to the scenery can no more be found on any of the usual routes to the Mississippi river. In their place we find the rolling outlines of the sandstones, limestones, slates and shales, which rock formations occupy the great body of the middle states; and in the western part of Orange county we enter at once upon the fine farming lands, such as are peculiar to, and indeed a necessary consequence of some of these formations.

Crossing the line of New Jersey, the terminus of the Ramapo railroad is reached at its junction with the Erie railroad. The latter continues on to the east, till it meets the Hudson river at Piermont;—but, for the conveyance of passengers, the line by the way of Jersey City is decidedly preferable, both in point of time and convenience, to the former route of steamboat up the Hudson to the Erie road at Piermont. At Sufferns, cars of the usual gauge are exchanged for the wide ones, which run upon the six foot track of the Erie road. These, built on a generous scale, give to each passenger abundance of room, which many a weary traveller has wished for in vain on our long and crowded lines of thoroughfare. The seats which accommodate two persons, measure forty-four inches inside—which is about the width usually occupied by three in our stage coaches—and between the seats the

passage is so wide that there is no excuse in passing, for uncomfortably jostling those at the ends of the seats. The carriages appear to be unusually well built; the windows—of a single pane of glass—are larger than we have seen on any other railroad; and in every respect no pains seem to have been spared to make them most comfortable to the passengers. Their speed averages about twenty-five miles an hour, including stoppings.

Passing up the valley of the Delaware, we crossed over to that of the Susquehanna, winding now our course along the fine bottom-lands of these rivers, and then dashing under the steep cliffs of the red and grey sandstones. These from their towering heights, look silently down with threatening aspect upon the noisy train madly rushing into their very foundations, and hourly disturbing their repose—long before unbroken.

Until the completion of the road to the Lake, the route has been by steamboat on Seneca Lake to Geneva, and thence by the old line of railroads to Buffalo. We took this course, passing the length of Seneca Lake, about forty miles, in the evening, and taking the train again at Geneva, arrived at Buffalo in twenty-five hours from New York city. This route will hereafter be little used, except by those wishing to go to Buffalo, Niagara Falls and Toronto. To travellers to Canada West, it would be well could they be made aware of the impositions they will be liable to along the old line of roads, after reaching Geneva. We recommended, a short time since, this route to an eminent Canadian physician, who had just returned with his family from England, and was desirous of reaching Toronto by the earliest and best mode. He arrived safely at Rochester, and was there persuaded to purchase tickets by Oswego, instead of going directly on to Buffalo. For these tickets he paid twenty-five dollars, and was delayed at Rochester twelve hours after he might have left by the western train. On taking the steamboat at Rochester, he found his tickets were for the *steorage*, and the twenty-five dollars he paid was a clear loss. We met with two other victims of a similar imposition, who had been persuaded to purchase tickets in New York city, for Buffalo, by the way of Albany. They were two staid Quakers, from the vicinity of Philadelphia. On reaching Schenectady, they found themselves placed in an *emigrant train*, which they could exchange only by the loss of the

money they had paid. The Erie road being now a direct route to the western lakes, will relieve a large mass of passengers from liability to impositions such as the above. We wish it all success, and this we doubt not its merits will soon secure to it. H.

We copy from the Mining Register, published at Pottsville, the following statement of the comparative cost of transporting a ton of coal from the Lehigh and the Schuylkill mines to Philadelphia and New York, in 1850:

Cost of transportation of Coal from the Lehigh Region, and of shipment at Philadelphia.

From Mauch Chunk.	
Freight to Philadelphia.....	\$0 78
Lehigh toll.....	0 40
Delaware toll.....	0 31
Steam towing from Bristol.....	0 06
Unloading and putting into vessels.....	0 25

Cost on board vessels.....\$1 80

From Penn Haven.

From Mauch Chunk, as above.....	\$1 80
Additional freight and toll.....	0 13

Cost on board vessels.....\$1 93

From Rock Point.

From Mauch Chunk, as above.....	\$1 80
Additional freight and tolls.....	0 25

Cost on board vessels.....\$2 05

From White Haven.

From Mauch Chunk, as above.....	\$1 80
Additional freight and toll.....	0 40

Cost on board vessels.....\$2 20

Cost from the Schuylkill Region.

Cost on board vessels at Richmond.....	\$1 70
Dumpage, and 5 per cent allowance pay for shipment.....	—

Cost of transportation, per ton of 2,240 lbs., of Coal from the Lehigh and Schuylkill Regions to New York.

From Mauch Chunk.

Freight.....	\$1 05
Toll on Lehigh.....	0 40
Toll on Delaware division.....	0 31
Toll on outlet lock.....	0 04
Toll on Delaware and Raritan feeder.....	0 35
Steam towing from New Brunswick to New York.....	0 17
Unloading.....	0 10

Total.....\$2 42

From Penn Haven.

Cost as above.....	\$2 42
Additional freight.....	0 08
Additional Toll.....	0 05

Total.....\$2 55

From Rock Port.

Cost as above.....	\$2 42
Additional freight.....	0 15
Additional toll.....	0 10

Total.....\$2 67

From White Haven.

Cost as above.....	\$2 42
Additional freight.....	0 20
Additional toll.....	0 15

Total.....\$2 77

From Mount Carbon.

Freight, including tolls on the Delaware and Raritan canal, steam towing, and unloading.....	\$1 70
Toll on Schuylkill canal.....	0 71

\$2 41

Deduct for hire of cars and rent of chutes furnished by Schuylkill Navigation Company.....	0 10
--	------

Total.....\$2 31

Tabular Statement of the Length, Cost, Receipts, etc., of New England and New York Railways.

STATES.	Area, sq. miles.	Population. 1850.	Miles of Rail-way in oper-ation.	Cost.	No. of inhabi-tance to one mile of R. R.	No. of square miles to one mile of R. R.	Cost to each in-habitant.	Cost per mile.	No. passengers carried.	Receipts from passengers.	No. passengers to each inha-bitant.	Pass. receipts per head pop-ulation.	Tons of freight carried.	Receipts from freight, etc.	Tons freight to each inhabit-ant.	Freight receipts per head pop-ulation.	Total receipts.
Maine.....	32,628	583,296	252	\$7,120,692	1,916	125	\$12-26	\$28,292	595,721	\$412,501	1-02	\$0 70	131,919	\$151,010	0-23	\$0 26	\$563,511
Massachusetts.....	7,500	994,665	1,089	48,064,523	913	6-9	48-33	44,163	8,241,301	3,190,079	8-28	3 21	1,946,431	2,886,126	1-96	2 84	6,016,205
New Hampshire.....	9,491	318,063	512	16,363,982	631	.18	51-12	31,960	1,461,933	804,583	4-60	2 53	436,706	834,605	1-37	2 63	1,639,188
Vermont.....	10,212	314,322	366	10,924,138	882	27	34-75	29,847	502,809	442,106	1-60	1 41	170,291	432,100	0-54	1 37	874,206
Connecticut.....	4,764	371,982	443	15,057,237	839	10	45-55	33,989	1,828,544	1,210,716	4-92	3 25	338,007	982,021	0-90	2 65	2,192,737
Rhode Island.....	1,340	147,543	63	2,530,538	2,342	21	17-22	40,167	244,157	118,699	1-66	0 80	75,412	124,635	0-51	0 84	243,334
New York.....	46,220	3,098,818	1,359	65,781,509	2,280	34	21-23	48,277	6,248,673	4,183,400	2-00	1 35	934,095	1,887,211	0-30	0 59	6,020,611
Totals.....	112,453	5,828,419	4,084	116,851,619	19,123,238	10,362,084	3-28	1 78	4,032,861	7,187,708	0-69	1 23	17,549,792				

The above table presents, in a condensed form, a great deal of interesting information in relation to northern railroads. It shows the enormous amount that Boston has invested in these works. That city has furnished most of the money for the roads in Massachusetts, New Hampshire, Vermont and Maine, in addition to very large sums for roads in other States. The roads in the States enumer-

ated have already cost \$82,482,335; which is probably not a larger sum than the amount invested by Boston alone in railroads. Massachusetts is emphatically the leading railroad State in the world; comparing her population and the area of her territory with that of any other community.—At the average which we find in Massachusetts, Gt. Britain, with an area of about 122,000 square miles, should have 18,000 miles of railroad; compared with the population of the former, 26,000.—We find in that kingdom only about 7,000 miles. The whole cost of railroads in that country is about \$1,200,000,000. An expenditure for these works to equal that of Massachusetts, which cannot be less than \$100,000,000, would amount to \$2,600,000,000. New Hampshire boasts the greatest number of miles, and the greatest amount of expenditure to each individual. If all other parts of the country were equally well off in this respect we should have over 37,000 miles of railroad.

The average net earnings of the railroads in the New England States and New York cannot be less than 6 per cent, with largely increasing incomes. In the aggregate, the roads are paying well as investments of capital. They have been instrumental in increasing the value of other kinds of property to an extent many times greater than their cost. The collateral advantages derived from them have exceeded that resulting from the mere payment of dividends.

Memphis and Charleston Railroad.

We have received through our southern exchanges the report of the President of this company, submitted to a meeting of the stockholders, held on the first inst.

We have already given the report of the survey of the route, made under the charge of C. F. M. Garnett, Esq. The route finally determined upon by the directors commences at Memphis, thence running nearly east on the track of the La Grange and Memphis road to La Grange; thence by Jacinto, the county seat of Tishamingo in Mississippi, to Tuscumbia in Alabama; from Tuscumbia, on the track of the Valley railroad, to Decatur; thence to Huntsville, and from Huntsville to Crow Creek, in the county of Jackson, where it intersects the Nashville and Chattanooga road.

In making this location, says the report, the board was satisfied, all things being considered, that it was the nearest, cheapest and most practicable route, and combined in a greater degree the interests of the stockholders, than any other route surveyed, or that could probably be found. Independent of this conviction, which was sufficient to determine their action, there were other considerations not to be wholly disregarded. The LaGrange and Memphis road had rights and privileges guaranteed to them by their charter, which we were bound to respect, and without a relinquishment of which on their part, our road could not have been built at all. This road (the La Grange and Memphis) was chartered as far back as 1835, the State was joint owner and guaranteed to the company, as an inducement to build the road, that no road should ever be chartered by the Legislature of that State running parallel within twenty miles of it.—Hence in granting the charter to the Memphis and Charleston company it is conditioned that they shall respect the rights of the old company, and make terms with them. It must be obvious to all that the first step to be taken towards the construction of our road was to remove this disability without which the road could not be built at all. In order to accomplish this object the Legislature of Tennessee was asked to pass a law authorising the Governor to appoint three commissioners to value the State's interest in the road of our company.—This law was passed, the commissioners appointed, and the valuation made to us at \$15,000. Thus

much being accomplished towards removing this difficulty, it remained to conclude a negotiation with the private stockholders for their interest. The board of directors, on the part of the private stockholders, manifested a commendable spirit of liberality and a willingness to make terms that were just and liberal. They agreed to surrender the road bed and right of way to the Memphis and Charleston company without charge, in the event that they would build the road. Thus, it will be seen, that we get the old road from Memphis to Lagrange, a distance of 49 miles, for a sum merely nominal. After the most complete survey and full estimates, it is believed that it will not cost our company more than \$40,000 to refit this road ready to receive the superstructure. The grading of the road cost originally more than \$200,000, and is certainly worth to this company more than \$100,000. Coupling these facts with the additional consideration that it was the nearest route surveyed, the board felt that they could not hesitate when the line of duty was so clearly indicated.

From LaGrange it was found that the nearest and most practicable route to Huntsville would be through or near Tusculumbia, and as such, the location was made to that point. Here another conflict of interest of some magnitude presented itself. The north and south sides of the river were competitors for the road, together with an intermediate route by Brown's Ferry. By the surveys, it appeared that the line by the latter place was shorter than either of the others by about one mile. In the absence of any other consideration, the board would have had no difficulty in adopting this line. But it is known that the Valley road passes up the Tennessee valley from Tusculumbia to Decatur on a line parallel to the one surveyed to Brown's Ferry, and it was ascertained that the route by the line of this road would increase the distance only one mile. The board being desirous to harmonise all conflicting interests where it could be done without compromising the interests of their own company, decided that they would adopt the Valley road as a part of their line, provided they could get it on terms that would make it equal to the line by Brown's Ferry. Succeeding in purchasing the road, warehouses, depots, stations, shops, tools, &c., at \$75,000, to be paid in stock in the road, they felt that they had accomplished the conditions on which they could adopt that line, and accordingly did so; thereby removing all conflict of interest between roads that might have been rivals.

That portion of the road from Memphis to La Grange is to be placed immediately under contract. By the terms of subscription, the work cannot be commenced in Alabama until \$2,500,000 is subscribed. Up to the date of the report the amount already obtained was about \$2,300,000, leaving \$200,000 yet to be raised. As this balance will soon be secured, the whole road will soon be placed under contract.

In speaking of the progress which has been made in this great work the report says:

In any undertaking of the magnitude and importance of this, many difficulties must be encountered, requiring time and labor to overcome. The board feel that they have had their full share of these, and are happy in being able to congratulate themselves and the friends of the road, that most of these formidable, as some of them appeared to be, have been met and overcome. Such as still lie in the way, and such as will doubtless occur in the progress of the work, we hope may yield to the persuasions of truth, and the suggestions of an enlightened patriotism. The board, without arrogating to themselves any merit beyond the faithful discharge of their duty, feel that they may, without subjecting themselves to the charge of vanity, ask a review of the results and labors of this the first year of the corporate existence of the company. They think they may safely challenge a comparison with any similar work of equal extent in the country. In less than one year from the organization of the company, the share list amounts to about \$2,300,000; between five and six hundred miles of preliminary surveys have been made; about 60 or 80 miles of road have been located for construction, and about 50 will in a few days be

offered for letting. We repeat, that we do not allude to these things by way of self-commendation, but as a part of the history of the work proper to be communicated to the stockholders, and as an incentive to its friends to continued effort in behalf of a great and important enterprise.

Of the value and importance of this improvement it is not necessary that I should say anything to you who have demonstrated your appreciation of its utility by contributing to its construction. Its value and importance becomes more obvious as the country increases in population, in trade, and in commerce. As the vast resources of the country, penetrated by this road, become developed, the necessity for its construction will be imperative. The best interests of the whole country contiguous to the road demand its construction. The business wants and necessities of the country require that there shall be a highway of intercommunication between the great valley of the Mississippi and our southern and eastern Atlantic seaboard. This road furnishes such a communication and *must and will be made.*

Astronomical Clock.

We understand that a curious astronomical clock is at present being constructed in the vicinity of Liverpool by E. Henderson, LL. D. &c., from a series of very intricate calculus and complicated projections, which has engrossed a large share of his time and attention since 1844. This clock, when finished, will completely throw in the shade the celebrated "horologies" of antiquity and other clocks and planetaria of modern times. Hitherto such pieces of mechanism have exhibited very curious results, but they have been inaccurate in their motions, revolutions, and phenomena; so much so, that, at the end of a year or two, the machines gave out indications very wide from the truth, and required to be rectified. This, in a great measure, arose from the inaccuracy of the calculations, produced from a wrong basis, and such formula thrown into wheelwork. The present clock will entirely obviate such errors, and it is calculated so finely that in many of the motions by the wheelwork it will not err one minute in 1,000 years. These calculations we understand have received the unqualified approbation of the leading scientific men and astronomers of the day, both in Britain and foreign countries, where the calculator is known. The clock will show the minutes and hours of the day; the sun's place in the ecliptic; the day of the month, perpetually, and take leap year into account; the moon's age, place, and phases; the apparent diurnal revolution of the moon; the ebb and flow of the sea at any port in the world; the golden number, epact, solar cycle, Roman indication, Sunday letter, and Julian period; the mean time of the rising and setting of the sun on every day of the year, with its terms and fixed and moveable feasts. The day of the week will also be indicated, and the year will be registered for 10,000 years past or to come. The quickest moving wheel will revolve in one minute, the slowest in 10,000 years from the date. To show the very great accuracy of the motions in this complicated clock, a few of the periods may be noted—namely, the apparent diurnal revolution of the moon is accomplished in 24 hours 50 minutes 28 seconds and 379,888,268 decimals of a second, which makes an error of one minute too fast at the end of 1,470 years. The stars will make a revolution in 23 hours 56 minutes 4 seconds and 09,087,284 decimals of a second, which gives an error of one minute too slow at the termination of 5894 years. The synodical revolution of the moon is done by the wheels in 29 days 12 hours 44 minutes 2 seconds and 873,544,288 decimals of a second, and this will give an error of one minute fast in 1,167 years. The sidereal year is done in 365 days 6 hours, 9 minutes, 11 seconds, and 53,322,496 decimals of a second, which will make an error of one minute slow in 1,806 years. The other astronomical motions are too numerous for detail here, but they all bear the same stamp of accuracy.—The clock will go 100 years without requiring to be wound up, which is unequalled in horological science. The clock will contain about 170 wheels and pinions, and upwards of 300 distinct pieces. It has been constructed for, and space been given for the clock, at the Great Exhibition, and we under-

stand that it possible it will appear in that gorgeous edifice—*Liverpool Albion.*

From the St. Catharines Constitutional. The Queenston and Lewiston Suspension Bridge.

The opening of this bridge to the public took place on the 20th of March, 1851, and was observed as a holiday at the towns on each side of the frontier. Fifteen years ago the project of throwing a chain bridge across the river at this spot was first agitated—a charter was obtained—and a bank established at Queenston for the purpose of carrying out the scheme; but the bank and bubble burst together. It remained for a gentleman, then a stripling 11 years old, to achieve the honor of uniting with bands of iron the two most powerful nations of the globe, of the same origin, the same laws and the same language, by the construction of this bridge. The chief engineer, Capt. E. W. Serrell, is an Englishman by birth, and the son of a gentleman who has acquired an undying reputation by the erection of the far-famed Croton water works of New York.

Capt. Serrell was educated for his profession in the neighboring republic, and hastened home from the survey of the ship canal across the Isthmus of Panama, to compete, successfully, for the honor of constructing in the New World, the longest suspension bridge on the earth. To such of our readers as have it in their power to visit the beautiful Niagara river, and the scenery connected with it, so enriched by nature, and made so interesting by geological research and historic and sanguinary recollections, it may be unnecessary to enter into the minutiae of the construction of the bridge—but to those at a distance, who are debarred from seeing this new medium of communication thrown across the deepest and most rapid river in the world—hanging, like a cobweb of a thousand feet, between two romantic rocks, as high as the monument of London—to such, the details of its erection, and the difficulties and discouragements the engineer had to overcome, will prove interesting. The situation of the bridge is immediately under the spot where the battle of Queenston was fought on the 12th October, 1812. On the culminating point of these heights still rears its shattered head, the column erected to the gallant Brock, who fell on that occasion, beloved by his friends and respected by his enemies. Immediately north of the bridge, on the Canada side, is a large fragment of limestone, known as Father Hennipen's rock, which tradition tells us was the landing place of the first white navigator who attempted to ascend the river.

The tower on the British side is 12 feet high, and built of magnesian limestone from Thorold. The tower on the American side is of the same dimensions at the base, but four feet higher, to bring it to the level of that at Queenston, and is built of stone from Lockport. These elegant towers are erected on a rock of siliceous limestone about 22 feet thick, and it is into these solid rocks that the anchors are ingeniously and securely fixed, and from them that the whole weight of the bridge is suspended. There are of course two towers on each side of the river—the horizontal distance between which is 1040 feet, but the cables, from the dip required, are much longer. The bridge is supported by 10 cables—being five from each tower—each cable of 250 strands of No. 10 iron wire.—These 250 wires are served with annealed wire of about the same thickness—or to avoid technical terms, they are bound together by the wire twisted around them. The very ingenious instrument by which the wire was served round the cables, which are about 2 3/4 inches in diameter, was invented by Mr. T. M. Griffith, the assistant engineer of the work. The wire used in the construction of the cables was manufactured by Messrs. Cooper & Hewett, of New Jersey, and is made of the size of a crow quill; in length it is upwards of 1,200 feet.

The extreme length of the deck of the bridge is 849 feet, and 19 feet in width. It is 64 feet above the river, which is supposed at this point to be 240 feet. The iron rods or suspenders by which the bridge is attached to the cables are manufactured from Ulster iron, 3 8x3-4 of an inch in thickness, and vary in length from 4 to 52 feet. It is, we be-

lieve, the first time that iron wire has been made of such an enormous length as 1200 feet, and each strand of it was severely tested as to its strength before being put in the cables. By multiplying the length of each strand by the number composing the ten cables, we observe that there are nearly *twenty miles* of wire in the cables alone, the weight of which between the towers is about 75 tons. It is estimated that this gossamer bridge—for such from a bird's eye view it appears to be—is capable of sustaining at once a distributed weight of 250 tons.—Capt. Serrell has so constructed the iron saddle plates on the top of the towers that vacancies are left in each for additional strength for the passage of locomotive carriages.

In removing a large quantity of earth and rock on the west cliff, to obtain a secure anchorage on the siliceous limestone, the excavators arrived at the same stratum of rock that occurs under the great sheet of the Falls of Niagara—indicating thereby that the *dip* of the strata is towards Lake Erie, and affording, we suppose, ground work of curious speculation, as to the period when these agonized waters will wear and wend their troubled way to the Upper Lake. The Chief of the Chippewa Nation, when visiting the bridge last week, remarked that could the Indians who for many generations have made graves on the river's bank, rise at once from the dead, how great would be their amazement at a scene like this; and how greatly would it be increased could they see the "iron horse"—snorting and smoking with resistless force across the river *O-ni-wu-ga-rah*, (the Thunder of Waters.)

American Association for the Advancement of Science.

We copy the following from the proceedings of this association, which recently held its annual meeting at Cincinnati. The proceedings as reported for the newspapers of course present only a synopsis of the articles submitted.

LAKE SUPERIOR AND ITS AZOIC SYSTEM.

A paper on the "Azoic System of Lake Superior," by Messrs. Foster & Whitney, U. S. Geologists, in the Land District of Lake Superior, was read by Mr. Foster. It was of considerable length, and traced the general geological features of that interesting region.

The Azoic system, so called from the entire absence of organic remains, comprises the most ancient of the strata which forms the crust of the earth. They consist for the most part of gneiss, hornblende, chlorite, talcose and argillaceous slates, interstratified with beds of quartz, saccharoidal marble, and immense deposits of specular and magnetic oxide of iron. Most of these rocks appear to be of detrital origin, but to have been greatly transformed by long continued exposure to heat. They are sub-crystalline or compact in their structure, and rarely present unequivocal signs of stratification. They have been subject to the most violent dislocations. In one place the beds are vertical; in another, reversed; and in another, present a succession of folded axes.

Since the theory of metamorphism has been generally recognised, many of the rocks which were formerly regarded as igneous, are now referred to aqueous agency, and the transformation which they may have undergone, traced to the presence of erupted rocks. It is reasonable to suppose that there was a time in the history of our planet when its crust was subject to constantly recurring volcanic paroxysms, when mephitic vapors were escaping through extensive fissures communicating with the interior, and when the waters were in a heated condition and differed perhaps chemically from those of the existing oceans. Under such conditions, we ought not to look for any types of animal or vegetable life. [Mr. Foster here gave a general view of the origin of the Azoic rocks and the theories in relation thereto, which, not being of popular interest, I omit.]

These rocks are developed on an extensive scale both to the northern and southern margin of the Lake Superior basin. Commencing on the northern shore of the lake, we find a series of talcose and chlorite slates, with occasional beds of coarser

grits, in immediate contact with the granite and gneiss. They have been divided by Mr. Logan, the distinguished Provincial Geologist of Canada, into two groups—a division which has not been discovered on the southern shore—the lowest of which consists of slates partially chloritic and talcose, and occasionally holding a sufficient number of pebbles derived from the hypogene rocks, to constitute conglomerates.

Mr. Foster also sketched the characteristics of a remarkable iron mountain on Carp river, 1067 feet above the level of Lake Superior. It is a dome-shaped mass, almost entirely destitute of vegetation, and consists of alternate bands of pure specular and magnetic oxide of iron, from two to three lines in thickness. The iron is in many places pure; more so, probably, than in any other locality, and is accordingly of incalculable value.

Prof. Peirce read a paper by Mr. J. Chase, of Massachusetts, on

A CURIOUS FACT IN RELATION TO THE TURBINE WHEEL.

In computing the experiments which were made at Lowell in the present year, by Mr. Francis, it was found that when the gate was fully open, the quantity of water discharged through the guides was 71 per cent. of the theoretical discharge. The effect of the wheel during these experiments was 81 per cent. of the power expended. But when the gate was half open, the effect was 67 per cent. of the power, while the discharge through the guides was 11 per cent. more than the theoretical discharge. But when the opening of the gate was still further reduced to one quarter of the full opening, the effect was also reduced to 45 per cent. of the power; while the discharging velocity was raised to 49 per cent. more than that given by theory.

In the first of these experiments, the fall was 12.9 feet; in the second, 13.28 feet; and in the third, 13.43 feet, and the quantity of water used upon the wheel with the full gate was 135 cubic feet per second.

Prof. Peirce remarked that if, in the last of these experiments, the wheel was removed and the water suffered to run through the guides without obstruction, the head which would be required to give a velocity of discharge equal to that actually observed would be about 37 feet. The effect of the interposition of the wheel upon the discharge is, therefore, as much as 24 feet, which is about seven-tenths of an atmosphere.

RESULTS OF AN EXPLORATION OF THE CORAL REEFS OF FLORIDA—IN CONNECTION WITH THE U. STATES COAST SURVEY.

It has recently been my good fortune, said Prof. Agassiz, to have an opportunity of exploring the Reefs of Florida, under the auspices of the United States Coast Survey, with a view of investigating the character of the coast, and the structure of its extensive range of corals.

In order to point out the peculiar characteristics of the Reef of Florida, it would be necessary to speak of the reefs of other regions, and particularly those of the Pacific. These are divided into three classes, viz: the Fringing Reef, the Barrier Reef, and Atolls or Lagoons—islands. The characters of each of these divisions fully justify such a classification. But in the case of the Florida Reef, the coral formations extend in several parallel ridges between the main land of Florida and the Gulf-stream, in a westerly course; diverging more and more from the main land, until, near Cape Sable, they are forty miles distant; stretching like a broad arm into the Gulf of Mexico, and extending in a southerly direction into the rapid current of the Gulf stream. The Pacific ocean reefs, on the contrary, grow in the open sea, and differ essentially in character from those of Florida.

The principal reef of diving corals in Florida occurs between the main Keys and the rapid sea-current which runs between Cuba and the islands encircling the main land of Florida, but other coral deposits of a peculiar nature are found to exist around, upon and between the Keys and the main land. The combined action of the tides and currents produce eddies in which fine sand and even

mud is deposited around the reefs. These materials Prof. Agassiz considers to be minute fragments or an impalpable power, held in suspension by the water, which is rendered milky white by their presence. At a short distance beyond, the water becomes clear.

The three classes of Coral Reefs distinguishable elsewhere, were explained by Prof. A. with the aid of blackboard diagrams. First the 'fringing reefs,' secondly the 'barrier reefs,' which form rising walls at some distance from the main land, between which and the land a broad and safe channel frequently exists; and thirdly, the 'lagoons,' or islands, which present circular walls, sometimes continuous, and sometimes broken up. The lagoons often constitute accessible and safe harbors. These encircling reefs are formed in a similar manner to the barrier reefs, by the growth of coral from an unknown depth to the surface. The formation of the two latter classes of reefs has been ascribed to the subsidence of the bottom, combined with the upward growth of the corals.

The range of living, reef building corals has been ascertained to be limited between a depth of sixteen to twenty fathoms, and a few inches below low water mark—for unless constantly submerged, they die; but they are frequently found dead at enormous depths, forming walls of coral rocks very precipitous.

In Florida we have no barren reef, but a series of concentric reef, enclosing parallel channels, formed without the slightest indication of submergence or upheaval. There are the Outer Reef, the Florida Keys and the Shore Bluffs, with the main channel south of the Keys; the mud flats, between the Keys and the main land, with a slight depth of water, often not more than two feet; and flat, low islands, on which there is an extensive growth of mangroves. The Keys rise from ten to twelve, seldom thirteen feet above the level of the ocean. Near the shore, there are mud and coral sand accumulations, which are evidently the result of the decomposition of the solid parts of the corals themselves.

Beyond the Keys, the channel is from five to six and seldom more fathoms deep. Its boundaries are frequently indicated by small islands or shoals, some of which form very dangerous reefs, such as Carisford reef. It is within this channel that the wreckers take up their abode, being safely sheltered from the strong gales which blow frequently outside, behind the walls of the Outer Reef and the bar islands rising for a few feet above the level of the ocean. No coast, said Prof. A., is more secure for safe navigation than this, if it be properly understood; every twenty miles there is the broadest and safest harbor to run into. But at present, it is perhaps more dangerous to know of these harbors, than to be ignorant of their existence; for the lights and signals along the shore are located without reference to using these places of refuge.

Adverting to the geological and zoological character of the general reef, the Professor remarked that it was important to ascertain whether, as reported by some, the reef consisted of dead corals only; or, as others maintained, was composed of living corals, still growing and extending; or whether, as it had been asserted by others, it consisted only of oolitic rocks, containing no indications of corals whatever.

All these arguments are found to be consistent, with the qualification that the three classes occupy different localities. On the Outer Reef, from Cape Florida to Key West, in from ten to twelve fathoms up to the surface of the water, living corals are found; greatly differing, however, in constitution—the *Madrepores* (*Madrepora palmata*) especially, rising to the very surface, while the commonly so called Brain coral (*Moandrina*) occurs in the lower, and the *Astrea* still lower levels. Specimens of the different species were exhibited. The *Madrepora palmata* form extensive fields of powerful stems, branching and expanding near the surface into large flats, resting upon strong bases, and presenting the appearance of leaves spread out.—The Professor characterised the fields as a wonderful spectacle. This extensive growth does not occur, however, further than two or three fathoms below the surface. Lower down a number of other species are found,

The Shipping of America.

The increase in the number of sailing vessels of all descriptions belonging to the United States, is one of the most remarkable traits in the current history of the world. The following tabular statement is from the report of the Secretary of the Treasury, and affords at a glance a view of the regular augmentation of our tonnage, from 1815 to 1850. It speaks more emphatically than any enlarged description:

Years.	Total tonnage.	Years.	Total tonnage.
1815.....	1,368,000	1833.....	1,606,000
1816.....	1,372,000	1834.....	1,758,000
1817.....	1,399,000	1835.....	1,824,000
1818.....	1,225,000	1836.....	1,882,000
1819.....	1,260,000	1837.....	1,896,000
1820.....	1,280,000	1838.....	1,995,000
1821.....	1,298,000	1839.....	2,096,000
1822.....	1,324,000	1840.....	2,180,000
1823.....	1,336,000	1841.....	2,130,000
1824.....	1,389,000	1842.....	2,090,000
1825.....	1,423,000	1843.....	2,158,000
1826.....	1,534,000	1844.....	2,280,000
1827.....	1,620,000	1845.....	2,417,000
1828.....	1,741,000	1846.....	2,562,000
1829.....	1,260,000	1847.....	2,839,000
1830.....	1,191,000	1848.....	3,154,000
1831.....	1,267,000	1849.....	3,334,000
1832.....	1,493,000	1850.....	3,535,000

This comprises the tonnage on the foreign trade, the coasting trade, the lakes, the rivers, and the canals. It is a little larger than that of Britain—whose mercantile fleet, we suppose, is greater than that of all Europe besides. Here is a great and an astonishing fact. The wonder would not be so strange if we had no broad, fertile territory on the land. Our luxuriant fields, our cheerful valleys and hills, invite us yearly from the water, but our fondness for navigation, our intelligence that sees where profit can be gained on distant shores, and our spirit of activity and enterprise, carry us far away over the ocean, and on the lakes, and up and down our magnificent rivers, which are indeed "inland seas." It would be equally curious and instructive to go into an investigation of what gave us this aptitude for navigation. There are many concurrent causes no doubt. And one of them may be seen in the early colonial laws of England, discouraging, and, in many cases, actually prohibiting manufactures in the early settlements. The colonists were confined to agriculture. But what should they do with their surplus productions so abundant from a virgin soil? Evidently they must trade them away—and hence they embark in commerce to some distant shore. The other colonies—the West Indies and the "mother country"—were the first resort. The fisheries were not, like manufactures, excluded from them. Hence the early enterprise after the cod, the mackerel, and the whale. Little did England then suppose that the spirit she was repressing in one direction, would break out so vigorously in another, and that while she was keeping down a rival for her manufactures, she was raising up one for a branch of industry far more dear to her, and which might otherwise have been peculiarly her own. But for that unjust and short-sighted policy, England might still have been what she so long boasted—the mistress of the seas.

Doubtless there were other causes for our navigation tendencies. The limited and comparatively poor territory of New England, had an influence. At first it yielded sufficiently well, but this did not last long. Their boundaries also were comparatively narrow. On the north and west were the French and Indians; on the south and west were the Dutch and Indians; even after New York became a British colony, it was nevertheless not a puritan colony, and hence they hung aloof, and kept close together by themselves. The water was then their resource.

The speed of American vessels wholly unprecedented, is no less surprising than their numbers. Our river steamers, for several years, have far surpassed all others—24 miles an hour having been attained some time since. Our ocean sailing vessels have been unrivalled, and they are yearly astonishing the world with new wonders—two have recently arrived in London from Hong Kong in 95 days; and two others have recently crossed the Atlantic in a little more than 12 days. We need

say nothing of our ocean steamers—the lines to Europe, to California and our southern coasts, having sprung into existence like magic, and on Friday week the steamer Pacific having completed her voyage from Liverpool to New York in 9 days and 20 hours; all these feats by steam and by sails on the rivers and on the ocean, fairly surpassing those of other nations. No wonder that the Emperor of Russia should have sent over and had a vessel built and equipped by ourselves as a model war steamer.

Our present prospects foretell a most unparalleled and unexampled increase in our navigation. This arises from the sudden and extended settlements on our Pacific coast—settlements from their peculiar nature eminently favorable to commerce—not in creating the great commercial streams by way of Cape Horn and the Isthmus, but in whitening the entire Pacific with our sails. Our future growth in tonnage will entirely outstrip every thing in the past; the world will look on and wonder, and what the ultimate consequences may be, and how it will influence the future destinies of mankind, is known only to Him who has devised in infinite wisdom, what is to be the final developments of the human family.

The many hundreds of sailing vessels trading to California have been generally known. But we were not prepared to hear of so large a steam fleet belonging permanently to that State, and plying on the rivers, bays and sea coast of the Pacific. From a recent reliable account, in which the name and tonnage of each vessel is given, we form the following as a summary:

	No. of vessels.	Tonnage.	Average tonnage.
Sea steamers.....	22	14,193	645
Inland steamers....	46	4,847	105
Total.....	68	19,045	750

Here is a very substantial evidence of the march of civilization to the broad Pacific ocean. Its increase will be rapid, and its extent commensurate with those almost interminable coasts. "Westward the star of empire takes its way," and another fifty years will work almost inconceivable changes. At the end of that period our population will number more than a hundred millions, and the Pacific ocean, with the countries on its extended shores, and the islands on its bosom, will show a commerce far greater than that on the Atlantic now.

Hoosic Tunnel.

Memorial of the Western Railroad Corporation.—The directors of the Western railroad corporation have addressed a memorial to the Legislature against the proposed loan of the credit of the State, to the amount of two millions of dollars, to the Troy and Greenfield railroad, for the construction of the Hoosic tunnel. They say that they did not appear as remonstrants before the committee, at the time of the hearing of the petitioners for the proposed loan, for the reason, that having in 1848 fully set forth their reasons for appearing against the petitioners for a charter, which reasons the Legislature then deemed insufficient, they did not deem it proper for them again to appear as remonstrants, when the same parties applied for aid to the commonwealth, to enable them to fulfil the objects contemplated in their charter. They are unwilling, however, that this failure to appear as remonstrants should be construed as an indication of an opinion on their part that the construction of the Troy and Greenfield railroad will not be productive of very serious injury to the Western railroad. The great object of the construction of the Western railroad was to secure the through business from Boston to Albany, it being foreseen at the outset that the local business of the western portion of the line never could remunerate the stockholders. Results have shown that the local business west of Springfield never has paid the current expenses of the road. The directors are convinced that the through business in freight and passengers, with that portion of the local business which would be competed for, is essential to the support of this portion of the Western railroad. They have no hesitation in saying that in their opinion the Western railroad has the capacity to transact, in connection with any probable amount of local busi-

ness it can ever receive, a through business more than ten times larger in amount than it has ever been called upon to perform.

The memorialists state that of the large amount of freight arriving at tide water at Albany and comparatively a small amount seeks the east by railroad. Of 2,300,000 tons arriving at these points last year, the Western railroad brought to Boston only 60,000 tons. The great bulk of this freight has always found, and always will find, an outlet by the way of the Hudson river, at a less price than it can be carried by railroad. It arrives at tide water during the season of navigation, and without being unladen, is towed down the river to New York, and from that port carried by coasters to New England, with but little expense for freight. The return freight on the railroad from Boston to Albany is comparatively small in amount.

In view of these facts, the memorialists contend that the impression entertained by persons that the construction of a railroad with easier grades and a shorter distance of ten miles than is afforded by the Western railroad between the Hudson river and Boston, would largely increase the business between these points, is an unfounded impression. Two avenues by railroad are now open, the Western and the Ogdensburg railroad. A third will soon be opened from the Erie railroad, by way of Fishkill, Hartford and Providence to Boston. The Western road alone is declared to be quite adequate to the present or prospective demand many times multiplied. With all its through and local business, without compensation, the Western railroad has not yet been able to pay its original stockholders five per cent on the investments, and the memorialists are of opinion that it will have the effect to neutralize any increased profits arising from any probable increase of through or local business on the Western road for many years to come, and that if it does not have more serious effect on the income of the road, the expectations of many sagacious business men will prove to be unfounded.—*Traveller.*

Electro-Magnetic Locomotive.

Prof. Page has communicated to the National Intelligencer an interesting statement of his experiment with an electro-magnetic locomotive on the railroad between Washington and Bladensburg.—He says:—

The locomotive, with the battery fully charged, weighs 10½ tons. With the seven passengers taken on the trip to and from Bladensburg the weight was 11 tons. Under the most favorable arrangements, eight pounds are required to start a ton on a perfectly level rail, and seven pounds will barely keep a ton in motion. Ordinarily, upon railroads, the allowance is ten pounds to a ton, but this applies only to cars unincumbered by machinery.—The friction locomotive machinery renders its draught far greater, and can only be accurately ascertained by experiment in each case.

The magnetic locomotive, the first of its kind ever made, is imperfect, and, from the newness and stiffness of all the work, it runs exceedingly hard. We will take 200 pounds, which is below the actual power required to keep it in motion on a level portion of the road. A horse power upon the usual estimate is 150 pounds 2½ miles an hour or 375 pounds 1 mile an hour. The speed of the magnetic locomotive is, we will say, 15 miles an hour on a level road (it has in fact made more,) and its traction 200 pounds. We have then, 375 pounds 1 mile an hour for one horse, and 200 pounds 15 miles an hour for the locomotive, which gives eight horse power. But the engine has more than this. It has greater power at a slow speed, and must have, by all reasonable estimates, twelve horse power; which, as I said before, is about one half its proper capacity. One of the most serious defects arises from a want of insulation in the helices.

After the engine was placed on the road it was found necessary to throw out of action five of the helices, and these at the most important point in the stroke. The difficulty could not be remedied without taking both engines entirely out—an undertaking for which I had neither the time nor means, as the track with which we are now accommodated is soon to be filled up for the purposes

of the railroad company. Another serious difficulty encountered, was the breaking of the porous cells in the battery, causing a mixture of the two acids and the interception of a large portion of the power. I had great difficulty in procuring suitable porous cells, and the manufacture of such as I needed was, after great expense, given up by two of the best pottery establishment in the country as a thing impracticable.

It was however accomplished through the ingenuity of Mr. Ari David, my engineer, but they were made of a weak clay, and have now, from frequent use, becomes so much improved as to break from the slightest causes. Before we started two of them broke, and the defect was only partially repaired. Not far from Bladensburg two more gave way, and detracted at once greatly from our working power. On our return, about two miles from Bladensburg, three more gave way, and we were reduced to at least one-half our power.

The running time from Washington to Bladensburg was thirty-nine minutes. We were stopped on the way five times, or we should have probably made the run in less than thirty minutes. Going and coming there were seven stops and three delays—that is, the engine was backed three times but without entirely losing headway. It is a very important and interesting feature of the engine, which I demonstrated some years since, that the reversing power is greater than the propelling power; it is nearly twice as great. When the engine is reversed, the magnetic electric induction is in favor of the battery current, and augments its effects. The defect of the cells is easily remedied. The trouble growing out of the oscillating motion of the car can all be obviated by using rotary instead of reciprocating engines. The greatest speed attained on our last trip was about nineteen miles an hour, and about seven more than in any former experiment.

Wealth of Showmen.

Two million six hundred and seventy thousand dollars, it is said, have been made by showmen in the last ten years, making an average for each of one hundred and seventy thousand dollars. The following is a list of what each man has made, commencing with P. T. Barnum, the richest showman in the world, he having made in the last eight years over \$800,000; Moses Kimball, of the Boston Museum, \$300,000; Edwin Forest, the tragedian, \$350,000; Burton, the actor, \$125,000; Blitz, the magician, T. S. Hamlin, of the Bowery Theatre, of New York, \$70,000; General Welch, the great Circus man, \$60,000; Wyman, the prince of magicians and necromancers, \$25,000; General Tom Thumb, Barnum's great dwarf, J. E. Owens, the comedian and proprietor of the Baltimore Museum, \$35,000; Herr Alexander, the juggler and artist, \$25,000; Mons. Adrian, the French magician, \$20,000; Banvard, the original proprietor of the Mississippi Panorama, \$75,000; W. Niblo, the celebrated garden proprietor of New York, is worth \$150,000; and last, though not least, the artist, O. A. Bullard, proprietor of the Panorama of New York City, who, although not yet ranking with some of the above in point of profits, is in a fair way to be worth \$50,000, as his Panorama is fast becoming one of the most popular works of the kind ever exhibited to an American audience.

English Railroads.

The leading article in the Edinburgh Review for April, on the subject of the progress of England during the first half of the present century, states that, whilst a quarter of a century ago travelling by railroad was almost unknown, the returns for 1849 show the following results:

	Passengers.	Receipts.
First class cars.....	7,292,811	£1,927,768
Second class.....	23,521,650	2,530,968
Third class.....	32,890,323	2,816,476

Thus it appears that the poorer classes of Eng-

land travelled by railway in the year 1849, to the number of nearly 33,000,000, and afforded to spend by so doing more than £1,750,000. They outnumbered the middle classes in the proportion of four to three, and the wealthier classes in the proportion of four and a half to one. It may be added that wherever, in the United States, the rates of travel are cheap and adapted to the circumstances of the "million," there is a corresponding increase in the number of passengers.

New York and New Haven Railroad.

The following is an abstract of the late annual report of this company:—

Total amount expended, including \$160,000 Harlem preferred stock, depots and depot lands, and properties of all kinds.....	\$3,700,084 68
This amount has been provided from stock.....	\$2,336,384 88
Bonds.....	1,141,000 00
Floating debt.....	222,699 80
	3,700,084 68

The transportation service from 31st January, 1850, to 31st March, '51, (14 months) has been—

Passenger trains.....	miles 349,576
Freight trains.....	" 49,217
Gravel and other trains.....	" 8,272

Total.....miles 407,065

The number of passengers moved over the road is 810,219, of which 42,138 were between New York and Boston. The way passengers were..... 472,976
Through passengers..... 78,349
Commutation passengers..... 57,553

The gross receipts have been from—

Passengers.....	\$604,965 97
Commutation.....	12,641 12
Freight since Nov., principally.....	71,265 12
Mail and messages.....	12,685 61

Total for 14 months.....\$701,538 62

CURRENT CHARGES.

Transportation, &c....	\$112,701 56
Repairing road bridges &c.....	37,946 00
Repairing equipage..	35,038 26
Wood, oil, &c.....	82,867 92
Haulage in N. York..	47,426 00
	\$315,979 96

Excess over charges.....	\$385,778 55
Paid Harlem railroad.....	\$53,252 05
Steamboat.....	25,901 35
	79,153 40

Balance, net earnings.....	\$306,325 26
Balance on hand, 31st January, 1851.....	1,361 35
Dividend on Harlem preferred stock	12,800 00

Total for interest and dividends.....	\$320,586 61
Interest.....	\$59,465 00
Taxes.....	7,555 80
Hartford and New Haven co.....	23,333 34
Dividends, Aug. and Feb.....	174,930 00
	265,264 14

Surplus over all.....\$55,302 47

The number of passengers transported over the Harlem road was 560,206.

St. Lawrence and Atlantic Railroad.

We learn from Melbourne that the works of the railway are proceeding with the greatest spirit.—The ground is broken along the whole section extending to Sherbrooke, and a large number of men employed in cutting and embanking. There is a great demand for laborers, and the contractors are paying four shillings a day in cash for steady hands.—*Montreal Herald*, 8th.

Baltimore and Ohio Railroad.

The following are memoranda of the business upon the Baltimore and Ohio railroad, for the month of April, 1851:

	Passengers.	Freight.
Main Stem.....	\$29,503 96	\$71,045 03
Washington Branch....	20,675 60	4,093 24
	\$50,179 56	\$75,128 27

Making an aggregate of \$100,538 99 on the Main Stem, and \$24,768 84 on the Washington Branch—the total being \$125,307 83.

The above, compared with the corresponding month of last year, shows a decrease of \$4,831 67, being \$3,713 80 on the Main Stem, and \$1,117 87 on the Washington Branch.

Railroad to Chicago.

The Chicago Democrat confidently predicts the connection of Detroit with Chicago by railroad, by the first day of October next, and proceeds to say:

This week and next, three lines of survey will be completed and sent to New York, of the route from Chicago to the State line. No one can know anything of these lines until the board at New York makes its decision. When that is made, the Michigan Central railroad completes the road at the estimate of the Illinois Central's engineer. On the first of October next, the Illinois Central pays the Michigan Central the cost of the road in its own bonds, the bonds bearing interest from October first, next. Thus the Illinois Central completes so much without the use of one dollar in money, and leaves the road equally free to the Michigan Central and the Michigan Southern.—And, what is better, the State gets seven per cent. of the gross earnings of the road.

Maine.

Saco River Railroad.—The people of Saco and Biddeford are taking measures for the construction of a railroad up the Saco river. A meeting has been recently held in Saco to promote this object, at which R. M. Chapman, Isaac Usher, D. E. Somes and Jarvis Williams were chosen a committee to employ an engineer to make a preliminary survey of the route, and to report on the feasibility of the road. Messrs. Eastman of Saco, Jamieson of Cornish, and Dr. I. R. Bradley of Fryburg, were chosen a committee to procure a charter, and it was also agreed that those who subscribe for the preliminary survey, shall have the sum subscribed allowed to them, provided they take stock.

Saco and Biddeford united now make a large town, and bid fair to become an extensive manufacturing city; and the above road would greatly accelerate their growth, by bringing them into intimate connection with a fertile and highly cultivated region.

New York.

Rochester and Syracuse Railroad.—The directors of this road met the directors of the Oswego and Syracuse road, in this city last week, and made arrangements with the latter for the use of their embankment for 2½ miles from this city.

The Rochester and Syracuse road is now located. The distance, between the two cities, by the new route, is 80 miles, 700 feet—which is 24 miles less than by the Auburn route. This distance will be accomplished in 2½ hours, as the grades are very easy. The whole work will be put under contract in the course of two weeks.

This work is one of great importance to Syracuse. It will open to this city a new and fertile region, with which it now communicates only by canal. A large accession of business to our merchants may confidently be anticipated from that section.—*Syracuse Star*.

Attica and Hornellsville Railroad.—By virtue of a clause in their charter, the Attica and Hornellsville railroad have changed their title to the "Buffalo and New York City Railroad." Commencing at Attica, the road passes through the towns of Alexander and Bethany, in Genesee county, Middlebury, Warsaw, Gainesville, Castile and Genesee Falls, in Wyoming, Portage and Nunda, in Livingston, Grove and Burns in Allegany, to Hornellsville. It is 58½ miles in length, and has an average grade of 45 feet to the mile. The road crosses the Genesee river less than half a mile below the village of Portage, at right angles—there being straight lines on both sides.

The river is to be passed by a massive trestle bridge, built upon piers of cut stone, elevated above high water mark. From the bed of the river—which is solid rock—the structure rises 230 ft to the rail, and is to be built as strongly as wood and iron can make it—it being estimated that it will require nearly 2,000,000 of feet of timber to complete it. The span of the river is 500 feet, and the bridge is to be extended a considerable distance on both sides, instead of embanking.

The project of throwing over, at some future day, a tubular bridge, like that over the Menai straits, has been discussed. The one built upon the plan adopted—which is to be covered with a metal roof, and otherwise protected from the weather, will last for a long number of years. The whole work has been sublet, and 2500 men are now at work upon the different sections. The Buffalo people hope to head off Dunkirk by the construction of this road.—*Rochester Democrat.*

The Valley Railroad.—The Dansville Herald of the 30th ult., states that the surveying party had reached within three miles of that village. They report that the route was found more favorable than was anticipated. For a distance of 35 miles from Rochester, an average grade of only two feet to the mile was found, and that the distance will be but 44 miles to that place, instead of 49 miles, as was estimated—being a saving of five miles.—They say a more favorable line for a railroad was never surveyed.

Indiana.

Laurenceburgh and Upper Mississippi Railroad.—This company have just completed the purchase of iron, sufficient to lay about 20 miles of track, with the necessary equipment for an equal extent of line. The object of this road, as our readers are aware, is to open a railway communication between Cincinnati and Indianapolis, by Laurenceburgh, on the bend of the Ohio. The line from Laurenceburgh to Cincinnati is to be built by the Cincinnati and St. Louis railroad. The Laurenceburgh and Upper Mississippi railroad company are vigorously pushing forward the grading of their line to Shelbyville, a distance of 63 miles from the Ohio river. When this point shall be reached, it is in contemplation to extend the road to Indianapolis, 26 miles further.

East Tennessee and Georgia Railroad.

This road is completed for a distance of some thing over twenty miles, and two splendid passenger cars are making daily trips over it. There is no doubt entertained that the cars will be running to the Hiwassee river by the first of July, and to Blair's Ferry by the first of March next.—Mr. Prichard, the energetic and skilful chief engineer of the company, is winning for himself "golden opinions" by the manner in which the road is being constructed.—*Knoxville Register.*

Indiana.

Extension of the New Albany and Salem Railroad.—The New Albany Bulletin says:—

It is the intention of the directors to extend this road through the State to Lake Michigan, and thence around to Chicago. The subscriptions of stock have been going on steadily with a view of carrying out that design, and there is a strong probability of securing, during the present year, means sufficient to carry out the whole enterprise.

An important arrangement has just been made with the Michigan Central railroad, which will hasten the completion of the project. That company has subscribed for 10,000 shares of the New Albany and Salem railroad, to assist in extending the road north, and in addition, to make that part of it which lies between Michigan City and Chicago.

It is the intention of our company, we learn, to put their engineers upon the road at once, with the view of locating the road and putting the work under contract as soon as possible.

The contractors on the line between Bedford and Gosport are getting a heavy force on the work, and the prospect is fair for a large amount of their contracts being finished the present year. Iron has been purchased to complete the road to Bedford, which, when laid, will make 70 miles. This part of the road is now ready for the superstructure, and the bridge over White river will be completed by the time the cars can reach that point.

Pennsylvania.

New Hope, Doylestown, and Norristown Railroad.—The charter for constructing this road having been extended by the Legislature of this State, a meeting of the stockholders was held on the 1st inst., and the following officers elected:

President, Lewis S. Coryell; Secretary and Treasurer, William Carr, Esq.; Managers, Joseph Fornance and G. R. Fox, Esq., Norristown; John B. Pugh, Major Brock and John S. Bryan, Doylestown; Wm. Stabeley, Buckingham, and Simon G. Gore and Daniel Perry, New Hope.

This road is intended to form part of a line to New York by the Philadelphia and Norristown road, thence over the New Hope and Doylestown road to New Hope and thence to Somerville, from whence to New York a road is already in operation. The work is in the hands of efficient men and will, when completed, add materially to the travel and income upon the Norristown railroad.

Internal Improvements in Virginia.

The whole amount appropriated by this State at the last session of its Legislature for works of internal improvement, was \$1,708,606 18. Of this sum, \$990,000 were for railroads, viz:

South Side railroad.....	\$480,000
Richmond and Danville railroad.....	300,000
Roanoke Valley railroad.....	150,000
Orange and Alexandria railroad.....	60,000

\$990,000

The balance was chiefly for turnpikes. Seventy five thousand dollars each were appropriated to the Rivanna Navigation, and the Guyandotte Navigation Companies.

The policy of Virginia in carrying out her public works is peculiar. That State becomes a joint subscriber with individuals to turnpike and to river improvement companies, as well as to railroads, in proportion of from two to three-fifths of their capital stock. Whatever may be the result of this system, it is well calculated to promote the rapid progress of railroads. The bonds issued in payment of the State subscription sell at a premium, and are generally reserved to the purchase of iron and equipment. On most of the routes, the amount required from individuals, can be raised without much difficulty. Many of the contractors on roads

take a portion of stock in payment, reducing still more the proportion to be furnished on private account.

As far as we have been able to judge, the monies expended for railroads under the above system, have been economically laid out; much more so, we believe, than has been the case in other States, where a similar policy has been pursued. This system is creating a large public debt for Virginia, but the roads, which it will be the means of constructing, will add in a vastly greater ratio to the ability of her people to pay. Virginia is vastly rich in all the materials of wealth, and all that is now wanting to make them available, is to open for them an outlet to a market.

Pennsylvania.

The Lackawanna and Western railroad is the present corporate name of what was formerly the Leggett's Gap Railroad, extending from Scranton, Pennsylvania, to Great Bend, on the Erie railroad. This road is to be completed in September, when Central and Western New York will be brought into direct communication with the Lackawanna coal fields, and receive their supplies of fuel from this source.

Railroad Meeting in Beaver County.—The Beaver Argus publishes a report of a meeting of the citizens of Beaver County, held in the Bridgewater House, on the 20th ult. Archibald Robertson, Esq., was called to the chair, and Dr. T. J. Chandler, and David Brown, Esq., appointed secretaries. A preamble and resolutions were adopted in favor of "a communication by railroad between the Ohio river and Lake Erie within the borders of Pennsylvania," and expressing the opinion that the matter is of "great importance to the citizens of Beaver county, as the valleys of Beaver, Shenango, and Conneaut present the most advantageous route by which this object can be accomplished, being shorter and more easy of construction than any other route between the lakes and the river; and also admitting of more uniform and easy grades than can possibly be obtained by any other route."

In this view of the matter, it was determined to assist the Pittsburgh and Erie company in building the road. A committee was appointed to confer with the directors at their meeting in Erie on the 1st instant "as to the propriety of putting under contract that part of said road between New Castle and the Ohio river, at the earliest day practicable."

The same committee was empowered to appoint another committee to obtain releases on the route through Beaver county.

Railroad Charters in Wisconsin.

During the last session of the Legislature, says the Prairie du Chien Patriot, about a dozen railroad company charters were granted. Among the number we mention the following:—The Manitowoc and Mississippi railroad; the Green Bay, Milwaukee and Chicago railroad; Dodgeville and Potosi; Madison and Swan Lake; Fort Winnebago, Baraboo Valley, and Minesota. The charter of the Rock River Valley Union railroad company was amended so as to construct a railroad to Lake Superior, and permit the Chicago and Galena railroad to become part owners and lessees of said road. The plank road charters granted, and the State roads authorized, were innumerable. The length of all these railroads, if completed as contemplated in the charter, will not be less than one thousand miles! at a cost of \$30,000,000.

To Contractors.

Engineer's Office Central Ohio R. R. }
Zanesville, May 7, 1851. }

SEALED Proposals will be received at this office until the 1st of June next, for laying the Track upon the whole line, including sidings—about 63 miles—west of Zanesville.

Plans and Specifications will be exhibited after the 20th day of May.

By order of the Board.

ROBERT MAC LEOD,
3t Chief Engineer.

CHILLED TIRES FOR LOCOMOTIVE ENGINES. To Railroad Companies.

THE Undersigned, Assignee of Letters Patent, respectfully invites the attention of Railroad Companies to the **CHILLED TIRES** for **LOCOMOTIVE ENGINES**, which he offers for sale.

These Tires were first introduced by Messrs. Perkins & McMahon, upon the Baltimore and Ohio Railroad, in 1843, where, after a long and severe trial, they were generally adopted, on both passenger and freight engines, and now have entirely superseded Wrought Tires on that road, on which are many engines of the heaviest class, which ascend grades of *eighty-five feet per mile*, taking with them *one hundred and twelve tons*, exclusive of cars. This performance shows in some measure the *adhesive character and strength* of the Tire.

During a service of seven years, these Tires have very much exceeded in *durability* those of wrought iron, while their first cost, and expense of repairs, is more than *fifty per cent. less*. They also retain more equally their *diameter and proper form of tread*, which is a point of much value in engines with *coupled wheels*.

It is believed these Tires are peculiarly well adapted to freight engines, as the objection to *coupling* the wheels of locomotives is the *increased friction*, arising principally from the *unequal wear* of wrought tires; and hence most of the freight engines where wrought tires are used, have but *four wheels as drivers*, with frequently a weight of *sixteen tons*, or more; upon them which may be of no disadvantage to the engine, although its effect upon the *track* is like a car with *sixteen tons* upon *four wheels*, and it is presumed no one would permit cars so heavily loaded to pass over their road.

As Chilled Tires wear more *uniformly* than those of wrought iron, there can be no doubt when these are used, that the weight necessary for *adhesion* may be distributed upon more *driving wheels*, without any material disadvantage to the engine, and thus placing *less weight* upon a *single point*, would relieve the *track*, and secure, to a great extent, the object sought to be gained by the plan so frequently proposed, of using *light engines*, which would bring with it the necessity of *increasing* the number of trains and train hands.

The complete success of Chilled Tires upon the Baltimore and Ohio road for the last seven years, and upon other roads for a more subsequent period, is a strong proof of their *practical character*, while their *cheapness and durability*, it is believed, recommend their trial by every railroad company.

It may be thought by some that the *whole wheel* for *strength*, would be preferable to wheels with tires, but experience shows the latter to be a much *stronger and more durable wheel*, on account of its freedom from *tension*, which is never the case with a *whole wheel*. That *TENSION* has much to do with the breaking of wheels and tires, may be inferred from the fact, that a set of *chilled tires*, five feet diameter, on a first class passenger engine, have been in constant service during the past winter, on one of our Eastern roads, and have withstood the severities of the season, where *whole wheels and wrought tires* have broken. And it may be proper to remark, that wherever chilled tires have been introduced, *whole wheels as drivers* are invariably abandoned, they being far more expensive to maintain, as there is a *crank* to form as often as a wheel is renewed, which is *not* the case on the renewal of a tire.

The peculiar manner of *fastening* these tires to the wheel without *shrink*, applies equally well to wrought tires, and is of much importance where they are used, as it secures them against the *TENSION* or *STRAIN* they receive by the present plan of *shrinking* them to the wheels, which undoubtedly is the cause of wrought tires breaking so frequently, particularly in cold weather, which produces a greater *contraction* of the tire, thereby increasing the *strain*. This plan makes the tire perfectly secure upon the wheel, and is attended with *less expense*, as will be seen by the following testimonials, which are respectfully submitted.

Lowell, March, 1851. L. B. TYNG.

TESTIMONIALS.

Baltimore and Ohio R. R. Office, }
Jan 2, 1850. }

Mr. L. B. TYNG, Lowell, Mass.—Sir: Your favor of the 26th ult. is before me, asking my opinion of the Chilled Cast Iron Tires, of Messrs. Perkins & McMahon, patentees. I do not hesitate to speak favorably of them, nor to say that I would give them the preference over wrought iron tires, whenever the adhesive tenacity of the latter to the rails is not all called for, there being somewhat less adhesion to the chilled wheel.

This can, however, scarcely be called a practical point, as nearly all of the Passenger Engines now in use have a *surplus of adhesion*, and nearly all Freight Engines being provided with the sand box, for emergencies arising from sharp curves, heavy grades or wet rails.

The Chilled Tire is very much cheaper in first cost, will last longer, and offers a facility for putting it on the wheel, rendering comparison with the wrought iron tire an absurdity—it not being necessary even to take the wheels from the machine for the purpose. Many of them are in successful use on this road, and I consider its curves and other peculiarities the most severe of all existing tests. One set of five feet in diameter, has run 50,000 miles under one of our Passenger Engines, and will to all appearance, run as many more; and, in the mean time, they have not cost a dollar for repairs or adjustment.

It may be suggested that they might not stand a Northern frost. This is possible; but I believe otherwise, as the weather here is occasionally as severe as in Boston, and if I had charge of a northern road, after the experience I have had here, I would make their trial one of my very first acts.

Respectfully your Ob't Serv't,
WM. PARKER, General Supt., etc.

January 29, 1851.
Philadelphia, Wilm. and Balt. R. R. Office, }
Wilmington, Del. }

Mr. L. B. TYNG—Sir: We have used the solid Cast Iron Chilled Wheel, and Cast Iron Chilled Tire, for engine drivers, on this road since 1842. When wrought iron tires under new engines, purchased from time to time, wear out, I invariably replace them with the Chilled Tire of Messrs. Perkins & McMahon, patentees.

These Tires will last, on the average, three times as long as wrought tires; seldom requiring renewals under three years, and lasting much longer usually. We have a set which has been in constant use for five years, and still in fair order. The adhesion supplied by the Chilled Tires, I find in practice with engines of the same model and weight, to be equal to that given by wrought tires. This is certainly a fact, though not an acknowledged one, in general. Those who think otherwise, will in time change their opinions.

I am of opinion that the Chilled Tire is as safe as the wrought, at any temperature. In eight years use, we have broken but one tire out of more than fifty, and that by a violent concussion on the occasion of a 'run off.'

The use of the Chilled Tire, and the ease and rapidity with which it may be replaced, would certainly enable a road to do the same amount of work with fewer engines—since but little time would be lost in laying up an engine for new tires, or for turning down old ones, as must be done when wrought tires are used.

I am yours respectfully,
I. R. TRIMBLE,
Engineer and General Supt.

Office Eastern R. R., Salem, Dec. 23, 1850.

L. B. TYNG, Esq.—Sir: Your favor of Nov. 30th, inquiring respecting the Chilled Cast Iron Tires, came duly to hand, and in answer, I will say, that this road have in use one set cast and fitted to the wheel, by Messrs. Bush & Lobdell, upon a twenty ton first class Passenger Engine, which has run in eight months, 26,639 miles, and to all appearance, are about as good as when they first commenced running.

In regard to the comparative expense of the cast or wrought iron tires, I do not hesitate to say that the difference would be vastly in favor of the former.

I have ordered a second set, and they will be put on to the engine immediately. Respectfully,
JOHN KINSMAN, Supt. E. R. R.

Chilled Tires for the various sized wheels, or wheels with either chilled or wrought tires fitted up upon this plan, may be had of the following persons:

ALDRICH, TYNG & Co, Lowell, Mass.
SMITH & PERKINS, Alexandria, Va.

Rights for using Tires upon the above plan, may be had on reasonable terms, of L. B. TYNG, Lowell, and at N. York.

1851.  1851.

PEOPLE'S OSWEGO LINE, New York and Oswego,

ARE prepared for the Transportation of Merchandise and Produce to and from New York, and ports on the Western Lakes, by the Lake Ontario and Welland Canal route. Special attention given to Railroad Iron.

PROPRIETORS.

LEWIS & BEARDSLEY, Oswego.
JAMES W. CAMPBELL, New York.

AGENTS.

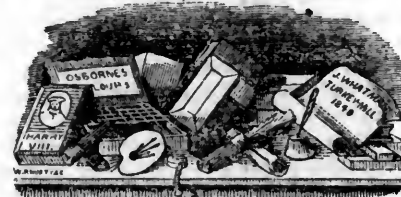
James W. Campbell, 111 Broad st., New York.
W. H. Clark, 60 Quay st., Albany.
Lewis & Beardsley, Oswego.
Smith & Hunt, Toledo, Ohio.
G. W. Bissell, Detroit, Mich.
C. Walker & Son, Chicago, Ill.
H. H. Hurlbut, Western States.
May 15, 1851.

To Engineers and Ship Builders.

THE Advertiser is desirous of a situation in a respectable concern, he has acquired a practical knowledge of his business in the establishment of R. Napier, Esq., Glasgow, has since for several years had the management of the Works of an extensive Steam Packet Co., for whom he designed and built some Iron Screw Ships, whose capabilities and performances give the highest satisfaction. While acquainted with all the most approved modes of construction of marine engines, he is prepared to submit original designs.—In modelling and draughting he has had much and successful experience. Can produce the highest testimonials as to character and abilities from the first engineer on the Clyde.
Address **ENGINEER**, box 2315 lower Postoffice.

Hufty's

Engineers, Architects and Draftsmen's
STATIONERY EMPORIUM.



WHATMAN'S Turkey Mill Drawing paper, Tracing paper, Plan and Profile, Protractors, Drawing Pins, Faber's, Jackson's and other makers' Pencils; Field, Level, and Memorandum Books of various patterns; Mathematical Instruments, Tape-lines, Mouth Glue, Cross Section paper, Triangles, Sabel Brushes, Gum Bands, Maiden Gum, Red Tape, Ink, Inkstands and Sand, Water Colors, Pallets, Patent Binders for letters, Portfolios, etc., together with a general assortment of Stationery and Blank Books. All goods packed with care, and forwarded to any part of the United States.

JOSEPH HUFTY,
Successor to H. L. Looman,
139 Chestnut st., Philadelphia.

May 15, 1851.

NOTICE.

THE Subscribers hereby give notice that they sold out their interest in the New York Iron Bridge Company on the 29th of April last to M. M. WHITE, and that their interest in the Company ceased on that date.

W. RIDER & BROTHERS,
ELIHU TOWNSEND.

The business of the New York Iron Bridge Co. will be continued as formerly by the Subscriber, who respectfully solicits orders for bridges as heretofore.

M. M. WHITE, Agent
New York Iron Bridge Company,
39 Wall st., Jauncey Court.
New York, May 13th, 1851. 3t

The Hoosic Tunnel.

This project has been defeated in the Massachusetts Legislature by a large majority.

Wanted.

A MAN, from 25 to 35 years of age, experienced in the Manufacture of Iron, by the bloomery process, and having a knowledge of machinery, as Manager, or Chief Superintendent of an Iron Establishment. Address, post paid, Box 80, New York Lower Postoffice.

AMERICAN RAILROAD JOURNAL.

Saturday, May 17, 1851.

Cast Iron Tires.

The attention of railroad companies is invited to the advertisement in our paper of to-day, of cast iron tires for freight engines. The adaptedness of cast iron for this purpose is a matter of experiment rather than theory, and the experience of its use has been found to be very successful. Such is the testimony of those who have used tires made from it. If tires for freight engines can be made of cast iron, the saving effected will at once be appreciated. The gentlemen whose names are attached to the certificates, are so well known to the railroad public, that their opinions will command attention, and lead railroad companies, we have no doubt, to a thorough investigation of this invention, which promises to effect such a saving in the working of railroads.

Eric Railroad Celebration.

The opening of this road is being celebrated this week in a style suited to the grandeur of the occasion. The excursion train left this city on Wednesday for Lake Erie, and will return to this city this evening. As we have prepared ourselves to give a full account of the opening ceremonies, and as we prefer to give them entire in one paper, we reserve all notice till next week.

Rhode Island.

Providence and Plainfield Railroad.—The subscribers to the stock of the Providence and Plainfield railroad met in Providence on Monday. The charter and amendments were unanimously accepted. The following directors were elected: Wm. Sprague, Alexander Duncan, Samuel G. Arnold, Wm. W. Hoppin, Henry Lippitt, Charles T. James, James G. Anthony, Elisha Dyer, Jr., Stephen Harris, Jr., Rufus Waterman, Amos D. Smith. William Sprague was subsequently elected President, and Francis E. Hoppin, Clerk. The meeting adjourned to the first Monday in June.

Stock and Money Market.

The money market remains without alteration since our last, and the only change in the price of stocks has been the ordinary fluctuations of prices without reference to the abundance or scarcity of money. The securities of new works continue to be taken sparingly, and with caution, though the aggregate amount of sales must be large, as we can hear of no company that has been compelled to discontinue operations for want of means. They all contrive to get money in some way, so as to push forward with energy. Even if the present state of things continues, most of our lines in progress will be brought to a speedy completion, and will then commence an immediate repayment of their cost.

The present caution on the part of purchasers of bonds, and the consequent difficulty of making negotiations will have one good effect in preventing companies from rushing recklessly forward without regard to economy or the wants of the public. Money that is obtained with difficulty is pretty sure to be economically expended, and in the present condition of things, few that are not entitled to

money can get it. We are certainly going along fast enough, and none have any reason for complaint so long as money remains at its present price.

The extraordinary receipts of western roads, as soon as they are put in operation will soon begin to exert an influence upon the price of securities from that quarter. They show conclusively that western roads are to be our best paying works, and that for investment they offer much better inducements than those in the east, a large part of the cost of which is made up of items which are entirely excluded from western lines. Railroads in every part of the country show a remarkable increase of traffic, averaging, we think, fully 20 per cent over the earnings for a corresponding period for the past year.

Rails by the last advices continue dull, and can be purchased on the other side for £5, free on board.

As the condition of our money market depends very much upon the state of the English market, we copy below the most recent reports received from that quarter.

The condition of the money market has attracted very serious attention during the latter part of the week, and the prospect of obtaining advanced rates for money has been much canvassed. Although there is more paper afloat, particularly American, as is naturally to be expected at this season, there is nothing, so far as capital is concerned, to hold out any immediate prospect of high terms. The peculiar position of the Bank of England may induce its directors to take measures for consulting its own interests; but these considerations are apart from the general condition of the market. Although there has been a tendency to ask 3 per cent. for bills where 2½ would have been taken in the beginning of the week, it is undeniable that capital is in superabundance here and abroad. The state of the exchanges and the movement of bullion afford no real argument for interference with the rates of floating capital, nor is there anything in the commercial or political world suggestive of pressing difficulty. The prospect with the advancing season of very active movement in trade certainly affords the hope of a greater application of capital; and there are many who wish to profit by the opportunity for getting a better return. All this is very remote from considerations of panic and pressure, but it still remains to be seen whether the rates of discount will advance or recede with the increased activity of commerce. That they will advance on the continent seems almost certain, for such terms as 1½ and 1½ per cent have reached the lowest limit; but here where the amount of capital in excess is so much more considerable, it cannot be predicted that higher prices will prevail. It should not be forgotten that an extension of commerce is attended with increased activity in the individual operations, so that the same amount of floating capital will work a much greater number of operations. Thus it may happen that capital now in excess may become still more in excess with increased commercial operations; and then the rate of discount would fall lower. This in effect took place here in the beginning of 1850, when notwithstanding the very great extension of our home and foreign trade as compared with 1848 and 1849, the rates of discount diminished. It is only when the total of commercial operations becomes in excess of the capital available, notwithstanding the greater activity of its application, that the rates of discount can rise, and during such a period we have seen five per cent remain as a ruling rate for some time.—[Daily News.]

The Liverpool Courier, of the 30th, says: There is still a drain on the bullion of the Bank of England. The decrease set forth in the last return is £247,138. At present the stock in the bank is £13,342,398. The reserved notes amount to £6,887,180, while the note circulation is represented as exceeding the bullion by \$6,504,082. Alluding to the bank returns published in Friday's Gazette, the Economist of Saturday last says, that the run continued during the week, but the amount taken is

not yet known. Large arrivals have taken place this week, and they should go into the next account. Several receipts of some magnitude were received in time for the present account, but they have not brought the decrease much under a quarter of a million. Bullion does not necessarily pass into the Bank of England immediately upon arrival, and there may be some of the receipts in private hands. It is confidently anticipated that the large influx of visitors, attracted by the National Exhibition, to London, will put a stop to the export of bullion, at all events not any further reduce the stock in the vaults of the bank. The amount of specie brought to Southampton by the West India steamer Thames, and the Baltic from New York, will assist the next week's bank return.

It is understood that the Bank of England have adopted a resolution to purchase, for the future, American coined gold (eagles) at a fixed price—the rate named being £3 10 3 per ounce. It is calculated that under this arrangement a remittance might be made from the United States at a cost which would be equivalent to a bill of exchange at 109½; and as the last quotation was 110½, there is a consequent probability that it will temporarily increase the shipments from that country, although of course the sellers of paper will speedily adjust themselves to the alteration.

SALES OF STOCK IN NEW YORK.

	May 15. Sales.	May 8. Sales.
U. S '67 Loan.....	117½	117½
Erie R.R.....	88½	89½
Harlem R.R.....	73½	73½
Stonington.....	43½	44
L. I. R.R.....	22	21½
Norwich & Wor.....	64½	63
Del. & Hudson.....	121½	128
Reading.....	54½	55½
Morris Canal.....	16½	16½
Erie income.....	97½	97½
" " Bonds.....	102½	102½
Canton.....	75	71½
Farmers Loan.....	69	66

SALES OF STOCKS IN BOSTON.

	May 14.	May 7.
Old Colony Railroad.....	66½	68½
Boston and Maine R.R.....	105	104½
Eastern Railroad.....	102½	101½
Fitchburg Railroad.....	112½	112½
Michigan Central Railroad.....	91½	90½
Northern Railroad.....	60½	70½
Vermont Central Railroad.....	36½	36
Vermont and Mass. R.R.....	30½	31½
Western Railroad.....	105	103½
Ogdensburg Railroad.....	40½	40
Rutland Railroad.....	57	58½
Boston and Worcester Railroad.....	106	104
Rutland Railroad Bonds.....	97	98½
Ogdensburg Railroad Bonds.....	97½	97½
Vermont Central R.R. Bonds.....	91	91½
Boston and Providence R.R.....	80½	87½
Philadelphia, Wilm'gton & Balt.....	29½	29½
Concord R.R.....	53½	56
Manchester and Lawrence.....	90	90

Kentucky.

Maysville and Lexington Railroad.—The first annual meeting of the stockholders of this company was held at Maysville on the 6th instant, at which the President of the company, Gen. Collins, submitted a report of the present condition of its affairs, from which it appears that the whole road is now under contract to an eastern company, and that work is to be commenced with all possible dispatch.

The whole amount of stock already subscribed is equal to 15,530 shares of \$50 each, viz: Maysville, 3,000, Mason Co., 3,000, Fayette Co., 4,000. Individual shares, 5,530.

By the charter, the stockholders are required to elect six directors; and the directors may elect one of their number or any other stockholder, President.

The following gentlemen were chosen directors for the present year:—Andrew M. January, Francis T. Hord, Henry Waller, J. W. Cochran, Wm. S. Allen, Christian Shultz. General Richard Collins of Maysville was re-elected president of the co.

Ohio.

Central Railroad.—Advices have been received, says the Zanesville Gazette, that 6,000 tons of rail, being the whole amount required for the road between Zanesville and Columbus, have been purchased in Wales, and some already shipped and on the way. It is understood that the quality is very superior, and will not cost exceeding \$46 per ton, delivered on the track.

Alabama.

A convention of the friends of the various railroad enterprises in this State is to be held in Mobile on the 29th of May, instant, to take into consideration the propriety of appealing to the Legislature for aid, by loan or subscription; and a committee consisting of—

P. Phillips, Mobile.
Wm. Jones, Jr. Mobile.
J. W. Lapsley, Dallas.
Edmund King, Shelby.
Wm. Curry, Talladega.
H. H. Allen, Benton.

John A. Winston, Sumter, have been appointed to prepare a circular for distribution, inviting delegates from the various counties in the State.

Montgomery and West Point Railroad.—This road was finally opened for business on the first instant.

New Orleans.

The public mind of this city is getting to be pretty thoroughly aroused upon the subject of railroad connections with the interior, and for the first time in her history, she appears to appreciate fully the importance of taking efficient steps to strengthen her position by artificial avenues of communication, to protect herself against the formidable rivalry which threatens to strike a fatal blow at her prosperity. The leading project now before her citizens is the proposed road to Jackson, Mississippi, and the construction of this may now be looked upon as secured.

But this is not all that is necessary for her to do. From this last point she must throw out branches in different directions, to counteract the efforts of Mobile, Charleston, and Savannah, which cities are now pushing their lines through Alabama and Tennessee, and even Mississippi. At a recent meeting in New Orleans upon the subject of the Jackson road, Mr. Marshall, of Vicksburg, says the Mobile Herald, in an able speech, urged the importance—while the means were raising to build the road to Jackson, which would require three or four years to accomplish—of pushing the Jackson and Selma railroad ahead. If this was not done—if the latter enterprise were deferred until the former was accomplished, they would lose the valuable bonus offered by the State of Mississippi, amounting to \$400,000, to the company which should extend the road from Jackson to Alabama. Besides, New Orleans will lose the opportunity of counteracting the powerful efforts which are now making by Charleston and Mobile, to deprive her of the valuable trade of that region. The movement for drawing the trade of the Tennessee valley must be counteracted—the question cannot any longer be dodged—it must be met manfully. If the measures of Charleston cannot be counteracted, said the speaker, then an effort must be made to open a new trade. This can be done through the Jackson and Selma road. This road would penetrate a very rich and productive country

which has hitherto contributed largely to the support of Mobile. If New Orleans does not aid in the object of securing this road, the Mobile and Ohio road will not only take all the produce of this country, but also that of several of the rich northern counties of Mississippi—Chickasaw, and others, which at present send their cotton to Memphis, but would find it cheaper to send it to Mobile, by the Mobile and Ohio railroad. The idea was to complete as speedily as possible the road from Vicksburg, Jackson, and Brandon, in a direct line to Selma.

This road would pass through the most fertile portions of Alabama, whose produce has never heretofore gone to New Orleans. It will run through a perfectly level country, where there is scarcely a hill the whole distance, and may be made at less cost than any railroad in the United States. By this road, over a distance of one hundred and fifty miles, cotton may be shipped to New Orleans cheaper than by the present uncertain mode of communication by the Tombigbee river to Mobile. Even if it cost as much, the larger market of New Orleans would kick the beam in her favor against Mobile. The planters would prefer New Orleans, other things being equal. There are five counties in Alabama, whose produce New Orleans could thus draw into its markets. These counties produce 170,000 bales of cotton, 150,000 of which would go to New Orleans if this road was built.

Virginia.

Seaboard and Roanoke Railroad.—Among the more important railroad projects in Virginia may be named the Seaboard and Roanoke railroad, which extends from Norfolk to the Raleigh and Gaston railroad, in North Carolina, a distance of about 90 miles. At Weldon, 80 miles from Norfolk, it also forms a junction with the Wilmington and Weldon railroad. It is also designed to afford an outlet for the produce of the rich and extensive valley of the Roanoke river, to its appropriate seaport.

The above road, when completed, will form a part of a new, cheap, and direct route, between the north and south. Already a line of commodious steamers unites Norfolk with Baltimore. A new line of steamers between New York and Norfolk is to commence running about the first of July next. The Seaboard and Roanoke railroad, by its connection with the North Carolina railroad, will, with the steamboat lines of which we have spoken, form a very convenient route for through travel and will, without doubt, be extensively patronized.

The city of Norfolk, which is well known to possess one of the best harbors on the whole continent, is the great market for the northeastern and southwestern portions of North Carolina and Virginia. For the accommodation of the business of this territory, the above road occupies the most convenient route. At South Gaston it will advantageously connect with the Roanoke Navigation Company, which has expended the large sum of \$400,000 in the improvement of the navigation of the Roanoke river and its tributaries. These rivers drain an extensive and fertile region, which furnishes a very large amount of produce for exportation.

For the purpose of opening a railroad communication still further into the interior, a charter for a railway from Ridgeway, on the Raleigh road, to Clarkville, on the Roanoke, a distance of 25 miles from the former place, has been granted, and to the portion of this line within Virginia, the State

has subscribed three-fifths of its cost. For all that portion of the country immediately dependent upon Norfolk, and for the roads traversing it, the above will form for such their trunk line to that city.—For through and local traffic, therefore, the road occupies a strong position, and as an investment, bids fair to be a very remunerative one.

But those interested in this work, as well as the people of New York, look upon the above line as possessing a greater importance than that attaching to it from the connections of which we have spoken. As the above city possesses one of the best harbors in the United States, and has no rival in the south, her people believe that she is entitled to become the great shipping port of the central and southern portions of the United States; and consequently, a great city. In looking at a map, it is difficult to satisfactorily account for the fact why she has not become such. It is alleged to be, for the want of a suitable channel of communication with the interior, and it is claimed, that when the great lines of railroad now in progress in Virginia, and her neighbors on the south, are completed, connecting, as they will, Norfolk with the most distant sections of the country, that she will then take the place that nature intended she should occupy in the rank of American cities. Whatever difference of opinion may exist as to the extent of the influence of the improvements above named, there can certainly be no doubt that they will soon make Norfolk an important town. When art shall have done enough to equal her natural advantages, that should become one of our leading commercial cities.

The whole cost of this road to the present company will not exceed \$1,000,000. This low cost is owing to the fact that the former company, (the Portsmouth and Roanoke,) expended over \$1,200,000 upon this road, which was purchased by the present corporation, and which, to a great extent, has been made available to the new work.

The general characteristics of the line are favorable. The road is remarkably free from curvature. The gradients are very low. In one or two places only, and for very short distances, they are as high as twenty-five feet to the mile. For practical purposes, it may almost be regarded as a straight and level road. The superstructure consists of a T rail, weighing fifty pounds per yard, laid upon sleepers or cross ties, two feet apart, principally of the best white oak. The road bed is substantial and firm; is not affected by frosts, and when the track is once put in order, it may be maintained in good condition at a very trifling expense. Owing to the very light grades, it will be unnecessary to use heavy engines, necessary upon roads of higher grades. The line being nearly straight, may be operated with safety and speed. These circumstances combined, together with the great cheapness of fuel upon the line, will essentially reduce the ordinary and unavoidable expenses of the great majority of railroads in the country.

The road in March last was completed in running order to Frankton, on the Blackwater river, a distance of 37½ miles. Steamboats run daily from this point to Edenton, Plymouth, and other places on the Albemarle Sound, in connection with the trains. The iron rails are provided and on hand for the whole length of the line, and an efficient force is now engaged in laying the track between Franklin and Weldon. The length now laid is about 45 miles from Portsmouth. The road

will probably be opened to Weldon, 80 miles from Norfolk, in May next, and to South Gaston in season for the fall crop.

New York.

The Albany and Susquehanna railroad has been duly incorporated under the general railroad law. At a meeting of the directors, held in Albany, the following officers were elected: Edward C. Delevan, President; William V. Many, Vice President; Robert H. Pruyn, Treasurer; Samuel B. Beach, Secretary. E. R. Ford, of Oneonta, was elected a director in place of Samuel B. Beach, resigned. Measures were adopted for the immediate survey of the route, and it is proposed, if practicable, to commence the construction of the road the present season.

Indiana.

Madison and Indianapolis Railroad.—We learn through the Madison Tribune, that the Madison and Indianapolis railroad company have recently effected a loan, for the purpose of adding largely to their equipment of engines, cars and machinery, and for other objects essential to the prosperity and business of the company; to secure the payment of which, the company execute their bonds, of the denomination of \$1000 each, bearing interest at the rate of 7 per cent. per annum, payable semi-annually, the principal of said bonds payable at the Merchants' Bank of New York, on the 1st May, 1861, and convertible into the stock of the company, at the pleasure of the holder, on, and after the 1st day of May, 1854; the aggregate of said bonds not to exceed six hundred thousand dollars—one third of which issued on the 1st instant; fifty thousand dollars to be issued hereafter, at the discretion of the board of directors, and the balance, being three hundred and fifty thousand dollars, to be issued only upon the approval, by vote, of two-thirds of the stockholders. This loan has been effected by Mr. Brough, on behalf of the company, through John I. Palmer and Wm. H. Russell, Esqrs. of New city. To secure the payment of the bonds, a mortgage has been executed on the entire road and its appurtenances.

The Clipper Ship "Flying Cloud."

The following are the dimensions of the above named ship, now in our harbor, and soon to sail for San Francisco. She was built in Boston for Grinnell, Minturn & Co., of this city, and is designed for the California and China trade. Her registered tonnage is 1,782 48 95, which exceeds that of any American sail vessel afloat. She is expected to carry from 2,000 to 2,500 tons freight.—Her length on the keel is 208 feet; on deck, 225; and over all, from the knight heads to taffrail, 235. Her extreme breadth of beam is 41 feet; depth of hold, 21½. Her keel is 27 inches clear of the garboards; her dead rise, at half floor, 30 inches. Her bow below the planksheer, is slightly concave. At 18 feet from the apron, inside, on the level with the between decks, she is only 11 ft. wide. She has the sharpest bow we ever saw on any ship, although 10 inches fuller on the floor than most of the modern built clippers. She has three depths of midship keelsons, which, combined, are moulded 45 inches, and are sided from 17 to 15, making her, with her keel, which is in 3 depths, nearly 9 feet through the backbone. She has also two depths of sister keelsons, the first 16 by 10, and the second 14 by 10, cross-bolted diagonally and at right angles through the naval timbers. These statements will serve to show the strength of the ship, and that

no effort has been spared to make her perfect in this respect. She is a full-rigged ship, and all her masts rake alike, 1¼ inch to the foot. The following are the dimensions of her masts and yards:

	MASTS.		Mast head.
	Diameter. Inches.	Length. Feet.	
Fore.....	35	82	13
Top.....	17	46	9
Topgallant.....	11	35	0
Royal.....	10	17	0
Sky-sail.....	8½	13 pole.	5
Main.....	36	88	14
Top.....	18	51	9½
Topgallant.....	12	28	0
Royal.....	11	19	0
Sky-sail.....	9½	14½ pole.	5½
Mizen.....	26	78	12
Top.....	12½	40	8
Topgallant.....	9	22	0
Royal.....	8	14	0
Sky-sail.....	7	10 pole.	4
	YARDS.		Arms.
	Yard		
Fore.....	20	70	4½
Top.....	15	55	5
Topgallant.....	10	41½	3
Royal.....	7	12	3
Sky-sail.....	6½	22	1½
Main.....	22	82	4½
Top.....	17	64	5
Topgallant.....	15	50	3
Royal.....	10½	37	2½
Sky-sail.....	7	24	1½
Cross jack.....	16	56	4
Mizen topsail.....	11½	45	4½
Topgallant.....	10	33	2½
Royal.....	7	25	1½
Sky-sail.....	6	20	1

The bowsprit is 28½ inches in diameter, and 20 feet outboard, jibboom 16½ inches in diameter and is divided at 16 feet for the inner, and 13 feet for the jib, with 5 feet real, spanker boom 55 feet gaff 40, main spencer gaff 24 feet. She has three cabins: the first containing the pantry and office-rooms, and the second, or main cabin, are splendidly wainscotted with satin, mahogany and rose woods, set off with enameled pilasters, cornices and gilt work, curiously wrought. The after cabin is smaller, and fitted up in elegant style for a withdrawing room.

Specie.

The following table will show the export of specie from New York for the week ending May 10, and for the year:

Ship Prince Albert, London,	American gold.	\$30,000
" " "	Old silver....	4,584
" " "	Am. silver coin	4,000
" " "	Mexican do.	10,000
Bark W. O. Alden, Belize, Patriot	doubloons	5,100
Steamer Humboldt, Havre,	American gold.	508,600
" " "	Am. silver....	120,000
" " "	Mexican coin.	26,600
" " "	French gold....	108,681
" " "	Thalers.....	1,950
Ship St. Denis, Havre,	Am. silver....	102,000
" " "	Am. gold.....	6,200
Steamer Asia, Liverpool,	Am. gold.....	352,659
" " "	Eng. gold and silver.....	20,000
Sch. Arabian, Jacmel,	Am. gold.....	1,300
Sch. Narcissa, Baracoa,	Pat. doubloons.	1,867
Total May 3 to May 10.....		\$1,303,291
Previously reported.....		7,948,075
Total for 1851.....		\$9,252,366

Spikes, Spikes, Spikes.

ANY person wishing a simple and effective Spike Machine, or a number of them, may be supplied by addressing J. W. FLACK, Troy, N. Y. or MOORE HARDAWAY, Richmond, Va. March 6, 1850.

Notice to Contractors.

Pennsylvania Railroad.

PROPOSALS will be received from the 9th to the 24th of June next, at Johnstown and Summit, for the Grading and Masonry of that part of the Mountain Division of the Pennsylvania Railroad between Altona, in Blair county, and Pringle's Point, a few miles below Jefferson, in Cambria—a distance of 25 miles.

The road within this distance will cross the Allegheny mountains, encountering some of the heaviest grading offered in this country. In addition to a number of extensive cuttings, embankments and culverts, there will be one tunnel 1200 yards in length at the summit of the mountain, and another of 200 yards through Pringle's Point.

Terms cash, monthly. For further information apply to EDWARD MILLER, Esq., Associate Engineer, Blairsville, Indiana Co., or to STRICKLAND KNEASS, P. A. Engineer, Altona, Blair county.

J. EDGAR THOMSON, Chief Engineer.

Engineer Department P. R. R. Co.
Philadelphia, May 1st, 1851.

Notice to Contractors.

ENGINEER'S OFFICE,

Petersburgh, April 24th, 1851.

PROPOSALS will be received until the 20th of May next for laying 40 miles of the Track of the South Side railroad.

The Railroad Company will furnish all materials.

Plans and Specifications will be exhibited for several days previous to the letting.

Personal security to the amount of about 20 per cent. of the contract or contracts will be required, and each proposal must be accompanied with a letter from a responsible person, stating that he will become the security.

C. O. SANFORD, Chief Engineer.

To Railroad Companies.

SALISBURY REFINED IRON.

THE Undersigned, having enlarged and perfected his Works, is now prepared to furnish Locomotive Tire of a better quality than have heretofore been used. Railroad Companies who may wish it, will be furnished with a set for trial, not to be paid for until they are satisfied of their superior quality over any other. Also made at short notice, and in the best manner, Locomotive Cranks, Engine and Car Axles, and other Locomotive Forgings.

All work ordered from me will be made of Salisbury Iron, and done in the best manner.

Address HORATIO AMES, Falls Village, Conn.

May 1, 1851.

Lovegrove's Patent Cast Iron Water and Gas Pipes.

THE Subscriber, the Inventor and Patentee of the Centrifugal mode of giving form to metallic substances while in a molten state, is preparing to make Cast Iron Water and Gas Pipes, of any dimensions, at prices much lower than they can be made in the old manner, and the pipes warranted to stand a pressure of three hundred pounds to the square inch, and to be soft enough to drill. Steam Engines and all kinds of machinery. Cast Iron Doors and Frames, and Mill Castings of every description, made to order.

THOMAS J. LOVEGROVE,

Machinist and Founder,

West Falls Avenue, below Pratt St., Baltimore.

To Railroad Companies, etc.

The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

I also invite attention to an improved PATENT SPRING LOCK, for SLIDING Doors to Freight and Baggage Cars, now in use upon the Pennsylvania Central, Greensville and Columbia, S. C., Reading, Pa., and other Railroads.

Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH, 46 South 8th St. Philadelphia.

May 9, 1851.

Boston Locomotive Works,
—Late Hinkley & Drury—
No. 380 Harrison Avenue,
BOSTON.

Locomotive and Stationary Steam Engines; Boilers; Iron, Brass, Copper and Composition Castings; Copper-Smith's Work, and all kinds of Railroad Machinery furnished at short notice.

ALSO



Van Kuran's Improved Railroad Wheel,

Patented May 1, 1849. Manufactured under the personal superintendence of the Patentee, as above.

Orders for any quantity of wheels executed with dispatch, and wheels and axles fitted in the very best manner and at the lowest rates. Address

DANIEL F. CHILD, Treasurer, Boston.



Providence Tool Co.,

MANUFACTURERS OF

Plane Irons, Tooth Irons, Soft Moulding and Rabbit Irons, Cornice Irons, Plow Bits, and Planing Machine Knives:

NUTS, WASHERS AND BOLTS.

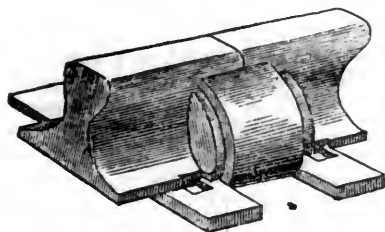
—ALSO—

PLATE HINGES AND PICK AXES.

They are prepared to execute orders for all descriptions of Cold Punching and Job Work.

WM. F. FIELD, Agent. RUFUS WATERMAN, Treas.
PROVIDENCE, R. I.

**Railroad Iron,
SPIKES, AND
WROUGHT IRON CHAIRS.**



THE Undersigned, Agent for Manufacturers, is authorized to contract for Welsh Railroad Iron of the best quality, and deliverable at any port on favorable terms, also Spikes and Wrought Iron Chairs, made from the best iron, and of any pattern and weight. The new Wrought Iron Chair, with the introduction of a "Key," as per the annexed plan, will be found a great improvement on the old pattern.



Boiler Plates of superior quality, perfect regularity in the squaring and thickness, and made with great care.

Samples can be seen at our office, No. 20 Beaver St.
CHARLES ILLIUS.

**LOWMOOR
AND
U. S. BEST FINCH IRON.
To Iron Merchants.**

JOHN FINCH & SONS, Iron Merchants, Liverpool, now are, and for more than twenty years past have been, sole Agents for the LOWMOOR IRON COMPANY, for the United States and Canada, for the sale of their well known Railway Tire Bars, and Axles, Piston Rods, Boiler Plates, Angle, Rivet, and all other kinds of Lowmoor Iron: also, sole Agents for the sale of the superior Staffordshire Iron stamped "FINCH CROWN" and "U. S. BEST FINCH," and Merchants and Wholesale Dealers in all other kinds of British Iron.

We hereby inform our friends and the public that we have this day appointed Mr. WM. BAILEY LANG, of Boston, as our only representative to receive orders and to transact our general business in the United States.

For JOHN FINCH & SONS.,
JOHN FINCH Sen.

Boston, April 11, 1851.

LOWMOOR and other Bent, Welded and Blocked RAILWAY TIRES, ready for use, E. FINCH'S Patent Dovetailed and other kinds of WROUGHT IRON RAILWAY WHEELS, with, or without the finished Axles, for Locomotives and for Passenger and Merchandise Cars, also Wrought Iron Railway Chairs, Railway Spikes, etc.

To the Managers of Railways, Engineers and others: Gentlemen:—We, FINCH & WILLEY, Engineers, Liverpool, Manufacturers of the above articles, respectfully inform you that we have this day appointed Mr. WM. BAILEY LANG, of Boston, as our sole Agent for the sale of said articles, and the transaction of our business in the United States of America, and for whom we solicit your kind attention and patronage.

For FINCH & WILLEY,
JOHN FINCH, Sen.

Boston, April 11, 1851.

Having accepted the above Agencies, I beg leave to solicit your orders, which shall at all times receive my prompt and careful attention. Please address all communications either to MESSRS. JOHN FINCH & SONS or MESSRS. FINCH & WILLEY, Liverpool; or to me, at my Steel Warehouse, No. 9 Liberty Square, Boston. Yours very respectfully,

WM. BAILEY LANG.

Boston, April 11, 1851.

The following are testimonials of the quality of FINCH & WILLEY'S WROUGHT IRON RAILWAY WHEELS from the Yorkshire and Lancashire Railway Co., one of the largest in Great Britain, and from the London and North Western Railway Co., the largest Railway Company in the world.

LONDON AND NORTH WESTERN RAILWAY,
(Northern Division.)
WAGON DEPARTMENT, ORDSALL LANE,
Manchester, January 4, 1851.

Gentlemen:—I have very great pleasure in bearing my testimony to the excellent quality of your Wrought Iron Railway Wheels.

This Company have many of them now in use on their lines, and during my experience, as their Superintendent, which is now upwards of 9 years standing, I have not known any of them to fail during that time.

I am, Gentlemen, yours, truly,
OWEN OWENS.

MESSRS. FINCH & WILLEY,
Windsor Foundry.

LANCASHIRE AND YORKSHIRE RAILWAY,
Wagon Department, Jan. 3, 1851.

Messrs. Finch & Willey,

Gentlemen: In reply to your request writing me to give my opinion of the 700 sets of Wrought Iron Wheels you furnished this company during the years 1847 and 1848, I have much pleasure in stating that we have not had a single instance of your Wheels failing in any respect, and I consider them equal if not superior to any Wheels we have on this line of railway. The Tires being LOWMOOR iron, 1 1/2 inch thick I have no doubt they will run under ordinary goods' wagons 12 years without any repairs more than the tires turning up. I am Gentlemen,
Yours, truly, WM. EMMETT.

NOTE.—4 Wheels and 2 Axles are one set, consequently this order contained 2000 WHEELS and 1000 AXLES; value over \$100,000.

Railroad Iron.

THE UNDERSIGNED, HAVING made arrangements abroad, are prepared to contract for the delivery of Foreign rails, of approved brands upon the most favorable terms.

They will also make contracts for American rails, made at their Trenton works, from Andover Iron, in whole or in part, as may be agreed upon.

They are prepared to furnish Telegraph, Spring and Market Wire; Braziers and Wire Rods; Rivets and Merchant Bars to order, all made exclusively from Andover Iron. The attention of parties who require iron of the very best quality for special purposes, is respectfully invited.

COOPER & HEWITT,
17 Burling Slip, New York.

February 15, 1850.

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.

August, 16, 1849.

6m33

Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron.

THOMAS B. SANDS & CO.,
73 New Street,
New York.

February 3, 1849.

Glendon Refined Iron.

Round Iron, Band Iron, Hoop Iron,
Square " Flat " Scroll "

Axles, Locomotive Tyres,
Manufactured at the Glendon Mills, East Boston, for sale by
GEORGE GARDNER & CO.,
5 Liberty Square, Boston, Mass.

Sept. 15, 1849.

3m37

ENGINEERS.

Atkinson, T. C.,

Mining and Civil Engineer,
Orange and Alexandria Railroad, Alexandria, Va.

Clement, Wm. H.,

Little Miami Railroad, Cincinnati, Ohio.

Cozzens, W. H.,

Engineer and Surveyor, St. Louis, Mo.

Alfred W. Craven,

Chief Engineer Croton Aqueduct, New York.

Floyd-Jones, Charles,

Alton and Sangamon Railroad, Alton, Illinois.

Gay, Edward F.,

Columbia and Philadelphia Railroad, Philadelphia Pa.

Gilbert, Wm. B.,

Rutland and Burlington Railroad, Rutland, Vt.

Gzowski, Mr.,

St. Lawrence & Atlantic Railroad, Montreal, Canada.

Grant, James H.,

Nashville and Chattanooga R. R., Nashville, Tenn.

S. W. Hill,

Mining Engineer and Surveyor, Eagle River,
Lake Superior.

Holcomb, F. P.

Southwestern Railroad, Macon, Ga.

Latrobe, B. H.,

Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,

Buffalo and Conhocton Valley Railroad, Bath, N. Y.

Morris, Elwood,

Schuylkill Navigation, Schuylkill Haven, Pa.

Nott, Samuel,

Lawrence and Manchester Railroad, Boston,

Osborne, Richard B.,

Civil Engineer, Philadelphia.

Prichard, M. B.,
East Tennessee and Georgia R. R., Cleveland, Tenn.

W. Milnor Roberts,
Bellefontaine and Indiana Railroad, Marion, Ohio.

Roberts, Solomon W.,
Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Sanford, C. O.,
South Side Railroad, Virginia.

Schlatter, Charles L.,
Northern Railroad (Ogdensburg), Malone, N. Y.

Steele, J. Dutton,
Pottstown, Pa.

Trautwine, John C.,
Civil Engineer and Architect, Philadelphia.

Tinkham, A. W.,
United States Fort, Bucksport, Me.

Troost, Lewis,
Alabama and Tennessee Railroad, Selma, Ala.

Whipple, S.,
Civil Engineer and Bridge Builder, Utica, N. Y.

HOTELS.

**DAVIS'S
ALHAMBRA HALL,**
No. 136 Pratt street,
BALTIMORE.

Exchange Hotel,
Adjoining Eastern Railroad Depot,
BUFFALO, N. Y.
BY.....**FISS & SPERRY,**
Late of Delevan House, Albany.

MANSION,
Corner of Main and Exchange Streets,
P. DORSHIMER. BUFFALO.

Barnum's City Hotel,
MONUMENT SQUARE, BALTIMORE.
This Extensive Establishment, erected expressly for a Hotel, with every regard to comfort and convenience, is situated in the centre and most fashionable part of the city, and but a few minutes' walk from the Railroad Depots and Steamboat Landings.
The House has lately undergone a thorough repair, embracing many valuable improvements, and will accommodate 250 Guests. **BARNUM & CO.**

American Hotel,
Pratt street, opposite the Railroad Depot,
BALTIMORE.
HENRY M. SMITH.....Proprietor.
Late of the Exchange & St. Charles Hotels, Pittsburgh

Washington Hotel,
BY **JOHN GILMAN,**
\$1 Per Day.
No. 206 Pratt street, (near the Depot),
BALTIMORE.

**GUY'S
United States Hotel,**
(Opposite Pratt street Railroad Depot),
BALTIMORE.
JOHN GUY. **WILLIAM GUY.**

DUNLAP'S HOTEL,
On the European Plan,
NO. 135 FULTON STREET,
Between Broadway and Nassau St.,
NEW YORK.

JONES' HOTEL,
NO. 152 CHESTNUT STREET,
PHILADELPHIA.
BRIDGES & WEST, Proprietors.

Fountain Hotel,
LIGHT STREET, BALTIMORE,
P. THURSTON.....Proprietor.

BUSINESS CARDS.

Walter R. Johnson,
CIVIL AND MINING ENGINEER AND AT-
torney for Patents. Office and Laboratory, F St.,
opposite the Patent office, Washington, D. C.

Lithography.
JOHN P. HALL & CO.,
161 Main st., Buffalo, (Commercial Advertiser Bldg.).

Are prepared to execute all kinds of Lithography in good style and at reasonable rates. Particular attention will be paid to Engraving Railroad Maps, Engineer's Plans and drafts, etc., and orders in this line are respectfully solicited.

**Cumberland, (Md.) Coals for
Steaming, etc.**
ORDERS RECEIVED FOR AND FILLED
by **J. COWLES,** 27 Wall St., N. Y.

J. & L. Tuckerman,
IRON COMMISSION MERCHANTS,
AND MANUFACTURERS OF
ULSTER BAR & POUGHKEEPSIE PIG IRON,
69 WEST STREET,
NEW YORK

Henry I. Tbbotson,
IMPORTER of Sheffield and Birmingham Goods.
Also, Agent for the Manufacture of Telegraph
Wire. 218 PEARL ST., NEW YORK.

Charles T. Jackson, M. D.,
STATE ASSAYER, late Geologist to Maine, Rhode
Island, New Hampshire, and the United States,
offers his services to his friends and the public in mak-
ing any Chemical, Mineralogical or Geological re-
searches that may be required for the improvement of
Agriculture and the Manufacturing Arts. Particular
attention will be paid to the exploration of mines and
to assaying of ores of the metals.
State Assayer's office, 31 Somerset st.
Boston Sept. 3, 1850.

STEEL AND FILES.

R. S. Stenton,
20 CLIFF STREET, NEW YORK,
AGENT FOR

J. & RILEY CARR,
BAILEY-LANE WORKS, SHEFFIELD,
Manufacturers of Cast, Shear, German, Blister, and
Spring Steel,
Of all descriptions, Warranted Good.
FILES.

Manufacturers of Machinists' Warranted Best Cast
Steel Files, expressly for working upon Iron and Steel,
made very heavy for recutting.
A full Stock of Steel and Files at all times on
hand. 6m4

Dudley B. Fuller & Co.,
IRON COMMISSION MERCHANTS,
No. 139 GREENWICH STREET,
NEW YORK.

Manning & Lee,
GENERAL COMMISSION MERCHANTS,
NO. 51 EXCHANGE PLACE,
BALTIMORE.

Agents for Avalon Railroad Iron and Nail Works.
Maryland Mining Company's Cumberland Coal 'CED'
-Potomac' and other good brands of Pig Iron.

Samuel Kimber & Co.,
COMMISSION MERCHANTS
WILLOW ST. WHARVES, PHILADELPHIA.
AGENTS for the sale of Charcoal and Anthracite
Pig Iron, Hammered Railroad Car and Locomo-
tive Axles, Force Pumps of the most approved con-
struction for Railroad Water Stations and Hydraulic
Rams, etc., etc.
July, 27, 1849.

James Herron, Civil Engineer,
OF THE UNITED STATES NAVY YARD,
PENSACOLA, FLORIDA.,
PATENTEE OF THE
HERRON RAILWAY TRACK.
Models of this Track, on the most improved plan,
may be seen at the Engineer's office of the New York
and Erie Railroad.

PLUSHES

FOR

Railway Cars & Omnibuses.
F. S. & S. A. MARTINE,
112 WILLIAM ST., NEAR JOHN.

ARE now receiving a large and complete assort-
ment of Plain and Figured PLUSHES, of their
own importation, which will be sold at the lowest
market price, viz: Crimson, Maroon, Scarlet, Green,
Blue, Purple, etc.
ALSO—CURLED HAIR, the best manufactured
in market.

**To Railroad Companies,
Machinists, Car Man-
ufacturers, etc., etc.**

CHARLES T. GILBERT,
NO. 80 BROAD ST., NEW YORK,

IS prepared to contract for furnishing at manufac-
turer's prices—
Railroad iron,
Locomotive Engines,
Passenger and Freight Cars,
Car Wheels and Axles,
Chairs and Spikes.

Orders are invited; and all inquiries in relation to
any of the above articles will receive immediate atten-
tion

Manufacture of Patent Wire ROPE AND CABLES,

For Inclined Planes, Suspension Bridges, Standing
Rigging, Mines, Cranes, Derrick, Tilters, &c., by
JOHN A. ROEBLING, Civil Engineer,
TRENTON, N. J.

FORGING.

Ranstead, Dearborn & Co.,
MANUFACTURERS OF
LOCOMOTIVE CRANKS AND CAR AXLES,
ALSO
WROUGHT IRON SHAFTHING,
And All Kinds of Hammered Shapes.
Office 25 Foster's Wharf, Boston.

Samuel D. Willmott,
MERCHANT, AND MANUFACTURER OF
CAST STEEL WARRANTED SAWS,
—AND FILES—
IMPORTER OF THE
GENUINE WICKESLY GRINDSTONES
NO. 8 LIBERTY STREET,
NEW YORK.

Railroad Instruments.

THEODOLITES, TRANSIT COMPASSES,
and Levels, with Fraunhoffer's Munich Glasses,
Surveyor's Compasses, Chains, Drawing Instru-
ments, Barometers, etc., all of the best quality and
workmanship, for sale at unusually low prices, by
E. & G. W. BLUNT,
No. 179 Water St., cor. Burling Slip.
New York, May 19, 1849.

IRON.

Iron.

Pig Iron, Anthracite and Charcoal; Boiler and Flue
Iron, Spring and Blistered Steel, Nail Rods, Best Re-
fined Bar Iron, Railroad Iron, Car Axles, Nails, Stove
Castings, Cast Iron Pipes of all sizes, Railway Chairs
of approved patterns for sale by
COLEMAN, KELTON & CAMBELL,
109 N. Water St., Philadelphia.

Iron Store.

THE Subscribers, having the selling agency of the
following named Rolling Mills, viz: Norristown,
Rough and Ready, Kensington, Philadelphia, Potts-
grove and Thorndale, can supply Railroad Companies,
Merchants and others, at the wholesale mill prices for
bars of all sizes, sheets cut to order as large as 58 in.
diameter; Railroad Iron, domestic and foreign; Loco-
motive tire welded to given size; Chairs and Spikes;
Iron for shafting, locomotive and general machinery
purposes; Cast, Shear, Blister and Spring Steel; Bol-
der rivets; Copper; Pig iron, etc., etc.

MORRIS, JONES & CO.,
Iron Merchants,
Schuylkill 7th and Market Sts., Philadelphia.
August 16, 1849. 1y33

Bowling Iron.

Railway Tire Bars
Locomotive and other Axles
Boiler Plates
and every other description of this superior Iron.

The subscribers, agents for the sale of Bowling Iron, are prepared to execute orders for importation, especially for railway and machinery uses, with despatch from the manufacturers.

RAYMOND & FULLERTON, 45 Cliff st.

**Ibbotson, Brothers & Co's
CELEBRATED CAST STEEL**

AND

Best Cast Steel Royal Improved Files, well known as better adapted for Engineers' and Machinists' purposes than any now in use in the United States.

Every description of Square, Octagon, Flat and Round Cast Steel, Sheet, Shovel and Railway Spring Steel, etc., and Steel to order for any purposes—manufactured at their works in Sheffield—and universally known by the old stamp "Globe."

HENRY I. IBBOTSON, Agent,
218 Pearl st., New York.

**Smith & Tyson,,
IRON COMMISSION MERCHANTS,
BALTIMORE.**

REFINED Juniata Charcoal Billet Iron for Wire. Do. for Bridging, of great strength. Flat Rod, Boiler and Flue Iron, rolled to pattern. Elba, Wheel Iron of great strength and superior chilling properties. Elba Forge Iron, American Shot Iron, Cut Nails, Spikes and Brads, Nail and Spike rods, Railroad Spikes of superior quality, Wrought Chair plates of any pattern, punched or plain.

**WILLIAM JESSOP & SONS'
CELEBRATED CAST-STEEL.**

The subscribers have on hand, and are constantly receiving from their manufactory,

PARK WORKS, SHEFFIELD,
Double Refined Cast Steel—square, flat and octagon. Best warranted Cast Steel—square, flat and octagon. Best double and single Shear Steel—warranted. Machinery Steel—round.
Best and 2d gy. Sheet Steel—for saws and other purposes.

German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.

Genuine "Sykes," L Blister Steel.

Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by
WM. JESSOP & SONS,
91 John street, New York.

Also by their Agents—

Curtis & Hand, 47 Commerce street, Philadelphia.
Alex'r Fullerton & Co., 119 Milk street, Boston.
Stickney & Beatty, South Charles street, Baltimore.
May 6, 1848.

Railroad Iron.

B. O. Railway Tires, Railway Wheels,
Scotch Pig Iron, Tin Plates and Banca Tin,
Muntz Patent Metal Sheathing,
Baltimore Copper.

Contracts for Rails made on behalf of the manufacturers, for delivery at any ports in the United States, at fixed prices.

Bowling Tires and Tire Bars and Scotch Pigs imported to order.

Muntz's Ship-sheathing, and a general stock of Tin Plates and Banca Tin in store, and for sale by
RAYMOND & FULLERTON, 45 Cliff st.

IRONDALE PIG METAL, MANUFACTURED
and for sale by the Bloomsburg Railroad Iron Co.
LINDLEY FISHER, Treasurer.
75 N. Water St., Philadelphia.

Car Wheel Iron.

THE celebrated cold blast "Conowingo" Pig Iron, for Railroad Wheels, Chilled Rolls, etc., for sale by
E. PRATT & BROTHER,
Baltimore, Md.

Railroad Iron.

3,000 TONS C. L. MAKE 63½ lbs. per yard, now landing and to arrive.

Also contracts made for future delivery of above superior make English Iron.

300 Tons Banks Best Iron, Round, Square and Flat.
10 " English Bar " " " "
10 " 9-16 Square Iron for Railroad Spikes.

For sale in lots to suit purchasers by
DAVID W. WETMORE.
New York, March 26, 1850.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

**JOHNSON, CAMMELL & Co's
Celebrated Cast Steel,**

AND

ENGINEERING AND MACHINE FILES, which for quality and adaptation to mechanical uses, have been proved superior to any in the United States. Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cyclops Steel Works Sheffield.

JOHNSON, CAMMELL & CO.,
21 Cliff St., New York.

November 23 1849.

Bowling Tire Bars.

40 Best Flange Bars 5½x2 inches, 11 feet long.
40 " " 5½x2 " 7 feet 8 in. long.
40 " Flat " 6x2 " 11 feet long.
40 " " 6x2 " 7 feet 8 in. long.

Now in store and for sale by

RAYMOND & FULLERTON,
45 Cliff street.

**Wheel, Forge and Foundry
Iron.**

LOCUST GROVE Wheel Iron of great strength and superior chilling property.

Balt. Charcoal Forge Iron, from Patuxent, Curtis Creek and Gunpowder furnaces.

Elkridge Foundry Iron, of superior strength and softness. Anthracite and Charcoal Iron from Pennsylvania and Virginia. Gas and Water Pipes, Lamp Posts from Elkridge furnace.

LEMMON & GLENN,

5m9 62 Buchanan's Wharf, Baltimore.

Railroad Iron.

1650 Tons, weighing about 61 lbs. per yard, 40 tons, weighing about 52 lbs. per yard, and 825 tons, weighing about 53½ lbs. per yard, of the latest and most approved patterns of T rail, for sale by
BOORMAN, JOHNSTON & CO.,
119 Greenwich street.

New York, Aug. 26, 1850.

N.B.—B. J. & Co are also prepared to take contracts for English rails, delivered in any of the Atlantic ports of the United States.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract to deliver Rails of superior quality, and of any size or pattern, to any ports of discharge in the United States.

COLLINS, VOSE & CO.,

74 South St.

New York, June 1, 1850.

Tredegar Iron Works.

ROLLING MILL FOUNDRY AND MACHINE
SHOPS. The undersigned continues to manufacture at his Works in this city (from best charcoal metal) Bar Iron of every description, embracing—Rounds and Squares, from ½ to 5 inches diameter. Flats, from ½ to 7 inches, all thicknesses.

Bands and Scrolls, all sizes. Boiler plate and Plough Iron. Railroad and Locomotive Axles and Tires. Locomotive Frames, Spikes and Plates. Hoops, Ovals, Half Ovals, Half Rounds, Angle, T, L, and indeed every description of Iron usually manufactured, all of which he warrants to be equal to any made in this country. He also manufactures at his Foundry and Machine Shops all descriptions of Railroad Work, say, Locomotives, Railroad Wheels and Axles complete and ready for the road, Railroad Chairs, etc. Also, Marine and Stationary Engines all sizes, Sugar mills and Engines, Horse mills, and every kind of Machinery usually required for the operations of the country. He has paid particular attention to getting up machinery, etc., for Gold Mine operations, and those in want of such work might find it to their advantage to give him a call.
J. R. ANDERSON.
Richmond, Va., Sept. 10, 1850.

CUT NAILS OF BEST QUALITY, BAR IRON
(including Flat Rails) manufactured and for sale by
FISHER, MORGAN & CO.,
75 N. Water St., Philadelphia.

Car Wheel Iron.

100 Tons "Columbia" No. 2 Cold Blast Charcoal Iron.

300 Tons "Salisbury" No. 1, do. do.
For sale by **CHARLES T. GILBERT,**
No. 80 Broad st.

New York, Sept. 21, 1850.

Railroad Spikes.

THE subscribers are prepared to make and execute contracts for Railroad Spikes of a superior quality, manufactured by the New Jersey Iron Company, at Boonton.
DUDLEY B. FULLER & CO.,
139 Greenwich st. corner of Cedar.

**S. S. Keyser & Co.,
IRON WAREHOUSE,**

Corner of South and Pratt Streets,
BALTIMORE, MD.

Selling Agents for the Rough and Ready Bar Iron and Elk Boiler and Flue Iron Rolling Mills, Sarah and Taylor Furnaces, and Wrightsville Hollow Ware Foundry, and Dealers in Bar and Sheet Iron, and Cast, Sheer, German, Blister, Spring and Electroplated Steel, etc., etc.

Railroad Spikes, Boiler Rivets, etc.

THE Subscribers, Agents for the sale of James S. Spencer's, Jr., Railroad and Boat Spikes, Boiler Rivets, and Wrought Iron Chairs for Railroads, made at his Works near this city, will execute all orders with promptness, despatch, and of the best quality.

ALSO IMPORTERS of English refined and Merchant bar Iron; Extra refined Car and Locomotive Axles (from 3½ to 6½ inches in diameter); B. O. Locomotive Tire (welded by Baldwin). Also, supply Boiler and Flue Iron cut to pattern or otherwise.—Spring, Shear, and Cast Steel, etc., etc., etc.

T. & E. GEORGE.

Philadelphia, November 14, 1850.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract for the delivery of English, Welsh and Scotch Rails, of any pattern and weight, also for every description of English, Welsh, Scotch, and Swedish Iron, Railway Chairs and Spikes, Rivets, Bolts, Nuts, Washers, Chain Cables, Anchors, Tin Plates, German Spelter, Iron Castings, and every description of Machinery.

WILLIAM BIRD & CO.,

Iron and Tin Plate Merchants,
44 Wall st., New York.

And at 5 Martin's Lane, City, London,
and 140 Buchanan st. Glasgow.

July 27th, 1850.

**Railroad Spikes, Wrought
Chairs and Fastenings.**

THE subscribers continue to manufacture, with increased facilities, Hook and Flat Head Railroad Spikes and Chairs. The points

being finished by hand, have a long taper, and sharp point, and are much superior to those made entirely by machinery.

We are also prepared to furnish Wrought Chairs, Clamps and Fastenings of every description, either punched or plain. The best quality of refined iron is used in the above articles, and our prices will be made as favorable as any in the country.

The patent Clinch Spike will be found an improvement to secure the rail at the joints.—They drive in the manner shown and are not liable to work loose.

All communications, addressed to the undersigned, will meet with prompt attention.

SMITH & TYSON,

No. 25 South Charles st., Baltimore Md.

Railroad Iron.

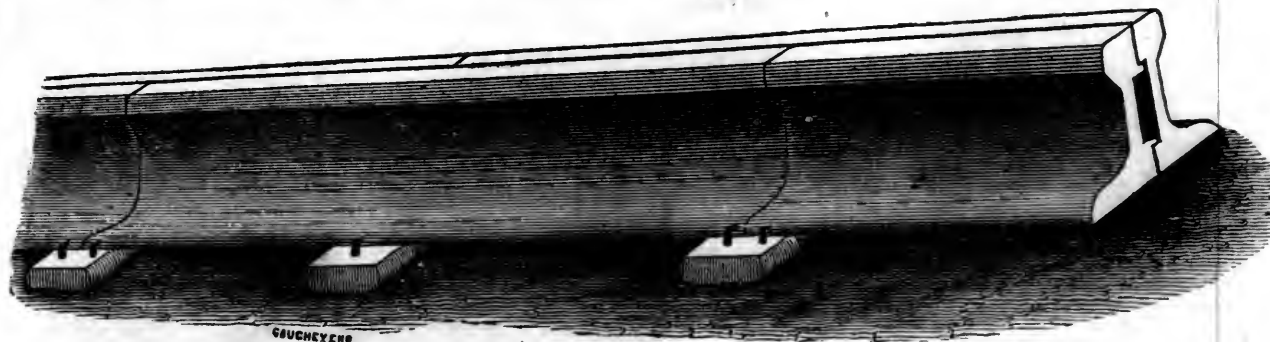
THE "Montour Iron Company" is prepared to execute orders for Rails of the usual patterns and weights, and of any required length not exceeding 30 feet per rail. Apply at the office of the Company,
No. 73 South 4th st., Philadelphia,

Or to the Agents,
CHOUTEAU, MERLE & SANFORD,
No. 51 New st., New York.

September, 1850.



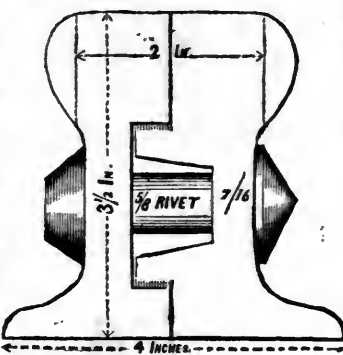
PATENT COMPOUND RAIL.



THE UNDERSIGNED NOW OFFER TO THE Railroad Public a new Compound Railroad Bar, which possesses, as they believe, a decided superiority over every kind now in use. The Cuts annexed will give a good idea of the form of the Rail, and the mode of combination.

This Rail has now been in use on the New York and Erie and the Utica and Schenectady Railroads for nearly two years, and has proved itself to be a *durable and continuous* rail, realizing the advantages of a theoretically perfect rail, over the one in common use. We invite the attention of Railroad Companies to a careful examination of the merits of the form now offered.

The advantages of this Rail are: first, it effects a saving of from 25 to 50 per cent. in the wear and tear of the machinery; secondly, it saves to a vastly greater extent in the repairs of track; thirdly, it secures a much higher rate of speed with the same power; and what is of still



greater importance, it offers complete protection against most of the accidents to which companies are liable. For these reasons, it is believed to be not only the best, but the cheapest rail that can be used. In enumerating its advantages, the proprietors only repeat the statements of competent persons, who have had the best opportunities of judging of its merits.

This improved Rail is now being manufactured at the Works of the Mount Savage Iron Co. in Maryland. Any communications or enquiries addressed to either of the undersigned will receive prompt attention.

J. F. WINSLOW, President,
Troy, N. Y.
ERASTUS CORNING, Albany.
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore.

April 8, 1851.

Faggotted Car and Engine

Axles

FORGED by RANSTEAD, DEARBORN & Co., Boston, Mass.

These Axles enjoy the highest reputation for excellence, and are all warranted.

TO RAILROAD COMPANIES, CAR MANUFACTURERS, etc.

THE Undersigned hereby gives public notice, that the Commissioner of Patents, pursuant to his decision in relation thereto, on the 8th day of October, 1850, issued to him a Patent for the sole right to manufacture, and exclusive use of the **INDIA RUBBER CAR SPRING**, on account of priority of invention of said Spring.

F. M. RAY.

New York, Oct. 23, 1850.

Iron Trade of Pennsylvania.

DOCUMENTS and Statistics relating to the Manufacture of Iron in the State of Pennsylvania—giving a history of the manufacture from its commencement to this date, illustrated by diagrams. Also tables giving the address and capacity of every establishment in the State. Prepared by direction of the late convention of the trade held in Philadelphia. For sale by

LINDSAY & BLACKISTON, Philadelphia.

FIELDING LUCUS, Jr., Baltimore.

HENRY G. NICHOLS, 79 Water st., N. Y.

or at this office—price \$1 00.

It will be sent by mail to any order enclosing the money, and post paid.

Ulster Iron.

THE ULSTER IRON WORKS, Saugerties, N. Y., continue in full operation. Orders for *round, square, flat, band, hoop and scroll iron*, will be received and promptly executed by

J. & L. TUCKERMAN,
69 West St., New York.

Railway Iron.

THE Subscribers will contract to deliver, in the course of the ensuing Spring and Summer, the best English Rails, made by a particular specification, and of any pattern required.

DAVIS, BROOKS & CO.,

63 Broad st.

On hand for sale, English rails of 53 lbs. to the yard, made by particular specifications.
January 10, 1851. 2m

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention.

J. F. WINSLOW, President,
Troy, N. Y.
ERASTUS CORNING, Albany
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md

November 6, 1848.

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phoenix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehanna river; which two establishments are now turning out upwards of 1800 tons of finished rails per month.

Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.

REEVES, BUCK & CO.

45 North Water St. Philadelphia;

March 15, 1849.

LAP—WELDED
WROUGHT IRON TUBES

FOR

TUBULAR BOILERS,

FROM ONE AND A QUARTER TO SEVEN INCHES IN DIAMETER.

THE ONLY Tubes of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER & SON, Patentees,
28 Platt street, New York.

AMERICAN PIG IRON.

"POUGHKEEPSIE" brand, Dutchess Co., N. Y.
"GLEDON" brand, Lehigh county, Pa.
Orders for the above two well known brands will be received, and promptly executed, by

J. & L. TUCKERMAN,
69 West St., New York.

American Cast Steel.

THE ADIRONDAC STEEL MANUFACTURING CO. is now producing, from American iron, at their works at Jersey City, N. J., Cast Steel of extraordinary quality, and is prepared to supply orders for the same at prices below that of the imported article of like quality. Consumers will find it to their interest to give this a trial. Orders for all sizes of hammered cast steel, directed as above, will meet with prompt attention.

May 28, 1849.

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for railroads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.

JOHN F. WINSLOW, Agent.

Albany Iron and Nail Works, Troy, N. Y.
The above Spikes may be had at factory prices, of Erastus Corning & Co Albany; Merrill & Co., New York; E. Pratt & Brother, Baltimore, Md

Stickney & Beatty,
DEALERS IN IRON AND IRON
MANUFACTURERS.

AGENTS for the Baltimore City Rolling Mill, (Works of Messrs. Ellicott) also agents for the sale of the Laurel, Locust Grove and Gunpowder (Balt.) Forge Pig Irons; Hupp's Cold Blast Columbia Wheel Iron, Fort and anti-Eatam Pig Irons. Caledonia, Columbia and Capon Cold Blast Boiler Blooms, warranted; Wm. Jessop & Son's Steel; Old Colony and anti-Eatam Nails; Bar Iron, Boiler Plates, Hoop, Sheet, Oval, Half Oval, Horse Shoe and other Iron. Exchange Place, Baltimore.

Railroad Iron.

2000 Tons, weighing 58 pounds per lineal yard, of the most approved pattern of T rails, in store and to arrive, for sale by

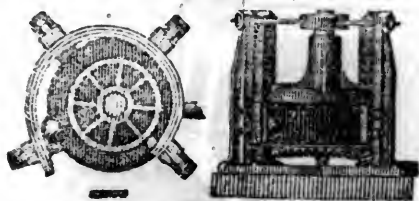
COLLINS, VOSE & CO.,

74 South St.

New York, June 1, 1850.

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phoenixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll smoother, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y.

P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery for making Spikes, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

CHILLED RAILROAD WHEELS.—THE UNDERSIGNED are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

Brown's Old Established SCALE WARE HOUSE,

NO. 234 WATER ST., NEW YORK.

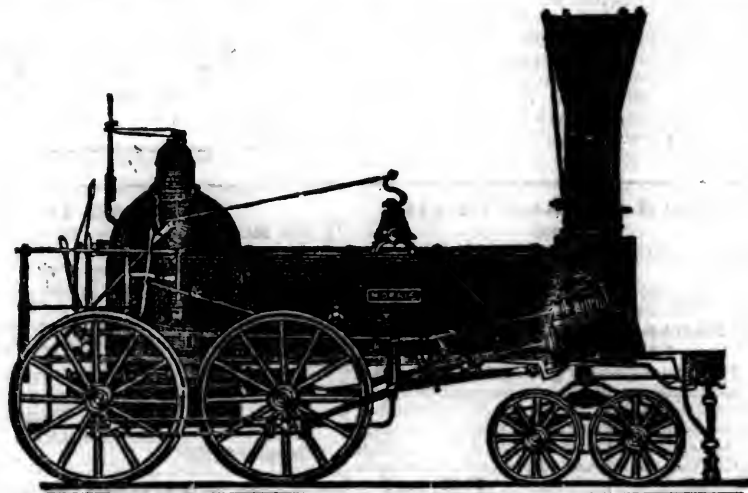
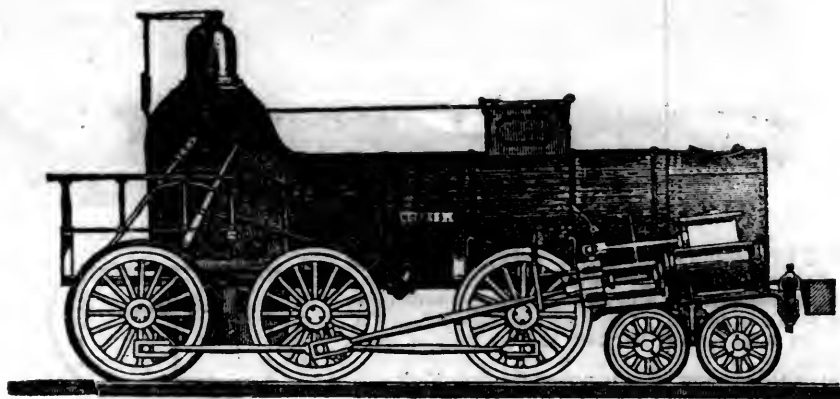
THE Subscriber, Practical Manufacturer of Scales of every description, respectfully asks the attention of Railroad Companies to his Improved Wrought Iron Railroad Track and Depot Scales which for strength, durability, accuracy, convenience in weighing, and beauty of workmanship, are not surpassed by any others in this country.

He is aware that this is rather a bold assertion for him to make, yet he can say with confidence that they have but to be tried to give them precedence over all others.

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AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

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GEN. CHAS. T. JAMES, *For Manufactures and the Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & Co., 136 NASSAU ST.

Saturday, May 24, 1851.

The Opening of the Erie Railroad.

The directors of this great work of internal communication, having brought their labors so far to a close, as to be able to open their road throughout its entire length, determined to celebrate the event in a manner suitable to the magnitude of the undertaking; its vast importance to this city, the line of country it traverses, and the Western States.—Wednesday the 14th of May, instant, and the three succeeding days, were appointed for this purpose. Accordingly, at six o'clock on the morning of the first-mentioned day, the President and Directors of the Company, together with their invited guests, to the number of between three and four hundred, together with the Superintendent, Secretary, Engineer in Chief, and several other officers of the company, embarked on board the splendid steamer Erie, at the foot of Duane street, and proceeded up the river to Piermont, the eastern terminus of the road

on the Hudson. The noble vessel had been gaily decorated with numerous flags and ever-greens tastefully arranged in festoons, and must have afforded a beautiful sight to those who viewed her from the shore, and to the thousands assembled on the dock at Piermont.

Amongst the guests were many of the most eminent men of the nation. President Fillmore, and four members of his cabinet, namely, the Hon. Daniel Webster, Secretary of State; the Hon. Mr. Graham, Secretary of the Navy; Hon. Mr. Crittenden, Attorney General, and the Hon. Mr. Hall, Post-Master General, were received on board a few minutes before our departure from the company's dock, at the foot of Duane street, amidst the plaudits of the passengers, and multitude assembled to witness our departure, the roar of cannon, and the heart-stirring music of the band. Ere the firing had ceased, we were under full way for Piermont. The morning, which had opened gloomy and lowering, now gave signs of improvement, and the spirits of all were cheered with the prospect of a fine day. The air felt soft and invigorating, as it wafted past us the fragrance of the orchards and forest trees in full bloom along the shores of the river. Upon returning to the deck of the steamer, after partaking of the breakfast provided for the occasion, we found ourselves abreast the grandest part of that bold ledge of rocks extending many miles along the west bank of the Hudson, known as the Palisades, whilst the right bank presented a scene of equal beauty, in the numerous and elegant country seats, ensconced amongst the tender foliage of early spring. But ere we had time to fully contemplate this glorious scenery, we were entering the "Tappan Zee," and rounding too at Piermont.

Here a large assemblage of the inhabitants of Rockland County were met, to welcome our arrival, which they did in a right hearty manner. The scene presented at this, the eastern terminus of the road, gave indication of what awaited us throughout the whole line. The immense station house, at the end of the pier, which extends one mile into the river or Tappan Zee, the company's steamers, and freight boats, (a number of which were here moored) and a long line of locomotives, drawn up in single file, and filling nearly half the length of the pier, were all tastefully decorated with ever-greens and flags. Amidst these were to be seen hundreds, if not thousands, of the fair of Rockland

County, whose smiling faces, and waving handkerchiefs, gave evidence of the pleasure they experienced. Presently the cheering ceased, and the excursionists took their places in the trains of cars, two of which were in readiness to transport us to Dunkirk on Lake Erie. The cars, as well as the locomotives that were to draw them, appeared to be entirely new, and their equipments perfect. The former, like all the passenger cars on this road, are constructed in a style of luxurious comfort and ease, unequalled on any other railway in the United States, if not in the world. The road being of the wide, or six foot gauge, admits of the cars being made of a width calculated to insure the greatest amount of comfort to the traveller.

Piermont having been selected by the company as the eastern terminus of the road, some special notice of the place may be expected by the readers of the *Railroad Journal*. Of the village itself, but little can be said: its growth has doubtless disappointed the expectations of its founders, as it contains scarce a thousand inhabitants. It is a place of no commercial importance, though its pleasant and picturesque situation in the break in the rocky wall of the Palisades, may render it a favorite resort and residence for such business men as relish a country residence at a "convenient distance from the city." The terms of the charter, granted by the New York Legislature, required the company to have the terminus of their road, east and west, within the limit of that state. This point being the nearest to the Great Metropolis, practicable for the penetration of the high rocky barrier forming the west bank of the Hudson, within the state, was accordingly selected. Experience has now fully proved the narrowness of the policy of the Legislature, which arbitrarily imposed upon the company such a necessity, when a cheaper and speedier route lay through the sister state of New Jersey, to Jersey City. It is doubtful, indeed, if the three millions subscribed by the state for the construction of the road, and subsequently presented to the company, will compensate for the vast expenditure entailed upon them in constructing this immense pier, and overcoming the great obstacles interposed by nature at this great point. The entire passenger business is now done over the route from Jersey City to Sufferns, at a large cost to the company. This blunder, however, in the location of the eastern terminus, is no fault of theirs, and we will proceed

on our journey to Lake Erie, if the reader will be so kind as to accompany us so great a distance.

But just at the moment when all are listening for the signal of departure, there is a loud call for President, Fillmore and Webster, by the assemblage on the pier, who doubtless would not have wished us God speed, if these distinguished guests of the company had not responded to this call. They accordingly presented themselves on what may appropriately be termed "the Erie railway platform," being a car with a platform, attached to the hinder end of the train, and next to the one containing the Directors and the Presidential party, expressly for this purpose, and made a brief acknowledgment of the compliment.

At five minutes past eight, A. M., the steamer whistle announced that we were about to commence our long journey of 450 miles, to the shores of Lake Erie, and anon we were in motion. As we passed up the pier, the band which was to cheer us with its enlivening music amongst the hills and valleys, struck up a heart-stirring air, and we were again greeted by the shouts of the multitude, the firing of cannon, and the almost deafening shrieks of at least 20 locomotives in full blast. But we have omitted to mention that during our brief stoppage on the pier, the people of Rockland County presented the Company with a flag, beautifully wrought, by the ladies, with a motto significant of the boon conferred on the county by this great work of internal improvement. We may also mention that similar presentations took place at every station (over sixty in number) on the line of road; some of these we may hereafter mention more particularly.

Shortly after commencing the first ascending grade, a slight incident occurred, somewhat emblematic of the first commencement of the work. The locomotive, though new, powerful, and perfect, suddenly came to a stop, where no stop was intended, and obstinately refused to budge an inch. Everybody began to inquire what is the matter? Why are we stopping here? The questions were presently answered. The resinous quality of the wood had stopped up the flues, and lessened their draught. In a few minutes the second train came along and pushed us up the slope in the most neighborly manner. We are now fairly set out upon the excursion, and on we go assisted in this way for several miles, clearing the hills at the rate of sixty feet in the mile, following the course of a small stream called the Sparkill. This part of Rockland County is rough and very unpromising as an agricultural district. Some portions of it, however, are turned to good account for grazing, and raising of cattle. Here, we are informed by the admirable Guide to the New York and Erie railroad, published by the Harpers', is produced in considerable abundance, milk, and other articles of the dairy. Whilst referring to the above-mentioned Guide, we would strongly recommend every person going over this road to procure one before starting. Its sketches of scenery and descriptions are admirably got up and true to nature. In addition to the above products, this county is famous for its strawberries, and we learn from the Guide that eighty thousand baskets of this delicious fruit were brought down in a single train last year. From the immense business done in milk, for more than fifty miles, this part of the road has been quaintly termed the "Milky Way."

At ten miles from Piermont the country becomes more picturesque, and we are passing over classic ground. It was in this neighborhood that Washington carried on some important military opera-

tions in the revolution. On our right, as we passed a statue of the hero, cut out of a single stone, by the self-instructed artist, Mr. Thom, we gave three hearty cheers for the "father of his country."

The time limited for the journey did not admit of the trains stopping at all the stations. It had therefore been arranged to hold up at about every fourth one, being one or two of the most important in each county. At the others, the engineer slightly checked the speed, to enable the officer, appointed for the purpose, to receive the flags. At each one, however, were assembled large numbers of people, men, women and children, who greeted the flying train as it swept by with waving handkerchiefs, huzzas, and often with the firing of cannon. At sixteen miles from the pier, we passed Sufferns, the point where the Patterson, Ramapo, and Union Railways (forming the line now used, by an arrangement with the Erie company for transporting the passengers of the latter road) intersects our line. The country here improves in appearance, and the scenery in interest. The numerous orchards in full bloom, and the many fine farms sweetly slumbering in the quiet valleys, or stretching boldly up the hill sides and often crowning their tops, are pleasing objects of contemplation, whilst ever and anon the eye catches glimpses of higher hills and more imposing scenery in the distance, both on the right hand and the left this description of scenery continues to improve in effect as we enter Orange County, some fifteen miles beyond Sufferns. But we have too little time to dwell upon the beauties of the scenery on this part of the route, for we are just arriving at Middletown, our second stopping place since leaving Piermont, seventy-seven miles from New York. Here we found a goodly array of the youth, beauty and manhood of Orange County, drawn up in front of the station house to welcome our arrival. On the usual call for "Fillmore and Webster," these gentlemen presented themselves on the travelling platform, and the former made a short and appropriate acknowledgment, which was interrupted by the neighing of the iron horse, and the starting of the train. Middletown is a thriving place, quite noted for its iron works and foundry.

As it is our wish, in jotting down some of the incidents of the excursion, at the same time to note interesting scenery and the more striking features of the route, as well as to remark on important points, in this great main track of railway, we would here refer to one of the latter, passed before reaching Middletown. Near Turners, at a distance of sixty-four miles, via Piermont, from New York, and fifty-four via the Patterson route, there is a branch railway to Newburgh nineteen miles distant on the Hudson. This branch is owned by the company, and was opened in January, 1850. The object of its construction was to bring the more northern and river counties, into direct communication with the "southern tier," and with the west. These objects, it is said, have been fully realized.—The completion of this important branch, on the same scale as the main trunk, more than a year before the latter was opened, affords evidence of the determined character of the men who have at length achieved a work of such gigantic magnitude, and which has cost over twenty millions of dollars.

After leaving Middletown we gradually enter a wilder and more mountainous country. We are now ascending the easterly slope of the Shawangunk Mountain at a tolerably moderate grade, near the western confines of Orange County. Many fair farms still present themselves to the view, which

relieve this part of the route from the wild desolate aspect it has in winter, when the absence of green fields and luxuriant foliage, exhibit this broken section of country in all its naked ugliness. On nearing the summit, and descending the western acclivity of the mountain, which is quite precipitous, towards the Delaware, the scenery becomes grander and more varied. As we traverse this rocky barrier lying along the easterly side of the Delaware, and its tributary the Neversink, the views that open themselves to the sight in rapid succession, to the delighted traveller, are truly magnificent. As we emerge from one of the heaviest rock cuttings on the whole line, the beautiful valley of the Neversink, lying several hundred feet below us, stretches far away to the north-east, where lovely farms and orchards lay spread out before us, as on a map. As the road curves round a point of the mountain to the south, the pretty village of Port Jervis, near the banks of the Delaware, becomes visible, and a little further on, the village itself. The western descent of this mountain pass is two hundred feet more than the eastern slope, and it was at one time in contemplation to make a tunnel under the mountain, two or three miles in length. But this difficulty was subsequently overcome by changing the route a few miles to its present locality.

The appearance of the Delaware region looking down the river a dozen of miles from this point, is quite different and much more inviting than that of the long reach that lies before us. The hills which wall it in like an immense chasm, for nearly a hundred miles up the stream, seem, when viewed here, to recede from each other, leaving a considerable quantity of bottom land, or flats, which present many indications that the busy hand of labor has been at work upon them. When we have finished the descent of the mountain, the road turns again to the west, and crosses the Neversink, which here empties into the Delaware, and in a few minutes we reach the Delaware station, half a mile south of Port Jervis, which latter is situated on the Delaware and Hudson Canal. The usual formula of presenting a flag to grace our train took place, and the usual call for Fillmore and Webster was heard, which, as usual, was briefly responded to, and we took our departure under a salute of cannon, and the horrible din of thirteen or fourteen locomotives finely decorated, and drawn up in array on a side track. This was regularly running the gauntlet. Near Port Jervis the three states, of New York, Pennsylvania, and New Jersey meet. Port Jervis has a considerable trade in coal and lumber, carried on, on the canal. We have some doubts whether the village itself will benefit much by the railway, though the surrounding country doubtless will.

We have now passed over what is termed the "Eastern Division" of the Erie railroad, and have endeavored to give some general view of the features which it presents. To those who cannot make a trip over this interesting portion of the road, we recommend a perusal of the Guide book, before referred to, which will afford an excellent idea of the varied scenery it presents. We now cross the Delaware into the State of Penn., which charges the Company \$10,000 a year for the privilege of conferring on its people the blessings of a railway. The character of the scenery now changes, and with little variation, presents a most monotonous wall, rising in very many parts abruptly from the river, several hundred feet in height, receding at the top, and extending most of the way to Deposit, a distance of ninety miles. Here the road leaves

this rough, and but for the river itself, gloomy region, to pay a visit to the more beautiful and sunnier valley of the Susquehanna. Though there are a few points in this great distance along the Delaware section, or division, which are exceptions to the above general description, they do not merit particular note. The principal business carried on in this desolate region is in lumber, which is floated down the river, at high water, to Philadelphia.

The railway hugs the back of the Delaware, where sometimes, the entire width of the track has been cut out of an almost perpendicular bank, with a pertinacity truly surprising. It continues on the Pennsylvania side, to within four miles of Narrowsburgh, which is thirty-four from Delaware, and then crosses into New York. On the opposite shore of the river runs the canal, until it reaches the Lackawaxen, twenty-five miles from Delaware. Here the canal crosses the river in a wooden aqueduct, and extends up the valley of the Lackawaxen to Honnendale, in Pennsylvania, where it meets a railway connecting it with the coal mines at Carbondale.

The canal, like the railway, seems to have been equally cramped for room; but instead of encroaching on the base of the lofty range of hills which beetle over it, in the manner noted by its neighbor, it has stolen a march upon the river.—Here the traveller as he is continually rushing past the sluggish moving tow boats, has a good opportunity of contrasting the comparative merits of the two great classes of internal improvements, railways and canals. Any man who has ever given the subject the least consideration must see that the days for building canals are past. Time is everything in business, and although railways are as yet but in their infancy, they have demonstrated their superior advantages for the transport of every kind of merchandise. The lumber merchant on Lake Erie would rather pay two dollars a thousand more to have his lumber brought in three days from Dunkirk to New York, than wait three weeks to transport it by the Erie canal. By the former route he could turn over his money three times where he can twice by the latter. We venture to predict, that by the year 1875 there will be at least four double track railways from New York to the western lakes, and that the propriety of closing up the Erie canal will be seriously discussed by that time.

But as we have much to see and report before reaching Lake Erie, we must be jogging on our way. At Narrowsburgh we stop twenty minutes to dine, and after the usual ceremonies are performed, take our departure at 2 P. M., more than an hour behind time, all the better for an excellent dinner. Our next stopping place is Deposit, and the engineer lets on the steam "with a rush," and we sweep round the long and graceful curves of the Delaware, the most redeeming features in this part of the route, at the rate of thirty miles an hour. Sometimes we are running north, sometimes south along this serpentine river. At times we seem to be making a retrograde movement, for we have got the sun at 2 P. M. on our right, but our general course is westward ho! We pass a number of stations without halting, merely easing off steam, to receive the flags which are always forthcoming. Several of these stations rejoice in such names as Nobody's Point, Cohecton, Calicoon, Fremont, Equimenk, Hale's Eddy, etc. There is no improvement in the scenery. The same rocky barrier rises on both sides of the river, here and there broken by small tributary streams, which are said to

abound in fine brook trout, especially near Deposit. Such a country, of course, presents but few indications of civilization, being a region of hemlock, there is, however, some business done in the tanning line. But we are now nearing our last calling place on the Delaware. Deposit has some good points. The situation is picturesque, and it is reported to be a very healthy locality. It is now past 3 o'clock, and we are expected to be at Elmira at 6 nearly 100 miles distant, and have several "calls to make on the road." The speeches are cut short, as they usually are, by the snorting of the iron horse, and we are off for the more sunny region of the Susquehanna, 15 miles distant. We now pass out of Delaware into Broome county, but ere reaching the beautiful Susquehanna, we have to climb a mountain barrier 1366 feet above tide water, and 368 above the Delaware, at the point where we left it, and there is but eight miles to do it in, so up we go at the rate of 58 feet to the mile. The scenery is wild and romantic in the extreme. As we approach the summit and begin to descend, the difficulties of the route increase, and we are almost struck with awe at what human genius has here accomplished. But capital, directed by genius and skill, can do almost anything.

A tremendous scream from the locomotive announces that we have reached the summit. The unearthly sound reverberates again and again from hill to hill and from hill to valley. We are now running through a tremendous chasm in the mountain top, and in a few minutes the train is stationary on the Cascade bridge, a vast wooden structure of a single arch, 275 feet long, and 184 above the bottom of this enormous ravine. The span of this arch is said to be the greatest of any in the world. Five minutes are allowed to contemplate this wonderful achievement of engineering skill, the train, locomotive and all, resting securely over the awful abyss below. The cost of this bridge was \$70,000, and the time required for its completion a year and a half.

One and a half miles further on, we make another momentary halt on the Starrucca Viaduct, the greatest wonder of the whole road. It is constructed of stone masonry, 1200 feet long, 110 feet high, and is supported on 18 arches with spans of 50 feet each. Its body is 24 feet wide, and on top 30 feet, so as to admit of a double track. But the best point to view this immense and costly structure is from the opposite side of the curve which the road takes as you descend to the valley of the Susquehanna, about a mile distant. This work alone cost the company \$320,000—a rather costly 1200 feet. These artificial objects of interest, and the sublime nature of the scenery on our immediate track have almost made us forget that the noble river we are approaching has already shown its silvery waters and pretty banks to the traveller, wearied with the savage wilds he has passed. There it lies with its beautiful meadows and graceful meanderings on our right. The rich foliage and blossoms, of which we have seen but few signs in the higher and more mountainous part of the journey, afford evidence that we are entering a more genial clime. Our limits will not allow us to do justice to the many beauties which this new region exhibits to view. We have had enough of the "sublime and beautiful" both in art and nature, to be content to part with a portion of these characteristics for the equally pleasing, but more quiet features which are to greet the vision for the next hundred miles

along the lovely vales of the Susquehanna and its tributary, the Chemung. As we proceed after a brief stoppage at the village called after the first named river, the scenery becomes every moment less wild, and the farms and villages more attractive.

It is from the country we are now traversing that the Erie railroad derives by far the largest portion of its way business. Not long since, we had the pleasure of spending a few days at the prettily situated village of Great Bend, 8 miles from Susquehanna, and were favorably impressed with the capacities of the surrounding country, by the number of people, who daily arrived and departed by the trains, and the large amount of freighting done here. Before the opening of the railway the only outlets for these extensive and fertile regions were by the stage road to Newburgh, on the Hudson, distant 120 miles, and by the Cayuga and Seneca Lakes, the latter of which is connected by the Chemung canal with the Susquehanna region.—The benefits which the railroad has conferred upon the people of this fine agricultural district, cannot readily be estimated. It has already doubled their farms in value, by the greatly increased facilities of trade; and these benefits are only just beginning to be felt. The stimulus given will in a few years increase the production and business of every kind ten fold. Thus will the people be enabled to give back to the proprietors of this great enterprise in the shape of increased business, a portion of the advantages they have received. Nor are these mutual benefits to stop with the country in the immediate vicinity of the present road. Numerous branches are projected at the most eligible points to extend them far into the country. At Great Bend the Erie road is to be intersected by the Leggett's Gap railroad, running up to the great coal region at Carbondale, 45 miles distant in Pennsylvania. This road is nearly all graded, and will be opened in the autumn of this year. At Elmira there is a branch connecting with Seneca Lake, which has been in operation for 18 months, and has rendered this a favorite route, between this city and Western New York and Canada. This branch is in the course of extension to Canandaigua, from whence it is proposed to construct a new road to Rochester, to connect with the Rochester, Lockport and Niagara Falls road now building. From the latter point the Great Western railway company of Canada are making a road to Windsor, opposite Detroit, touching at Hamilton, at the head of Lake Ontario. When these roads are all completed, some three years hence, this will be the speediest possible route from New York to Michigan. The whole distance, about 650 miles, can then easily be performed in 32 hours, being only 20 miles an hour.

Other branches are in contemplation from these rich valleys, both to the north and south, so that in a few years the Erie railway will be one of the greatest main trunk lines in the United States.—Long before the company can build a double track, it will be unequal to the exigencies of the way business alone. At Hornellsville, 332 miles from New York, via Jersey City, a branch is being built to Buffalo, so that that great emporium of trade will yield to our road a share of its business. That city, and the entire community, west and east, have already felt the benefits of the opening of the Erie railway, in the reduction of fares on the Central New York lines. Since the opening of the Erie road, as far as Elmira, and the new route by the Seneca Lake, the directors of these

roads have been compelled to bring down their fares from Buffalo to Albany from about \$10 to \$6. Nor have the stockholders suffered a loss by the reduction. The great increase in the passenger traffic, caused by cheap fares, has more than made up the deficiency, and proved how short-sighted had been the former policy.

We have now devoted so much time in endeavoring to make the reader comprehend its vast importance to the people, for whose more immediate benefit this road was undertaken, and in describing the highly interesting scenery of the eastern part of the line, we must pass over the rest of the route, which is much tamer in scenery, with fewer observations. We shall also make but few remarks upon the incidents of the excursion, and the speeches of the great men of the party. These have already appeared *in extenso* in the daily papers. Our purpose has been to take note more particularly of such matters as were likely to escape the observation of the reporters of the daily press.

At Great Bend, so called from the immense sweep which the river here makes to the south, the road enters the land of Penn again, and follows the valley of the Susquehanna till it reaches the Chemung at the town of that name, 270 miles from New York, via Piermont. We make a five minute's call at the large and beautiful town of Binghamton, connected with Utica by the Chenango canal, the former outlet for its trade. Here we were joined by Ex-Senator Dickenson and his wife and daughter, the only ladies of our party.

At this point of the road the traveller notices the commencement of a double row of half-decayed posts driven into the ground and following the general course of the track. In 1841, when a powerful effort was made to hasten the completion of this road, the company, acting under the advice of the then engineer, proposed to build the track on piles, and with a steam machine invented for the purpose, actually drove a double row over 100 miles long. Under a wiser management, however, this absurd plan was subsequently abandoned and the rotting piles stand forth in formidable array, as monuments of the folly of those who devised this novel mode of railway making.

We stop at Owego, connected with Cayuga lake by a branch railway 30 miles in length. This is also a fine town of 4,000 inhabitants, and next in importance to Binghamton on the route thus far. Our next halting place is Elmira, about the size of Binghamton, (5,000 inhabitants.) Here arrangements have been made for a grand reception, and we are to stop for the night.

Several volunteer corps, and the entire of the fire department, in uniform, with their rich flaunting banners, were drawn up in front of the platform of the station, so as to keep the vast crowd, assembled to do honor to the occasion, from encroaching on the cars. The whole scene was most imposing, and the arrangements for forming in procession, to escort the directors and their guests to the hotels allotted for them, were admirable. At 7 o'clock President Fillmore and his Cabinet were conducted from the cars and presented to the good citizens of Elmira and neighborhood, and received with three hearty cheers. After the delivery of a somewhat lengthy speech of congratulation, by a gentleman of the place, the procession formed and marched through the beautiful town to the large hotel kept by Mr. Haight, where Mr. Webster and about 200 of the party were left to take up their quarters.—President Fillmore and the rest of the excursionists, were escorted to Mr. Brainard's Hotel. At

both these splendid houses bounteous provision had been made for all by our liberal hosts, the board of directors.

President Fillmore, Mr. Webster, and the other members of his Cabinet, as also Mr. Seward, who joined us here, were severally called for, and made appropriate speeches. These having already appeared, as we before stated, in all the dailies, would not be interesting at this time to the readers of the Journal, so we omit them. All our party were struck with the magnitude and splendor of the two hotels at Elmira, particularly the Brainard House, which would do credit to New York. Indeed we doubt if there is any hotel in the city that can boast of a like number of so elegantly furnished rooms. The character of the hotels in a place are generally taken to afford good evidence of its refinement, as well as business capacity. Judging from this, and the air of comfort, every where visible in its streets, Elmira must be a very charming place for summer residence. It is decidedly the most thriving town on the whole line of railway. Hitherto it has owed its rapid growth to the Chemung canal, connecting it with Seneca Lake. By this outlet a large trade was carried on in lumber and agricultural products, which enabled it to supply an extensive district of Northern Pennsylvania with all kinds of goods, received in return for the above articles.

The Erie railway will doubtless add greatly to the prosperity of this fine town. The branch road to Jefferson, before referred to, sets off from the main trunk, a few miles west of the town; and to the south extends the Williamsport railway, now nearly completed, far into the adjoining State. It was here where General Sullivan attacked and defeated Brandt and his combined Indian and English force during the Revolution. It is also noted as the residence for a short period of the celebrated Talleyrand, and later of Louis Phillipe.

Elmira is 273 miles from New York, via Jersey city, and 187 miles from Dunkirk.

Next morning, May 15th, the trains were again in motion for Lake Erie at 6 o'clock. The country from Elmira to Corning, our next stopping place is very much the same as that passed after leaving Great Bend. It is rich in agricultural resources. Corning is 291 miles from New York and 169 from Dunkirk. It has a population of about 1,800, and is the last town of any dimensions on the road. The feeder of the Chemung canal is carried from hence to Elmira. Here another branch road to Buffalo, called the Buffalo and Cohocton valley railroad has been commenced, a portion of which, to Bath, it is expected will be opened in August next. Corning is distant by this route 135 miles from Buffalo. The Chemung river looks as wide and pretty here as the Susquehanna.

After the usual ceremonies are over we proceed onwards. Crossing the Chemung one mile from Corning, the railway enters the less interesting and poorer valley of the Cannisteo, a branch of the above named river, and follows it to Hornellsville, 332 miles from New York, and 128 from Dunkirk. This is a place of about 1,000 inhabitants. From this point another branch is building to Buffalo, 90 miles distant, via Attica. Leaving this, our road follows the course of the Caniacadia Creek, and crosses the summit between the waters of the Cannisteo and Genesee river at a 50 feet grade. As we proceed the country gradually becomes less cultivated, and there are fewer objects to admire,

except the ingenuity and skill displayed by the engineers in finding a way for the railroad through so wild, rocky and desolate a country, as we are now approaching.

At Andover, a village of four hundred inhabitants, the train holds up again for five minutes, and in twenty minutes afterwards we are rolling along the Genesee, which empties its waters into Lake Ontario near Rochester. After following this river a few miles, the railway crosses over the ridge which divides the waters flowing into Lake Ontario from those running into the Mississippi, and we next invade the quiet village of Cuba, a place of eight hundred inhabitants, situated on Oil Creek, a small tributary of the Alleghany. We are now in Cattaraugus county; shortly after we stop at Olean, on the Alleghany, three hundred and ninety-five miles from New York, and sixty-five from Dunkirk. At this point a considerable lumber trade is carried on by the river, a portion of which will doubtless be absorbed by the railway hereafter. At Great Valley sixteen miles further on, we called a few minutes, where the usual reception and speechifying took place. Here were several hundred Indians in their holiday dress, as well as a large concourse of white people, met to witness so marvellous a spectacle as our gaily decorated train presented, in these hitherto almost inaccessible regions. Most of these people had never before seen a locomotive, or railway car, having come from a distance of many miles. The appearance of so many of the natives of the forest, with their picturesque costumes, and astonished visages, in this wild secluded valley, excited general observation, and was regarded as quite an incident in our journey. But the woods soon echoed to the loud scream of the locomotive, far more savage in its notes than the fierce war-cry of the savage himself, and we dart along and shortly enter Chateaugue County, having its northern boundary on Lake Erie. We are now descending the valley of a small creek emptying into the Lake, which first becomes visible some fifteen miles from Dunkirk. The engineer announced this gratifying intelligence by a loud screech of the whistle, and one and all of our party gave three right hearty cheers for Lake Erie.

Presently after we were met by a deputation from Dunkirk, brought out by an engine, to announce the order of the day for the proceedings at the western terminus of the road. The second train shortly hove in sight, and being detached from its iron horse was joined on to ours. The sixty flags we had received, representing so many different stations, were now unfurled in a long line on the centre of the cars, and every preparation being made to enter Dunkirk with flying colors, we set out in fine style. Our train, now a quarter of a mile long, presented a magnificent spectacle as we entered the town about four o'clock, p.m., amidst the cheering of the vast multitude awaiting our arrival, and the firing of cannon—our band playing a lively air. What splendid preparations had been made by the good people of Dunkirk for celebrating this joyous and interesting occasion, in a manner becoming its importance, and commensurate with the magnitude of the great enterprise itself; what speeches were made by Presidents, Cabinet Ministers, Senators, and Governors; what good cheer the attentive directors had provided for their guests at the Loder Hotel; what champagne was discussed; what a banquet of roasted oxen, and sheep, and porkers, was spread out in the immense station-house, *pro bono publico*; what thousands of the youth, beauty, and manhood

of this fair region, and from Buffalo, and all the country round about, were assembled together; have not all these things been recorded in those enterprising chroniclers of passing events, the daily papers of New York? These and many other little incidents of this brilliant pageant at Dunkirk, including the bonfires and illuminations, would alone fill a dozen columns of the *Railroad Journal*.

The writer desires here to record for himself a pleasing incident of a personal nature, which occurred whilst noting the speeches at the Lodi House; it was the accidental acquaintance which he made of a leading gentleman of the place, and his agreeable lady, and her sisters, of whose hospitalities, he and his travelling friend, (who represented the *Home Journal*) were invited to partake. It led to his making a visit to the delightful village of Fredonia, three miles distant from the Lake, to spend the night in a more comfortable manner than the over-crowded accommodations at Dunkirk admitted. Such civilities as those referred to ought ever to be held in grateful remembrance.

Of the village of Dunkirk but little may be said; it is a place of eight hundred or ten hundred inhabitants, and requires a large outlay yet to make a good harbor. We are of opinion that the good people there are destined to have their expectations respecting the rapid growth of their town disappointed. It will not be long before the Erie railway will be pushed further up the Lake shore, when Dunkirk will be a mere calling place. There is one thing that will always favor it, however. It has a fine back country, which will ever continue to make this their entrepot on the Lake. A more beautiful and rich farming district, is not to be found in the State of New York. The climate, too, is favorable, and the vegetation and foliage appeared to be nearly as much advanced as at the seaboard, and very much ahead of anything we had seen on the road.

We have now conducted the patient reader over the whole length of this gigantic private enterprise, and endeavored to give him some conception of the grandeur and variety of the scenery it presents to the eye, as he traverses this vast region of country; of the agricultural and commercial capabilities it develops, and at the same time to make him acquainted with the imposing ceremonies attending its formal opening. We had intended to have concluded with a condensed history of its commencement and progress to its final completion; but this must be deferred to another time. The New York and Erie railroad, when we regard its length, and the extraordinary difficulties to be overcome in crossing mountain and rocky barriers, in penetrating and pursuing the beds of numerous rivers and streamlets for hundreds of miles, now following a tributary of the Hudson, now the winding narrow defile of the Delaware, then pursuing its course along the beautiful vales of the Susquehanna and Chemung, which empties its waters into the Chesapeake Bay, and anon tracing streams for many weary miles which discharge themselves into Lakes Ontario, and Erie, and the Mississippi river—when we take all these things into account, the New York and Erie railroad lays high claims to being one of the greatest achievements of human skill and private enterprise. In the magnitude of the undertaking, and the cost of its construction, it far exceeds the hitherto greatest work of internal improvement in the United States—the Erie Canal. When we consider its length, which exceeds that of the great railway, building by the Russian government, from Moscow to St. Petersburg; when we reflect

upon the extensive tracts of country, teeming with rich products, it has opened up in the interior of New York and Pennsylvania, and when to these we add the vast amount of traffic it is destined to carry on, both in passengers and freight, between New York city and the great States of the west, it is doubtful whether any similar work exists on the earth to compare with it. Its benefits are already felt by millions, and millions more will yet experience them. By its means the vitality and energy which ever exist in the great and rapidly increasing city of New York, will be infused with almost lightning speed, over far distant and heretofore secluded settlements, carrying with them the blessings of increased civilization, knowledge, and refinement, freed from many of the vices of great cities. The country thus stimulated and improved, will send back to the city a rich and never-failing stream of supplies and products. Such are some of the advantages which this great work is already conferring, both on country and town. Let the croakers and false prophets who predicted that the New York and Erie road would never be completed, and if completed, would not pay running expenses, now hide their diminished heads and hold their peace forever after.

In conclusion, we would respectfully acknowledge the very handsome and liberal manner in which the President and Directors treated their guests on the excursion to celebrate the completion of their road. Many thanks are due to their gentlemanly Secretary, Mr. Marsh, for his unwearied attention to the comforts of the party. These obligations were duly acknowledged by the guests at Narrowsburg, on our return trip, where appropriate resolutions were enthusiastically passed. What all must congratulate themselves upon, is the circumstance that the whole distance, of near a thousand miles, going and coming, was traversed without the slightest accident or mishap to any thing or any one connected with the trains.

East Tennessee and Georgia Railroad.

When at Cleveland this week we had an opportunity of learning of the progress of this road. Mr. Pritchard, the enterprising chief engineer, since he has taken charge of the work, has pushed it forward in a manner that has surprised even the most sanguine friends of the road. Almost without means—having to reap a scanty pay after his work was done—and against a general belief that there was a *fatality* attending the building of that road, that made many stand aloof, Mr. Pritchard has worked his way until he has crossed the Tennessee line with the cars, and now daily runs about 23 miles. The grading and superstructure necessary for laying down the iron on the balance of the road to Blair's Ferry on the Tennessee River, is nearly completed, and early in June "the snort of the iron horse" on a Tennessee road will be heard in Cleveland, and without much delay for compliments from the good citizens of that beautiful town, will strike out for his destination, and before a long season, salute the inhabitants round about Blair's Ferry. The completion of the East Tennessee and Georgia railroad, is destined to do great good in East Tennessee. Already the farmers and others along the lines, are inspired with hopes; land and other real estate has increased in price and value, greater industry is called out, and a healthy feeling exists among the people. The road will soon be completed at Knoxville—another carried through to the Virginia line—and yet another, now full under-way, running through the rich valley of Western Virginia, and finally connecting with the great chain of roads to the northern Atlantic ocean.

A link between this ultimate destination and the Mississippi Valley is broken. That the great thoroughfare may be complete, it will be necessary to supply this link by building the "Chattanooga, Harrison and Cleveland road." The route is over

most favorable ground, through a rich country, and makes a direct connexion in our State between the Nashville and Chattanooga, and East Tennessee and Georgia railroads—shortening the distance, we believe, about thirty miles. This link can be—must be supplied. With a proper effort, some, if not all the stock can be obtained along the line—but without home assistance, the road can be built by transfer of the charter to others. We hope something will be done to get this branch road soon under way before the meeting of our next Legislature.—*Chattanooga Gazette, 9th inst.*

From the London Mining Journal.

On the Use of Caustic Lime, instead of Limestone, in Blasting Furnaces.

BY GEORGE PARRY.

The results obtained at the Ougree furnaces by the use of quicklime, in lieu of limestone, are very striking; and the continued success attending its use seems now to have fully established its superiority. One of the causes assigned is the absence of the cooling effects, at a low region of the furnace, from the absorption of heat by the carbonic acid during its change of state—from the solid to the gaseous. In furnaces using so large a proportion of limestone as 24 cwt. to the ton of iron, as at Ougree, the effect on the temperature from that cause must be considerable, and tend to narrow the zone of fusion, thereby diminishing the power of the furnace in melting a certain weight of prepared material in a given time—that allowed for the combustion of a determinate quantity of fuel. Besides this, the presence of carbonic acid, as an oxidizing agent, is highly objectionable in that part of the furnace depended upon for the reduction of the ores; for, as it is well known, iron at a high temperature possesses the power of decomposing it by abstracting a portion of its oxygen. Again, if the ascending current of gas is really converted into carbonic oxide by contact with the superincumbent incandescent coke, its volume will be doubled, and its capacity for heat increased—hence another source of frigorific influence on the furnace. Messrs. Bunsen and Playfair, (*Report of Iron Furnaces, British Association, 1845*), however, do not show that any such change takes place during the passage upwards; and their experiments were conducted with the most scrupulous regard to accuracy. The gases were taken from a furnace fed with bituminous coal, but only 36 feet high. Possibly the superior height of the furnace at Ougree, 54 feet, together with the circumstance of its being supplied with coke, proved the means of subjecting the gas to a higher column of incandescent carbon, and thereby have effected the change.

Ebelmen, on the contrary, gives an increase of carbonic acid in the upper part of the furnace; and the analyses quoted in Overman's work are in the same predicament. From these discrepancies it will be interesting to have the promised details of the examination of the gases made at Ougree. Little attention seems to be paid to the preparation of the materials supplied to furnaces, with the exception of the ironstone—every furnaceman dreading the use of it imperfectly calcined, well knowing from experience the inability of the furnace to smelt it in the usual proportions. Yet it has passed through the kiln, and all its moisture has evaporated. What, then, can be the cause of its injurious effects on the action of the furnace? The presence of carbonic acid, with which the oxide of iron is combined, the calcination not having been carried sufficiently high to expel it. The question of temperature at the zone of fusion, also, is generally confined to what can be done in its *immediate locality*, by applying blast as hot as can be obtained with safety to the heating apparatus—it requiring too great a stretch of the imagination to conceive how a slight difference, made at so distant a point as the mouth of a furnace can possibly effect its temperature at bottom. Such, however, is the fact; and one-half of the benefits conferred by the application of heated air may be easily nullified by inattention to this particular. It is not quantity of heat that we want in a blast furnace—it is *intensity* sufficient to create a more active play of chemical affinities in the laboratory of the furnace, and a more rapid and complete dissolution of the reduced minerals in the zone of fusion before they

reach that of combustion, and become re-acted upon by the oxygen of the blast.

In order to forward this desirable state of things from above, it must be considered that the temperature of the descending materials at any given point is always in *arrear* of that of the ascending current of heated gases, and will become *more so* the greater the quantity of volatile matter they contained at their introduction, whether they may be of a nature to become dissipated before they arrive at a state of incandescence—such as moisture—or after having passed that point, as the gaseous and other matters evolved during the distillation of coal, and the carbonic acid from uncalcined carbonates. The effect of these combined cooling influences is to allow the minerals, before they have attained a certain determinate temperature—say, that necessary for deoxidation or fusion—to be carried to a lower point in the furnace than otherwise would be, had they not existed. Thus the zone of fusion will have become reduced in breadth, and insufficient for performing its functions without encroaching on the zone of combustion below, with all its attendant evils—scouring cinder with loss of iron, bad yields, and inferior quality.

This is not all; the supply of fuel also reaching the blast at a correspondingly reduced temperature, is now unable to give out so great a degree of heat by its combustion; and this diminution goes on increasingly for some time, till an equilibrium is established. The modern domed-form of blast furnaces with a wide mouth, in a great measure counteracts the above defects, by effecting the absorption of more of the heat of the ascending current of hot gases than can be obtained by the old conical narrow-topped furnace; for at a certain limited depth the capacity of the former would be found fully double that of the latter; consequently presenting twice the surface of minerals to the action of the gases. These, also, in passing through this enlarged region, move with only half the velocity, and therefore, give double the time for the abstraction of their caloric. Hence it follows that by doubling the capacity of a furnace at the upper parts, or where the transference of heat goes on with the greatest rapidity from the continued influx of cold materials, *nearly four times* the amount is collected and carried down by the descending masses. That narrow tops consume a great deal of fuel, is an old and general complaint; and possibly the above considerations may afford an explanation of the cause.

The theory of conduction upwards cannot be admitted—there not being the slightest analogy between the transference of heat from the bottom to the top of a furnace, and from one end of a bar of iron to the other. The latter is a good conductor of heat while the furnace is filled with bad ores. It would take months to convey the heat through such a disintegrated mass by conduction alone; while the passage of the gases effect it in a few seconds. Practically, the heat would never reach the top by conduction; it would be dissipated by radiation from the sides of the furnace, faster than the loose matter in its interior would take it by conduction.

Ebbw Vale Iron Works, January 30.

Louisiana.

Opelousas Railroad.—The New Orleans Crescent states that at a meeting recently held in that city, upon the subject of the above work, Colonel Payne, who had recently visited the parishes of Opelousas and Attakapas, for the purpose of promoting the construction of this road, made a report, of which the following is an abstract:—

The distance from New Orleans to Washington, the point of embarkation for Opelousas, and within four miles of it, is 153 miles. The cost of the road is estimated at \$1,600,000. The Attakapas and Opelousas parishes have subscribed \$900,000. The Lafourche and Terrebonne and the river parishes will subscribe at least \$500,000 more. He submitted several calculations to prove that the road would be a fine investment in itself as mere stock, without reference to the enhanced value of adjacent property. The annual expense of transportation between the western parishes and New Orleans was \$590,000. The running expenses of

railroads in the United States was a fraction less than forty per cent. Deduct this, and it left \$354,000—twenty-two per cent. But he put rates at one-half, and then showed a large profit. The mere item of insurance was \$100,000, which would be saved to the planter.

He considers the extension of the road to the Sabine as a necessary consequence. This is about 150 miles from Opelousas, over a country of unsurpassed advantages for the construction of a road. Col. Payne states that the Attakapas and Opelousas country was the most beautiful he had seen out of Kentucky. It is four times as large as Massachusetts, and only requires accessibility to a market to increase its product ten fold.

Virginia.

Virginia and Tennessee Railroad.—Col. F. J. Boyd, of Wytheville has resigned his office as one of the directors of the above company. In speaking of his resignation and services, the Lynchburg Virginian says:—

"We cannot permit Col. Boyd to retire from the service of the company without a passing tribute to the value of his services, both in the employment of the company and in the cause of internal improvement generally. He has been devoted, might and mind, to the Virginia and Tennessee railroad from its inception to the present moment, and his last official act, of severing his connection with it, indicates an attachment to the work which is only equalled by the manly and disinterested manner in which he shows it. He is one of the pioneers of improvement in his section of the country, and is entitled, perhaps, to the credit of being the first politician in his country who was willing to risk his popularity in behalf of the cause. We have understood he is the *largest* subscriber to the Virginia and Tennessee railroad, in proportion to his means; and whether before the people on the stump, in the Legislature, or in the directory, the road has never called in vain for his valuable aid. The stockholders may well regret the loss of such an efficient co-worker in the cause.

Ohio.

Railroad Subscriptions.—The vote on Saturday last in favor of the city subscribing \$50,000 to the capital stock of the Junction railroad company, was almost unanimous, there being a hardly a respectable minority in opposition. There was not indeed opposition enough to contest the election spiritedly, and call out a full vote. The vote stood for subscription 170, against subscription 4! The citizens of Perrysburg are to vote on Monday next, a subscription on the part of the corporate authorities of that place of \$17,000, which together with the amount formerly voted by that township, and the amounts voted by this township and city, will make an aggregate of \$100,000 subscribed to this work at this point. This secures the location of this road beyond all contingency through Perrysburg and Maumee.

The citizens of Troy, Wood county, and Woodville, Sandusky county, are yet to vote certain amounts to this road on the part of their respective townships.—*Maumee River Times.*

Railroad Depots in Charleston.

South Carolina Railroad.—We learn from the Charleston Courier, that the depots and workshops of this company are in a rapid state of progress. The Courier says:—

Extensive improvements are in progress, which will soon render our railroad depository and work shops one of the most complete establishments of the kind in the Union. The square upon which the new buildings are erected, covers a considerable space of ground, bounded by Meeting, Columbus and Spring streets, and the railroad track leading to the passenger station in Hudson street. It embraces 270 feet on meeting, by 360 on Spring street, and contains a spacious finishing shop of two stories in height, 270 by 48 feet, at one end of

which are the offices, store rooms and stationary engine. This building is remarkably well supplied with light, having 36 windows on the street in each story. Adjoining this, is the boiler and blacksmith shop, (100 by 48,) and the foundry, (60 by 48 feet.) On one side of the square, is an iron and coal yard, and near the centre, "The Rotunda," or engine house, in which is a turntable, on an improved plan—by the use of which a material saving of labor is effected. The arrangement of these buildings, forming nearly a hollow square, along the west boundary of which the cars pass on their way up and down, leaves a capacious yard, amply sufficient for the conduct of all the out door operations of the establishment. The passenger depot and offices of receiving and delivery, are located a few squares below, and finished in very handsome style, with every convenience which can contribute to the comfort of travellers and the safety of their baggage. The depot is built in the heavy Gothic style of architecture, in the most substantial manner. The entrance on John street forms an elegant and imposing front, and the whole edifice is highly ornamental to this section of the city. The doors opening into the yard are numbered, and marked with the names of the principal hotels, a different door being assigned to each, and every precaution used to prevent confusion in the delivery of passengers or baggage at their proper destination.

Fire in the Coal.

In Wales a fire has been raging in a coal mine for 26 years, and has consumed, it is computed, \$500,000 worth of coal. Within five years after its commencement it was greatly restrained by the construction of an enormous wall which cost \$80,000. At present it is about passing this wall, threatening very extensive destruction, and learned engineers have been employed to consult on some new measure of arresting its progress.

Manufactures in Alabama.

The Mobile Tribune states that under the supervision of Mr. J. P. Perham, the Selma Manufacturing Company has got its foundry at Selma nearly ready for business. Steam engines, all kinds of mill and gin irons, blacksmith work, etc., will be made at the establishment. The company has a capital of \$22,000, a little more than one-third of which has been expended for tools and fixtures. They have now a beautiful steam engine, a furnace for melting iron, six turning lathes for wood and iron, one iron planer, circular saws, upright drills, and every kind of machinery for carrying on successfully the above kind of business. They have eight acres of land, which affords them plenty of room to enlarge their operations, as is their intention when the business increases so as to justify a larger investment. This establishment will give employment to over twenty hands this summer, and when in successful operation to double that number.

Pennsylvania.

Hempfield Railroad.—At a meeting of the board of directors of the Hempfield railroad company, held at the Monroe House in Wheeling, on the 7th day of May instant, Charles Ellet, Jr., Esq., was appointed Chief Engineer for said company. The board also agreed that from and after the first day of July next, the shareholders shall be entitled to receive interest at the rate of six per cent per annum on all instalments paid by them, and to continue to receive the same until the road shall be completed. It is expected by the board that as soon as the Chief Engineer can procure the necessary assistance, the road will be located with all convenient dispatch, and put under contract as soon as the circumstances of the company will admit.

JOSEPH HENDERSON,
Secretary.

Comparative Statement, Exhibiting the Total Receipts and Expenses per mile run of the principal Railways of Massachusetts, 1850.

NAMES.	Total number of miles run.	Total receipts.	Total expenses.	Ratio of total expenses per cent.	Road bed.	Motive power.	Miscellaneous.	Total.	Ratio of net income.	Ratio of net income per mile run.
Worcester.....	436,199	743,527	1,72	50.30	0.16	0.15	0.56	0.87	372,486	49.70
Western.....	768,764	1,369,514	1.78	42.36	0.16	0.15	0.48	0.79	761,965	55.64
Providence.....	251,950	370,927	1.47	42.96	0.11	0.07	0.43	0.63	211,445	57.04
Taunton.....	21,939	62,973	2.87	42.96	0.11	0.07	0.43	0.63	211,445	57.04
New Bedford.....	40,710	94,043	2.31	57.82	0.22	0.35	1.09	1.66	26,565	42.18
Lowell.....	235,995	406,421	1.72	53.52	0.24	0.21	0.64	1.09	149,913	36.89
Nashua.....	65,390	159,380	1.98	63.11	0.24	0.21	0.64	1.09	33,844	51.14
Boston and Maine.....	468,590	592,443	1.26	73.84	0.24	0.10	0.38	0.62	302,965	64.4
Fitchburg.....	375,424	553,543	1.42	88.86	0.14	0.10	0.38	0.62	302,965	64.4
Vermon and Mass.....	164,121	177,695	1.48	47.04	0.09	0.06	0.41	0.67	73,765	51.96
Eastern.....	311,004	539,076	1.73	58.49	0.16	0.07	0.42	0.63	333,858	65.64
Old Colony.....	216,879	288,689	1.33	34.36	0.10	0.07	0.42	0.59	97,688	33.84
Fall River.....	138,072	210,081	1.52	66.16	0.13	0.12	0.52	0.88	105,567	50.25
Total.....	3,495,046	5,524,112	Av. 1.58	49.02	Av. 0.15	Av. 0.12	Av. 0.50	Av. 0.77	2,916,346	Av. 50.98

Statement, exhibiting the Relative Cost of Passenger and Freight Transportation upon the principal Railways of Massachusetts, 1850.

FREIGHT DEPARTMENT.

NAMES.	No. miles run by freight trains.	No. of tons carried in the cars.	No. of tons carried one mile.	Number of tons carried each mile.	Receipts fm freight.	For salaries, wages, etc.	For repair of freight cars.	Proportion of other exp.	Total.	Ratio of the freight expenses per cent.	Net income fm freight.	Ratio of net income fm freight per cent.	Receipts fm freight per mile run.	Expenses of freight per mile run.	Net income fm freight pr mile run.	Receipts fm freight per ton carried one mile.	Expenses of freight per ton carried one mile.	Net income fm freight per ton carried one mile.
Worcester.....	145,485	252,553	9,663,386	66	330,781	63,600	18,033	143,877	222,600	68.30	105,181	31.80	2.27	1.56	0.72	3.423	2.835	1.088
Western.....	453,111	261,269	25,296,308	56	747,521	133,892	50,108	278,482	443,383	61.86	285,138	38.14	1.65	1.02	0.63	2.965	2.747	1.315
Providence.....	61,130	104,303	2,222,150	38	127,705	20,302	3,027	14,040	74,490	58.33	53,215	41.67	2.09	1.22	0.87	5.747	3.352	1.395
Taunton.....	6,914	39,003	400,038	35	27,730	4,708	3,027	12,040	21,775	78.52	5,955	39.64	4.01	3.15	0.86	6.932	5.443	1.489
New Bedford.....	13,430	32,718	463,575	35	38,180	7,330	3,117	12,613	23,050	60.36	15,139	39.64	4.01	3.15	0.86	8.238	4.977	3.266
Lowell.....	66,989	231,874	5,863,416	88	221,911	41,585	6,949	114,536	165,070	70.31	54,837	29.69	2.82	1.72	0.87	3.774	2.783	0.991
Nashua.....	28,210	161,893	2,246,537	68	62,578	12,930	3,069	100,440	133,078	70.82	18,577	29.18	2.43	1.52	0.71	2.785	1.958	0.827
Boston and Maine.....	77,083	143,673	8,284,617	77	270,568	27,572	9,376	144,001	243,078	62.71	100,894	37.29	2.51	1.57	0.94	4.208	2.948	1.258
Fitchburg.....	107,613	338,256	1,900,763	39	94,513	15,804	2,455	47,014	65,273	69.06	29,240	30.94	2.43	1.52	0.71	4.972	3.434	1.538
Vermon and Mass.....	48,419	106,287	1,829,350	49	67,574	8,938	1,100	58,075	68,113	100.53	.....	.....	2.37	1.83	0.60	3.692	3.723	.....
Eastern.....	37,443	71,386	1,268,039	33	90,302	10,150	2,061	78,573	90,784	100.53	.....	.....	2.37	1.83	0.60	7.191	7.159	.....
Old Colony.....	38,095	87,465	1,978,164	40	80,767	16,596	4,773	35,023	56,392	69.82	24,375	30.18	1.65	1.15	0.50	4.063	2.861	1.202
Fall River.....	49,038	71,949	1,978,164	40	80,767	16,596	4,773	35,023	56,392	69.82	24,375	30.18	1.65	1.15	0.50	4.063	2.861	1.202
Total.....	1,132,871	1,892,431	65,792,384	Av. 58.92	347,354	407,868	112,410	1,077,415	1,597,683	Av. 68.06	749,671	Av. 31.94	2.97	1.41	Av. 0.66	Av. 3.567	Av. 2.428	Av. 1.139

TOTAL EXPENSES.

EXPENSES PER MILE RUN.

Statement, exhibiting the Relative Cost of Passenger and Freight Transportation upon the principal Railways of Massachusetts, 1850.

PASSENGER DEPARTMENT.

NAMES.	Length of r'd & branches.	Maximum grade per ml.	Miles run by passenger & other trains.	No. of passengers carried in the cars.	No. passengers carried one mile.	No. passengers carried each mile.	Receipts fm pass., mails, etc.	For salaries, wages, etc.	Repairs passenger cars.	Proportion of other expenses.	Total.	Ratio of passenger expenses per cent.	Net income fm passengers, mails, etc.	Ratio of net income from pass., mails, etc., per ct.	Receipts fm pass., mails, etc. per mile run.	Expenses of do., per mile run.	Net income from do. per mile run.	Receipts fm do. carried one mile.	Expense per pass. carried one mile.	Net income from ditto, carried one mile.
Worcester.....	69	40	290,714	1,001,989	19,551,021	67	418,746	47,427	8,096	95,918	151,441	36.17	267,305	63.83	1.44	0.52	0.92	2.141	0.774	1.367
Western.....	136	35	318,653	467,086	21,941,398	70	621,993	41,475	17,419	86,272	145,166	23.34	476,827	75.66	1.97	0.46	1.51	2.835	0.662	2.173
Providence.....	53	37	190,830	591,949	8,412,905	44	243,052	26,815	4,684	53,290	84,780	34.89	158,233	65.11	1.27	0.44	0.83	2.889	1.068	1.821
Taunton.....	12	29	15,035	106,986	1,134,491	75	35,243	3,447	8,640	14,638	41,638	41.52	20,610	58.48	2.34	0.97	1.37	3.107	1.290	1.817
New Bedford.....	21	40	27,290	104,591	1,734,974	67	55,854	6,580	3,427	17,373	27,930	48.84	28,574	51.16	2.05	0.55	1.00	3.219	0.972	1.647
Lowell.....	28	10	163,006	558,293	9,706,190	57	185,210	21,939	4,231	57,208	93,438	50.45	28,574	49.55	1.05	0.55	1.00	3.219	0.972	1.647
Nashua.....	13	13	371,189	261,459	19,788,934	75	66,802	46,024	15,846	94,530	156,400	52.92	31,456	47.08	1.80	0.95	0.85	2.404	1.272	1.132
Boston and Maine.....	85	47	391,507	1,221,071	12,789,128	51	404,598	46,024	15,846	94,530	156,400	52.92	31,456	47.08	1.80	0.95	0.85	2.404	1.272	1.132
Fitchburg.....	66	41	367,811	1,080,286	14,289,205	53	262,975	31,696	7,463	42,141	81,300	30.97	184,128	69.03	1.03	0.40	0.63	2.044	0.790	1.254
Vermon and Mass.....	77	58	115,702	168,054	2,888,612	25	83,282	11,861	3,499	22,297	38,657	46.47	44,525	53.53	0.72	0.33	0.39	2.880	1.338	1.542
Eastern.....	75	40	273,571	1,006,552	14,656,349	54	471,502	48,327	60,578	117,105	117,105	24.84	354,397	75.16	1.72	0.42	0.30	3.217	0.799	2.418
Old Colony.....	45	40	178,843	681,263	8,103,246	46	198,387	31,404	7,036	61,777	100,217	50.52	98,170	49.48	1.11	0.56	0.35	3.217	1.236	1.981
Fall River.....	42	40	89,034	273,957	5,137,456	38	129,314	13,671	4,203	30,348	48,152	37.21	81,192	62.79	1.45	0.54	0.30	2.517	0.937	1.580
Total.....	742	40	2,362,175	7,527,136	130,133,209	Av. 56.31	3,176,758	336,360	99,202	658,234	1,093,894	Av. 34.43	2,082,864	Av. 65.59	1.34	0.46	0.88	2.441	0.841	1.600

Railroad Iron.

2000 TONS T RAILS, of desirable pattern, arrived, and to arrive, for sale by
RAYMOND & FULLERTON,
6121 45 Cliff st.

SUPERIOR BLACK WRITING & COPYING INK.**Jones' Empire Ink.**

87 Nassau st., Sun Building, New York city.

Net prices to the trade—

Quarts, per dozen,	\$1 50	6 oz. per dozen,	\$0 50
Pints, " "	1 00	4 " " "	0 37½
8 ounces, " "	0 62½	2 " " "	0 25

On draught per Gallon, 20 cents.

This is the best Ink manufactured, it flows freely, is a good copying ink, and will not mould, corrode, precipitate or decay. Orders for export, or home consumption, carefully and promptly attended to by
21tf THEODORE LENT.

Mohawk Valley Railroad.

THE BOOKS OF SUBSCRIPTION TO THE Capital Stock of this Railroad will be opened at the Chemical Bank, and at the office of Arthur N. Gifford, No. 60 Merchants' Exchange, on the 13th instant. The Report of the Survey and Estimates may be obtained, and a Map and Profiles of the route seen, at the latter place.
May 17th, 1851.

A. C. FLAGG,
JAMES J. ROSEVELT,
A. MANN, JR.,

21*21 Committee.

AMERICAN RAILROAD JOURNAL.

Saturday, May 24, 1851.

Stock and Money Market.

The stock and money market presents pretty much the same aspect which we have noticed for a month past. Prices vary but little from one week to another, notwithstanding the rapidly increasing receipts upon most roads. There is but little speculative feeling, and the stock market is in an unusually healthy condition. Money is very abundant, with every appearance of its continuing so during the season.

The securities of new works are dull, and are disposed of with some difficulty. There is a great difference in the ease with which bonds are sold between this year and last. The cause of this is not readily understood by those who look only at the present abundance of money. The purchase of railroad bonds for investment, though now an immense business in this city, is of recent date. A large majority of those offering are of companies at a distance, whose standing and means cannot at once be made known to the great mass of purchasers who buy to hold. The credit which it is necessary that every security should have to secure to it the confidence of the retired capitalist, and to the still more numerous class of persons who have but a few thousand dollars to invest, is of slow growth. No matter how good the security, the purchaser must have time to ascertain this fact. Attention has but just been called to the roads of the west, from whence comes the greatest demand for money, and though a very favorable feeling exists in reference to them, yet we cannot expect that their bonds will be taken as readily as those of eastern roads. A few years more, when the further extension of railroads shall have brought about a more intimate acquaintance between the more distant parts of our country, will place western roads on as favorable a footing as those of our own State.

During the past season, most of the bonds offering were readily taken up by brokers, and by par-

ties formed here, in large quantities, who bought for the purpose of selling again in smaller lots.—Most of these parties, tempted by the wide margin which the companies were willing to allow, completely gorged themselves with these securities; and though they are constantly working them off, they are not selling by any means as fast as new ones are offering. The offerings are greater than the real demand, and as the condition of our brokers does not allow their taking upon speculation, as last year, railroad companies must wait the slow, but certain demand, which does now and will continue to exist for investment. The condition of things is favorable to a healthy growth of our roads. They are now probably obtaining money as fast as is consistent with a general healthy condition of trade.

The rail market continues about the same as per last advices. The lowest quotations are £5 free on board.

The following traffic table shows a very large increase in the earnings of our roads.

Utica and Schenectady Railroad.—The following is a statement of the amount received for transportation of passengers in April, and from May 1st to 14th, 1850; also, in April, and from May 1st to 14th, 1851:

1850.—April.....	\$55,212 01
1850.—May 1st to 14th.....	25,566 09
	\$80,778 10
1851.—April.....	\$52,149 99
1851.—May 1st to 14th.....	20,314 45
	\$72,464 44

Decrease in 1851..... \$8,313 66

The tolls on this road have been reduced nearly 40 per cent since the past year. The above result, therefore, may be considered as very favorable to the road, and indicates a great increase of travel.

Mad River Railroad.—Some have feared that that the opening of the Cleveland and Columbus railroad would seriously affect the receipts of the Mad river and Lake Erie railroad. It appears, however, by a report from this company, that the receipts for April, 1851, were.....\$34,831 64 For April 1850..... 33,189 29

Increase over last year..... \$1,642 35

Peru and Indianapolis Railroad.—The receipts and expenditures on the road between Indianapolis and Noblesville from the 11th of March, the day of the opening of the road, to the 2d of May, inclusive, were as follows:

Receipts from passengers....	\$1,410 61
" freight.....	735 91
	\$2,146 52
Expenditures.....	731 75

Profits.....\$1,417 77

Being at the rate of about 8½ per cent per annum on the cost of construction.

Vermont and Massachusetts Railroad.—The receipts of this road for April were.....\$17,996 72 In same month last year..... 14,593 66

Increase this year 23½ p. ct..... \$3,403 06

Cheshire Railroad.—The receipts of this road for April were.....19,343 53 April, 1840.....15 325 85

Increase.....\$4,017 68

Boston, Concord and Montreal Railroad.—The receipts on this road for the month of April were.....\$12 336 06 For April 1850..... 10 396 65

Increase.....\$1,930 41

Rutland Railroad.—The receipts of this road for April were.....\$22,300 00 Same month last year..... 12,551 62

Gain this year..... \$9,749 33

Mohawk Railroad.—The receipts of this road for the month of April were as follows:

Passengers.....	\$14,662 44
Freight.....	10,314 71
Expresses, &c.....	273 69

Total.....\$25,250 84

April, 1850..... 20,075 00

Increase, 25 per cent..... \$5,175 84

Norwich and Worcester Railroad.—The following are the receipts of this road for the months of April, 1850 and 1851:

	1850.	1851.
Through travel.....	\$1,111 25	2,104 78
Local travel.....	7,370 80	7,967 18
Freight.....	11,468 87	11,844 71
Mails, &c.....	1,466 86	1,089 48

Total.....\$21,417 28

Increase in 1851.....\$1,588 85

Michigan Central Railroad.—The earnings of the Michigan-Central railroad for April, as compared with same month last year, were as follows:—

	1850.	1851.
Freight.....	\$18,295 46	\$37,221 01
Passengers.....	35,597 45	53,046 95

Total.....\$58,892 91

Increase.....\$36,375 05

Equal to 67½ per cent in advance of last year.

SALES OF STOCK IN NEW YORK.

	May 15. Sales.	May 23. Sales.
U. S '67 Loan.....	117½	117½
Erie R.R.....	88½	89½
Harlem R.R.....	73½	74
Stonington.....	43½	42½
L. I. R.R.....	22	21½
Norwich & Wor....	64½	64½
Del. & Hudson.....	121½	121½
Reading.....	54½	56½
Morris Canal.....	16½	16½
Erie income.....	97½	97½
" " Bonds.....	102½	103
Canton.....	75	75
Farmers Loan.....	69	69½

SALES OF STOCKS IN BOSTON.

	May 14.	May 21.
Old Colony Railroad.....	66½	68½
Boston and Maine R.R.....	105	105½
Eastern Railroad.....	102½	102½
Fitchburg Railroad.....	112½	113
Michigan Central Railroad.....	99½	104
Northern Railroad.....	60½	71½
Vermont Central Railroad.....	36½	36½
Vermont and Mass. R.R.....	30½	30½
Western Railroad.....	105	103½
Ogdensburg Railroad.....	40½	46½
Rutland Railroad.....	57	57½
Boston and Worcester Railroad.....	106	106½
Rutland Railroad Bonds.....	97	97
Ogdensburg Railroad Bonds.....	97½	97½
Vermont Central R.R. Bonds.....	91½	91½
Boston and Providence R.R.....	89½	90
Philadelphia, Wilmg'ton & Balt.....	29½	29½
Concord R.R.....	53½	54

Mohawk Valley Railroad.

Our readers will find, in another column, a notice of the opening of the books for subscription to the stock of this company.

We have received the circular of the directors, with a copy of the engineer's report of the survey of the route, and had prepared a notice of it, which is necessarily excluded from our present issue, by our lengthened notice of the opening of the Erie railroad. We shall give it in our next.

Opening of the Erie Railroad.

We give in another part of our paper, an account of the opening of this stupendous work.—The occasion was an era in the history of locomotion in this country. The influence of this road will at once be felt in every part of the United States. For New York, it is a crowning achievement, and will, in connection with other lines, to the progress of which it will give a vast impression, soon form a continuous line of railroad to the Mississippi river. The mountain heights have been scaled, the valleys beyond have been reached, and an onward march is an easy task. The Erie railroad is the grand artery between the Atlantic and our inland seas. Its branches compared with other trunk lines, would be great works. In New York and Pennsylvania alone, in the roads to which it has given birth, and which are now in progress, it will be the means of building a greater extent of line than its own length. Such are some of the first and obvious results of this great work. New results will develop themselves every year.

We had prepared and had intended to accompany the notice of the opening of the road, with a brief history of its progress, and more full statistics of its capacities for business, equipment, etc. But this we must defer to a future number. Such an account can hardly be less interesting, while it may be more instructive, than the account of the opening ceremonies.

New York.

Canandaigua and Corning Railroad.—The iron for this road is now arriving in this city, and is being forwarded to the line of the road. It is stated that this road will be in operation in July next. The track of this road has the line gauge 6 feet.

Georgia.

Georgia Railroad.—The annual meeting of this company was held at Augusta a few days since.—The usual report was submitted, and presents the following statement of the operations of this road for the past year:

The gross earnings of the company from railroad operations, for the year ending 31st March last, were, \$728,923 15
And the expenses of management..... 302,437 10

Leaving net profits from road operations..... \$426,486 05

The business operations and resulting profits of the company, from all sources, for the past fiscal year, may be briefly stated thus:

Gross earnings of the road as above.. \$728,923 15
" of the bank..... 55,485 49

\$784,408 64

Charged with road expenses..... \$302,437 10

Charged with interest on bonds..... 45,861 56

Charged with expenses of bank, including bank taxes, &c..... 15,224 50—\$363,523 25

Net income from all sources..... \$420,885 39

Two dividends have been declared from these profits of \$3 50 per share, each, or seven per cent per annum, on the capital stock, amounting to \$280,000, and leaving surplus profits applicable to other purposes of \$140,885 39.

It will be perceived that the gross profits of the road compared with the year preceding, have increased \$102,116 13, whilst the net profits have only increased \$27,961. And whilst the gross receipts from all sources have increased \$140,885 39, the net profits have increased only \$35,169 20.

This diminution of net profits, in proportion to gross receipts, has been occasioned, in part, by increased taxation—but mainly by the great advance

in the price of labor, materials and provisions, as stated in the reports of the resident engineer and superintendent of transportation. It is, however, to be observed, that our expenses still continue to compare favorably with the best managed roads in the country.

New Hampshire.

Boston, Concord and Montreal Railroad.—The fifth annual report of this company gives the following statement of its affairs. The road is now completed from Concord to Warren, 70 miles, and within 22 miles of Wells river.

The cost of the seventy miles now constructed is..... \$1,434,972 76
The cost of the cars, engines and equipment..... 132,099 86
\$1,567,072 62

And the road is so thoroughly constructed that few additional expenditures will be required.

The capital paid in is..... \$1,118,742 25
The bonds authorized and secured by mortgage, \$500,000, of which have been sold..... 296,500 00
The floating debt..... 179,328 00
\$1,594,570 25

The floating debt is to be paid off by the sale of remaining bonds. The gross receipts have been for the year \$144,835 71, deducting the amounts paid other roads \$43,576 71, and running expenses and repairs \$52,632 61; and the net income on the portion of the road in use is \$48,626 38.

The remaining twenty-two miles have been carefully re-surveyed during the year. The report estimates the entire cost of the same at \$420,706.—For contingencies and additional cars it estimates \$79,000, making the entire additional investment \$500,000.

The mode of providing the remaining \$500,000 is referred to the consideration of the stockholders, at the annual meeting on the 27th.

Mississippi and Atlantic Railroad.

The directors of this company, nothing daunted by their failure to obtain a confirmation of their organization under the general railroad law of that State, are busily engaged in the steps preliminary to the commencement of the work of construction, such as securing the right of way, raising subscriptions, etc. The true policy for those interested in this work is to obtain a charter to build a road from Terre Haute to the line of the Central road, which would at once bring into profitable use that portion of it. By the time that the above point could be reached, the State would so far abate its exclusive policy as to give the asked for charter. The Ohio and Mississippi road will undoubtedly be speedily built, and a through route can be formed by using part of the three roads named. One great object for which the Mississippi and Atlantic road was projected would thus be secured; but we have no doubt but that by commencing at Terre Haute, the State would relax its present policy as soon as it shall be for the real interests of the company to have her do so. The above road is a very important one, and the whole country is interested in its construction.

In this connection we may state that the Terre Haute and Indianapolis railroad will be completed this fall. The Indianapolis and Bellefontaine railroad, 83 miles long, to the Ohio State-line, will be completed in the fall of 1852, when it is probable that a continuous line will be in operation from New York to the State-line of Illinois. There it will wait for a time apparently before it can be allowed to push forward direct to St. Louis.

Anthracite Beds of Rhode Island.

Continued from page 299.

The experiments of Dr. Hayes, to which we alluded in the former article on this subject, were conducted on a large scale at the Roxbury Chemical Works, near Boston. One hundred and fifty tons of Rhode Island coal were consumed in these trials, and the results registered are upon the consumption of fifty of these. The object of the experiment was to determine the evaporating power of the coal, compared with that of one of the best qualities of Pennsylvania anthracites. The variety selected for this comparison was the "Pine Knot," from the "Miller vein," which is highly esteemed about Boston. "To make the conditions equal, a rapid evaporation was produced in both cases, and the time made to correspond. The trials occupied about 72 consecutive hours for each, and were alternated, so as to begin the week with one and end with the other, reversing for the next week, so that the influence of the increased heat of the furnace might be equalised on each. The clinkers from each kind were weighed after large portions of coal had been burnt."

"It was first determined that by the arrangement of furnace and boilers adapted to the combustion of anthracite, thirty hours average time allowed 10,000 lbs. of Portsmouth coal to burn completely. This quantity gave as a mean result deduced from many trials, 63,525 lbs. water converted into steam.

Pine Knot coal could be burnt more rapidly, but when 8,630 lbs. were burnt in 30 hours, a mean of many trials, 63,525 lbs. of water were evaporated.

The clinkers from 10,000 Portsmouth coal weighed 1,190 lbs., from 10,000 Pine Knot coal, 1,356 lbs.

It hence appears that 10,000 lbs. of Portsmouth coal correspond to 8,630 lbs. of Pine Knot anthracite; 10,000 lbs. of Portsmouth coal cost 17-28, and its equivalent 8,630 lbs. of Pine Knot, at the lowest price it has yet sold for, cost 21-17; the present price being much higher.

Having thus determined the economical value of the Portsmouth coal, it became a point of interest to endeavor to learn how far the length of time required to burn it influences its application for generating steam. It was therefore mixed with Pine Knot coal in the proportion of equal weight, and this mixture was burned in the shortest time the apparatus permitted; 8,650 lbs. of this mixture burnt in 26 hours, evaporated 63,525 lbs. of water, or within a fraction the mixture was equal to an equal weight of Pine Knot coal."

Mixed with bituminous coal, the clinkers formed melted into a solid mass. With "free burning anthracite," by which we understand Dr. Hayes to mean anthracite partially bituminous, he infers excellent results will follow. "In a given weight," he remarks, "the Portsmouth coal contains a larger amount of carbon, than exists in the same weight of dry anthracite, but its compactness and graphitic character prevent it from consuming rapidly, and hence any means for increasing its combustibility, by diminishing the time necessary, adds to its value as fuel."

"The difficulty, owing to its compactness, with which it kindles, renders it less convenient for small fires than the more combustible anthracites, yet when properly managed in an open grate, it produces a very enduring and cleanly fire."

For further particulars, relative to the suitability of this coal for smelting purposes, its physical characters, and advantages of position, we would

refer to the report itself. From Dr. Hayes we have personally gathered a few further data which will be interesting.

The ashes of the coal are less in weight than of the Pennsylvania anthracites, but more bulky.—The freight of coal from the Delaware river to Boston is from \$1 25 to \$1 50 per ton. From Rhode Island it is about half these rates. A cubic foot of Rhode Island coal, broken to egg size, weighs 59.5 lbs.: of the Zerby's Run semi-anthracite, 48 lbs.: of small red ash anthracite, 57.5 lbs.: of Pine Knot, 54 lbs.: of Pictou bituminous coal, 49.5 lbs.

We will now close these remarks with an account of two localities, which we have recently examined in the vicinity of the Portsmouth mine.

The former of these is on the east side of the island, opposite the Portsmouth mine, and about a mile and a half east of it. Here, near the summit of the high hill, which rises from the bay towards the west, is the outcrop of a coal bed, the inclination of which towards the central axis of the island seems to indicate that it is one of the same beds, which are found on the west side dipping towards the east. The bed was opened and partially wrought in 1808, but soon after abandoned. The shaft and gallery have since remained full of water, except for a short time in 1849, when they were cleared out, and then examined by Dr. Jackson, whose report accompanies that of Dr. Hayes. It is there spoken of as the "*Portsmouth mine*," in the neighborhood it is generally known as "*Case's mine*." Dr. Jackson represents the shaft to be 75 feet deep, and the coal bed 13 feet thick. At the mines on both sides the island, he observes that the coal near the surface was much disintegrated, becoming more compact with the depth. He regards them all as crushed beds, consequently liable to a greater waste in small coal and dust than is usual in other mines of anthracite; still, however, this is not to be regarded of so much consequence, as the fine coal and dust now finds a market at remunerating prices. He adds that he was favorably impressed with the appearance of the coal bed—that it was in a much better state than he supposed it would be after having been so long exposed to the action of air and water.

In our visit we could only see what the surface presented. The shaft was at an elevation of about 100 feet above the water. Loose coal was scattered about near it, the appearance of which promised well as to the quality of the bed. It was favorably situated for mining; for by reason of the elevation of its outcrop an adit might be driven up from the level of the wharf from which the coal would be shipped—thus draining off all the surface water, and affording a convenient level roadway for bringing the coal out. Though the adit, in consequence of the dip being away from the water, would be across the strata, and of much greater length than if the dip were the other way, it would be for the same reason very likely to cut other parallel coal beds, which might all be worked by means of the same level.

The accounts of intelligent people living in the vicinity agree with the report of Dr. Jackson, in representing the thickness of the bed as very considerable, and the quality of the coal is stated as not differing materially from that of the coal on the other side of the island. From such data, we could not but form a favorable opinion of the inducements here offered for the investment of sufficient capital to work this mine; and so recom-

mend it to the attention of those who may be disposed to engage in an enterprise of this kind.

The other locality, where a coal bed of promising character has been discovered, is in the town of Bristol, at the head of one of the principal wharves. A well was sunk here last winter to furnish water to a large sugar refinery. After going sixteen feet through sand and gravel, a coal bed was struck, in which the well was sunk, as I was informed, sixteen feet further, without getting through the coal. It was then walled up, and all that can now be seen is a great open pit about fifteen feet across, nearly full of water. A heap of coal lies upon the surface, which was taken from the well—and though from the very outcrop, where it was unprotected by a rock roof, it has been used by families for their winter's fuel. We saw it burning freely in an anthracite cooking stove to the satisfaction of the family using it. They had a large pile of it stored away in the cellar close to the well. It certainly is very remarkable to find good sound coal so near the surface. One cannot but be surprised it should burn at all. It appears that the bed must be as large or larger than either of the others, and so far as can be ascertained, the quality of the coal is not inferior.

Its outcrop is not very far above the level of the water, and as the bed dips, (according to the statements of those who had seen it opened,) towards the water, and must soon pass under it, it will be important to lay out the workings in such manner as to preserve the bed untouched near the surface, and only work it at a depth that will secure a considerable thickness of strata between it and the water of the bay over head. This presents no serious difficulty, and with the work judiciously begun, there can be no question as to procuring large supplies of coal at this point, with no great expenditure beyond the first cost of a large steam engine and pumps. Coal beds intercept the water that flows down to their surface, so that workings under them may be very dry, as long as the upper layers of coal are not shattered.

As this bed along its lines of outcrop to near the north reaches farther back from the wharves, it may be opened at some point more in the village, if suitable room can be obtained.

Other localities also, on the island, as well as on the main land, present sure indications of extensive coal beds; and altogether we regard these points as holding out strong inducements for their thorough development, by the employment of large capital. From enterprises begun and conducted as the former have been, none but the same results which they experienced, can be anticipated. But by seeking for the coal at suitable depths—by the application of proper machinery—by judicious care in sorting and preparing it for market, and by proper advice how it should be used, and for what purposes it is best adapted, it must be largely employed, when it can be afforded at rates so much less than the Pennsylvania anthracites. Narragansett Bay already receives large supplies of mineral fuel for the manufacturing towns on its shores.—Conveniently situated as the State of Rhode Island is, between the great markets of New York and Boston, abounding in good harbors, and connecting directly with the interior by the Providence and Worcester railroad, nothing more is wanting for the almost unlimited extension of its manufacturing establishments, than cheap motive power and fuel. That this coal may be advantageously employed to supply these wants, seems to be estab-

lished by the experience of those who have used it on a large scale. It is probable that for smelting iron ores, and for many purposes connected with the working of iron and other metals, it may be well adapted; and as this is proved to be the case, will such works spring up in the vicinity of the coal mines, giving a home market to their productions, and adding no little to the value of property around them.

The Portsmouth Coal company is now actively engaged in bringing about these results; and another company will probably be soon formed in Boston, to engage in the same enterprise. The establishment of both will be mainly owing to the perseverance and good judgment of J. R. Barbour, Esq., of Worcester, Mass., who some time since became persuaded of the great value of these beds, and zealously set himself to work to prove it. We wish him all the success that enterprise and industry ever merit.

J. T. H.

Kentucky.

Covington and Lexington Railroad.—This company have made contracts for grading the greater portion of the road between Falmouth and Paris, including the masonry of the bridges. The grading of a few sections, and the masonry of two or three bridges is not yet let. The company will make contracts for this work immediately, and without advertising further.

Business on Canals.

Wabash and Erie Canal.—The business on the Wabash and Erie canal continues to show a large gain, as will be seen by the annexed statement:

Receipts for tolls during the month of
April.....\$26,881 15
During same month last year..... 20,434 79

Increase.....\$6,446 36
Receipts from sales of land April, 1851.....\$14,110 76
" " " " 1850..... 7,725 19

Increase.....\$6,385 57
Receipts from sales of lands for 6 months
ending May 1, 1851..... 108,560 21
Receipts from sales of lands for 6 months
ending May 1, 1850..... 42,627 41

Increase, over 150 per cent.....\$65,932 80
The breach in the Wabash and Erie canal, of which mention was made a few days since, consisted of the washing away of a culvert near Lewisburg, which was speedily repaired, with but little interruption to navigation.

The aggregate quantity of flour, wheat, corn and barley left at tidewater from the commencement of navigation, to the 14th May, inclusive, during the years 1850 and 1851, is as follows:

	Flour, bbls.	Wheat, bu.	Corn, bu.	Barley, bu.
1850.....	189,662	60,307	246,239	88,887
1851.....	458,201	178,426	1,069,208	43,090

Inc.....268,539 118,119 822,969 dec. 45,797

The amount of tolls received on all the New York State canals, from the opening of the canals up to the 14th instant, inclusive, is as follows:—

4th week in April, 1850.....\$178,794 45
1st week in May..... 80,477 93
2d week in May..... 103,969 41

Total.....\$363,261 79
3d week in April, 1851.....\$151,270 31
4th week in April..... 146,627 55
1st week in May..... 112,105 10
2d week in May..... 112,456 84

Total.....\$522,459 80
Excess or increase in 1851, \$159,198 01.

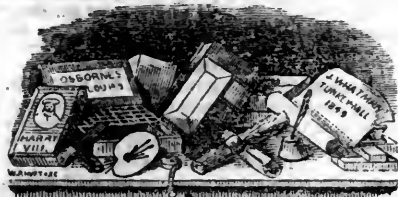
It will be remembered that a reduction has been

made in tolls from those of last year. The increase of business is enormous.

Welland Canal.—During the week ending 13th inst., 136 vessels passed the Welland canal, of which 74 passed up and 62 down. Of the vessels passing down, 37 were bound to Oswego, 13 to Kingston, 4 to Ogdensburg, 4 to Montreal, 3 to Toronto, and 1 to Hamilton. The vessels going to Montreal were loaded mostly with flour and pork, and those to Kingston with staves, timber and coal.

Hufty's

Engineers, Architects and Draftsmen's
STATIONERY EMPORIUM.



WHATMAN'S Turkey Mill Drawing paper, Tracing paper, Plan and Profile, Protractors, Drawing Pins, Faber's, Jackson's and other makers' Pencils; Field, Level, and Memorandum Books of various patterns; Mathematical Instruments, Tape-lines, Mouth Glue, Cross Section paper, Triangles, Sabel Brushes, Gum Bands, Maiden Gum, Red Tape, Ink, Inkstands and Sand, Water Colors, Pallets, Patent Binders for letters, Portfolios, etc., together with a general assortment of Stationery and Blank Books. All goods packed with care, and forwarded to any part of the United States.

JOSEPH HUFTY,
Successor to H. L. Lipman,
139 Chestnut st., Philadelphia.

May 15, 1851.

1851.  1851.

PEOPLE'S OSWEGO LINE, New York and Oswego,

ARE prepared for the Transportation of Merchandise and Produce to and from New York, and ports on the Western Lakes, by the Lake Ontario and Welland Canal route. Special attention given to Railroad Iron.

PROPRIETORS.

LEWIS & BEARDSLEY, Oswego.
JAMES W. CAMPBELL, New York.

AGENTS.

James W. Campbell, 111 Broad st., New York.
W. H. Clark, 60 Quay st., Albany.
Lewis & Beardsley, Oswego.
Smith & Hunt, Toledo, Ohio.
G. W. Bissell, Detroit, Mich.
C. Walker & Son, Chicago, Ill.
H. H. Hurlbut, Western States.
May 15, 1851.

Notice to Contractors.

Pennsylvania Railroad.

PROPOSALS will be received from the 9th to the 24th of June next, at Johnstown and Summit, for the Grading and Masonry of that part of the Mountain Division of the Pennsylvania Railroad between Altona, in Blair county, and Pringle's Point, a few miles below Jefferson, in Cambria—a distance of 25 miles.

The road within this distance will cross the Allegheny mountains, encountering some of the heaviest grading offered in this country. In addition to a number of extensive cuttings, embankments and culverts, there will be one tunnel 1200 yards in length at the summit of the mountain, and another of 200 yards through Pringle's Point.

Terms cash, monthly. For further information apply to EDWARD MILLER, Esq., Associate Engineer, Blairsville, Indiana Co., or to STRICKLAND KNEASS, P. A. Engineer, Altona, Blair county.

J. EDGAR THOMSON,
Chief Engineer.

Engineer Department P. R. R. Co.,
Philadelphia, May 1st, 1851.

NOTICE.

THE Subscribers hereby give notice that they sold out their interest in the New York Iron Bridge Company on the 29th of April last to M. M. WHITE, and that their interest in the Company ceased on that date.

J. V. RIDER & BROTHERS,
ELIHU TOWNSEND.

The business of the New York Iron Bridge Co. will be continued as formerly by the Subscriber, who respectfully solicits orders for bridges as heretofore.

M. M. WHITE, Agent
New York Iron Bridge Company,
39 Wall st., Jauncey Court.
New York, May 13th, 1851.

Spikes, Spikes, Spikes.

ANY person wishing a simple and effective Spike Machine, or a number of them, may be supplied by addressing J. W. FLACK, Troy, N. Y. or, MOORE HARDAWAY, Richmond, Va. March 6, 1850.

To Railroad Companies. SALISBURY REFINED IRON.

THE Undersigned, having enlarged and perfected his Works, is now prepared to furnish Locomotive Tire of a better quality than have heretofore been used. Railroad Companies who may wish it, will be furnished with a set for trial, not to be paid for until they are satisfied of their superior quality over any other. Also made at short notice, and in the best manner, Locomotive Cranks, Engine and Car Axles, and other Locomotive Forgings.

All work ordered from me will be made of Salisbury Iron, and done in the best manner.

Address HORTATIO AMES,
Falls Village, Conn.

May 1, 1851.

Lovegrove's Patent Cast Iron Water and Gas Pipes.

THE Subscriber, the Inventor and Patentee of the Centrifugal mode of giving form to metallic substances while in a molten state, is preparing to make Cast Iron Water and Gas Pipes, of any dimension, at prices much lower than they can be made in the old manner, and the pipes warranted to stand a pressure of three hundred pounds to the square inch, and to be soft enough to drill. Steam Engines and all kinds of machinery. Cast Iron Doors and Frames, and Mill Castings of every description, made to order.

THOMAS J. LOVEGROVE,

Machinist and Founder,

West Falls Avenue, below Pratt st., Baltimore.

To Railroad Companies, etc.



The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

I also invite attention to an improved PATENT SPRING LOCK, for SLIDING Doors to Freight and Baggage Cars, now in use upon the Pennsylvania Central, Greenville and Columbia, S.C., Reading, Pa., and other Railroads.

Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH,
46 South 8th St. Philadelphia.

May 9, 1851.

To Engineers and Ship Builders.

THE Advertiser is desirous of a situation in a respectable concern, he has acquired a practical knowledge of his business in the establishment of R. Napier, Esq., Glasgow, has since for several years had the management of the Works of an extensive Steam Packet Co., for whom he designed and built some Iron Screw Ships, whose capabilities and performances give the highest satisfaction. While acquainted with all the most approved modes of construction of marine engines, he is prepared to submit original designs.—In modelling and draughting he has had much and successful experience. Can produce the highest testimonials as to character and abilities from the first engineer on the Clyde.

Address ENGINEER, box 2315 lower Postoffice.

Boston Locomotive Works,

—Late Hinkley & Drury—
No. 380 Harrison Avenue,
BOSTON.

Locomotive and Stationary Steam Engines; Boilers; Iron, Brass, Copper and Composition Castings; Coppersmith's Work, and all kinds of Railroad Machinery furnished at short notice.

ALSO



Van Kuran's Improved Rail- Road Wheel,

Patented May 1, 1849. Manufactured under the personal superintendence of the Patentee, as above.

Orders for any quantity of wheels executed with dispatch, and wheels and axles fitted in the very best manner and at the lowest rates. Address

DANIEL F. CHILD, Treasurer, Boston.



Providence Tool Co.,

MANUFACTURERS OF

Plane Irons, Tooth Irons, Soft Moulding and Rabbet Irons, Cornice Irons, Plow Bits, and Planing Machine Knives:

NUTS, WASHERS AND BOLTS.

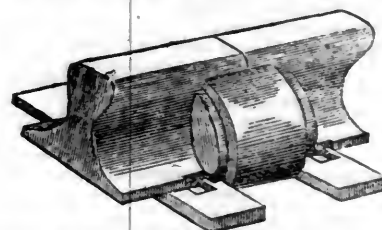
—ALSO—

PLATE HINGES AND PICK AXES.

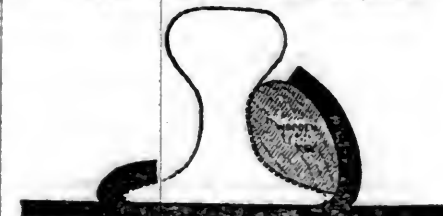
They are prepared to execute orders for all descriptions of Cold Punching and Job Work.

WM. FIELD, Agent. RUFUS WATERMAN, Treas.
PROVIDENCE, R. I.

Railroad Iron, SPIKES, AND WROUGHT IRON CHAIRS.



THE Undersigned, Agent for Manufacturers, is authorized to contract for Welsh Railroad Iron of the best quality, and deliverable at any port on favorable terms, also Spikes and Wrought Iron Chairs, made from the best iron, and of any pattern and weight. The new Wrought Iron Chair, with the introduction of a "Key," as per the annexed plan, will be found a great improvement on the old pattern.



Boiler Plates of superior quality, perfect regularity in the squaring and thickness, and made with great care.

Samples can be seen at office, No. 20 Beaver st.
CHARLES ILLIUS.

To Contractors.

Engineer's Office Central Ohio R. R. }
Zanesville, May 7, 1851. }

SEALED Proposals will be received at this office until the 1st of June next, for laying the Track upon the whole line, including sidings—about 63 miles—west of Zanesville.

Plans and Specifications will be exhibited after the 20th day of May.

By order of the Board.

ROBERT MAC LEOD,
3t Chief Engineer.

CHILLED TIRES FOR LOCOMOTIVE ENGINES. To Railroad Companies.

THE Undersigned, Assignee of Letters Patent, respectfully invites the attention of Railroad Companies to the CHILLED TIRES for LOCOMOTIVE ENGINES, which he offers for sale.

These Tires were first introduced by Messrs. Perkins & McMahon, upon the Baltimore and Ohio Railroad, in 1843, where, after a long and severe trial, they were generally adopted, on both passenger and freight engines, and now have entirely superseded Wrought Tires on that road, on which are many engines of the heaviest class, which ascend grades of *eighty-five feet per mile*, taking with them *one hundred and twelve tons*, exclusive of cars. This performance shows in some measure the *adhesive character and strength* of the Tire.

During a service of seven years, these Tires have very much exceeded in *durability* those of wrought iron, while their first cost, and expense of repairs, is more than *fifty per cent. less*. They also retain more equally their *diameter and proper form of tread*, which is a point of much value in engines with *coupled wheels*.

It is believed these Tires are peculiarly well adapted to freight engines, as the objection to *coupling* the wheels of locomotives is the *increased friction*, arising principally from the *unequal wear* of wrought tires; and hence most of the freight engines where wrought tires are used, have but *four wheels as drivers*, with frequently a weight of *sixteen tons*, or more, upon them, which may be of no disadvantage to the engine, although its effect upon the *track* is like a car with *sixteen tons* upon *four wheels*, and it is presumed no one would permit cars so heavily loaded to pass over their road.

As Chilled Tires wear more *uniformly* than those of wrought iron, there can be no doubt when these are used, that the weight *necessary for adhesion* may be distributed upon more *driving wheels*, without any material disadvantage to the engine, and thus placing *less weight upon a single point*, would relieve the *track*, and secure, to a great extent, the object sought to be gained by the plan so frequently proposed, of using *light engines*, which would bring with it the necessity of *increasing* the number of trains and train hands.

The complete success of Chilled Tires upon the Baltimore and Ohio road for the last seven years, and upon other roads for a more subsequent period, is a strong proof of their *practical character*, while their *cheapness and durability*, it is believed, recommend their trial by every railroad company.

It may be thought by some that the *whole wheel for strength*, would be preferable to wheels with tires, but experience shows the latter to be a much *stronger and more durable wheel*, on account of its freedom from *tension*, which is never the case with a *whole wheel*. That TENSION has much to do with the breaking of wheels and tires, may be inferred from the fact, that a set of *chilled tires*, five feet diameter, on a first class passenger engine, have been in constant service during the past winter, on one of our Eastern roads, and have withstood the severities of the season, where whole wheels and *wrought tires* have broken. And it may be proper to remark, that wherever chilled tires have been introduced, whole wheels as drivers are invariably abandoned, they being far more expensive to maintain, as there is a *crank* to form as often as a wheel is renewed, which is *not* the case on the renewal of a tire.

The peculiar manner of *fastening* these tires to the wheel without *shrink*, applies equally well to wrought tires, and is of much importance where they are used, as it secures them against the TENSION or STRAIN they receive by the present plan of *shrinking* them to the wheels, which undoubtedly is the cause of wrought tires breaking so frequently, particularly in cold weather, which produces a greater *contraction* of the tire, thereby *increasing the strain*. This plan makes the tire perfectly secure upon the wheel, and is attended with *less expense*, as will be seen by the following testimony, which are respectfully submitted.

Lowell, March, 1851.

L. B. TYNG.

TESTIMONIALS.

Baltimore and Ohio R. R. Office, }
Jan 2, 1850. }

Mr. L. B. TYNG, Lowell, Mass.—Sir: Your favor of the 26th ult., is before me, asking my opinion of the Chilled Cast Iron Tires, of Messrs. Perkins & McMahon, patentees. I do not hesitate to speak favorably of them, nor to say that I would give them the preference over wrought iron tires, whenever the adhesive tenacity of the latter to the rails is not all called for, there being somewhat less adhesion to the chilled wheel.

This can, however, scarcely be called a practical point, as nearly all of the Passenger Engines now in use have a *surplus of adhesion*, and nearly all Freight Engines being provided with the sand box, for emergencies arising from sharp curves, heavy grades or wet rails.

The Chilled Tire is very much cheaper in first cost, will last longer, and offers a facility for putting it on the wheel, rendering comparison with the wrought iron tire an absurdity—it not being necessary even to take the wheels from the machine for the purpose.—Many of them are in successful use on this road, and I consider its curves and other peculiarities the most severe of all existing tests. One set of five feet in diameter, has run 50,000 miles under one of our Passenger Engines, and will to all appearance, run as many more; and, in the mean time, they have not cost a dollar for repairs or adjustment.

It may be suggested that they might not stand a Northern frost. This is possible; but I believe otherwise, as the weather here is occasionally as severe as in Boston, and if I had charge of a northern road, after the experience I have had here, I would make their trial one of my very first acts.

Respectfully your Ob't Serv't,

WM. PARKER, General Supt., etc.

January 29, 1851.

Philadelphia, Wilm. and Balt. R. R. Office, }
Wilmington, Del. }

Mr. L. B. TYNG—Sir: We have used the solid Cast Iron Chilled Wheel, and Cast Iron Chilled Tire, for engine drivers, on this road since 1842. When wrought iron tires under new engines, purchased from time to time, wear out, I invariably replace them with the Chilled Tire of Messrs. Perkins & McMahon, patentees.

These Tires will last, on the average, three times as long as wrought tires; seldom requiring renewals under three years, and lasting much longer usually. We have a set which has been in constant use for five years, and still in fair order. The adhesion supplied by the Chilled Tires, I find in practice with engines of the same model and weight, to be equal to that given by wrought tires. This is certainly a fact, though not an acknowledged one, in general. Those who think otherwise, will in time change their opinions.

I am of opinion that the Chilled Tire is as safe as the wrought, at any temperature. In eight years use, we have broken but one tire out of more than fifty, and that by a violent concussion on the occasion of a run off.

The use of the Chilled Tire, and the ease and rapidity with which it may be replaced, would certainly enable a road to do the same amount of work with fewer engines—since but little time would be lost in laying up an engine for new tires, or for turning down old ones, as must be done when wrought tires are used.

I am yours respectfully,

I. R. TRIMBLE,
Engineer and General Supt.

Office Eastern R. R., Salem, Dec. 23, 1850.

L. B. TYNG, Esq.—Sir: Your favor of Nov. 30th, inquiring respecting the Chilled Cast Iron Tires, came duly to hand, and in answer, I will say, that this road have in use one set cast and fitted to the wheel, by Messrs. Bush & Lobdell, upon a twenty ton first class Passenger Engine, which has run in eight months, 26,639 miles, and to all appearance, are about as good as when they first commenced running.

In regard to the comparative expense of the cast or wrought iron tires, I do not hesitate to say that the difference would be vastly in favor of the former.

I have ordered a second set, and they will be put on to the engine immediately. Respectfully,

JOHN KINSMAN, Supt. E. R. R.

Chilled Tires for the various sized wheels, or wheels with either chilled or wrought tires fitted up upon this plan, may be had of the following persons:

ALDRICH, TYNG & Co, Lowell, Mass.
SMITH & PERKINS, Alexandria, Va.

Rights for using Tires upon the above plan, may be had on reasonable terms, of L. B. TYNG, Lowell, and at N. York.

Railroad Iron.

THE UNDERSIGNED, HAVING made arrangements abroad, are prepared to contract for the delivery of Foreign rails, of approved brands upon the most favorable terms.

They will also make contracts for American rails, made at their Trenton works, from Andover Iron, in whole or in part, as may be agreed upon.

They are prepared to furnish Telegraph, Spring and Market Wire; Braziers and Wire Rods; Rivets and Merchant Bars to order, all made exclusively from Andover Iron. The attention of parties who require iron of the *very best quality* for special purposes, is respectfully invited.

COOPER & HEWITT,
17 Burling Slip, New York.

February 15, 1850.

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.

August, 16, 1849.

6m33

Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron.

THOMAS B. SANDS & CO.,
73 New street,
New York.

February 3, 1849.

Glendon Refined Iron.

Round Iron, Square "	Band Iron, Flat "	Hoop Iron, Scroll "
-------------------------	----------------------	------------------------

Axles, Locomotive Tyres,
Manufactured at the Glendon Mills, East Boston, for sale by
GEORGE GARDNER & CO.,
5 Liberty Square, Boston, Mass.

Sept. 15, 1849.

3m37

ENGINEERS.**Atkinson, T. C.,**

Mining and Civil Engineer,
Orange and Alexandria Railroad, Alexandria, Va.

Clement, Wm. H.,

Little Miami Railroad, Cincinnati, Ohio.

Cozzens, W. H.,

Engineer and Surveyor, St. Louis, Mo.

Alfred W. Craven,

Chief Engineer Croton Aqueduct, New York.

Floyd-Jones, Charles,

Alton and Sangamon Railroad, Alton, Illinois.

Gay, Edward F.,

Columbia and Philadelphia Railroad, Philadelphia Pa.

Gilbert, Wm. B.,

Rutland and Burlington Railroad, Rutland, Vt.

Gzowski, Mr.,

St. Lawrence & Atlantic Railroad, Montreal, Canada.

Grant, James H.,

Nashville and Chattanooga R. R., Nashville, Tenn.

S. W. Hill,

Mining Engineer and Surveyor, Eagle River,
Lake Superior.

Holcomb, F. P.

Southwestern Railroad, Macon, Ga.

Latrobe, B. H.,

Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,

Buffalo and Conhocton Valley Railroad, Bath, N. Y.

Morris, Elwood,

Schuylkill Navigation, Schuylkill Haven, Pa.

Nott, Samuel,

Lawrence and Manchester Railroad, Boston,

Osborne, Richard B.,

Civil Engineer, Philadelphia.

Prichard, M. B.,
East Tennessee and Georgia R. R., Cleveland, Tenn.

W. Milnor Roberts,
Bellefontaine and Indiana Railroad, Marion, Ohio.

Roberts, Solomon W.,
Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Sanford, C. O.,
South Side Railroad, Virginia.

Schlatter, Charles L.,
Northern Railroad (Ogdensburg), Malone, N. Y.

Steele, J. Dutton,
Pottstown, Pa.

Trautwine, John C.,
Civil Engineer and Architect, Philadelphia.

Tinkham, A. W.,
United States Fort, Bucksport, Me.

Troost, Lewis,
Alabama and Tennessee Railroad, Selma, Ala.

Whipple, S.,
Civil Engineer and Bridge Builder, Utica, N. Y.

HOTELS.

**DAVIS'S
ALHAMBRA HALL,**
No. 136 Pratt street,
BALTIMORE.

Exchange Hotel,
Adjoining Eastern Railroad Depot,
BUFFALO, N. Y.
BY.....**FISK & SPERRY,**
Late of Delevan House, Albany.

MANSION,
Corner of Maine and Exchange Streets,
P. DORSHIMER. BUFFALO.

Barnum's City Hotel,
MONUMENT SQUARE, BALTIMORE.
This Extensive Establishment, erected expressly
for a Hotel, with every regard to comfort and con-
venience, is situated in the centre and most fashionable
part of the city, and but a few minutes' walk from the
Railroad Depots and Steamboat Landings.
The House has lately undergone a thorough repair,
embracing many valuable improvements, and will ac-
commodate 250 Guests. **BARNUM & CO.**

American Hotel,
Pratt street, opposite the Railroad Depot,
BALTIMORE.
HENRY M. SMITH.....Proprietor.
Late of the Exchange & St. Charles Hotels, Pittsburgh

Washington Hotel,
BY **JOHN GILMAN,**
\$1 Per Day.
No. 206 Pratt street, (near the Depot),
BALTIMORE.

**GUY'S
United States Hotel,**
(Opposite Pratt street Railroad Depot),
BALTIMORE.
JOHN GUY. WILLIAM GUY.

DUNLAP'S HOTEL,
On the European Plan,
NO. 135 FULTON STREET,
Between Broadway and Nassau St.,
NEW YORK.

JONES' HOTEL,
NO. 152 CHESTNUT STREET,
PHILADELPHIA.
Baldens & West, Proprietors.

Fountain Hotel,
LIGHT STREET, BALTIMORE,
HURSTON.....Proprietor.

BUSINESS CARDS.

Walter R. Johnson,
CIVIL AND MINING ENGINEER AND AT-
torney for Patents. Office and Laboratory, F St.
opposite the Patent office, Washington, D. C.

Lithography.
JOHN P. HALL & CO.,
161 Main st., Buffalo, (Commercial Advertiser Build.)
Are prepared to execute all kinds of Lithography
in good style and at reasonable rates. Particular at-
tention will be paid to Engraving Railroad Maps, En-
gineer's Plans and drafts, etc., and orders in this line
are respectfully solicited.

**Cumberland, (Md.) Coals for
Steaming, etc.**
ORDERS RECEIVED FOR AND FILLED
by
J. COWLES, 27 Wall St., N. Y.

J. & L. Tuckerman,
IRON COMMISSION MERCHANTS,
AND MANUFACTURERS OF
ULSTER BAR & POUGHKEEPSIE PIG IRON,
69 WEST STREET,
NEW YORK

Henry I. Ibbotson,
IMPORTER of Sheffield and Birmingham Goods.
Also, Agent for the Manufacture of Telegraph
Wire.
218 PEARL ST., NEW YORK.

Charles T. Jackson, M. D.,
STATE ASSAYER, late Geologist to Maine, Rhode
Island, New Hampshire, and the United States,
offers his services to his friends and the public in mak-
ing any Chemical, Mineralogical or Geological re-
searches that may be required for the improvement of
Agriculture and the Manufacturing Arts. Particular
attention will be paid to the exploration of mines and
to assaying of ores of the metals.
State Assayer's office, 31 Somerset st.
Boston Sept. 3, 1850.

STEEL AND FILES.
R. S. Stenton,
20 CLIFF STREET, NEW YORK,
AGENT FOR
J. & RILEY CARR,
BAILEY-LANE WORKS, SHEFFIELD,
Manufacturers of Cast, Shear, German, Blister, and
Spring Steel,
Of all descriptions, Warranted Good.
FILES.

Manufacturers of Machinists' Warranted Best Cast
Steel Files, expressly for working upon Iron and Steel,
made very heavy for recutting.
A full Stock of Steel and Files at all times on
hand. 6m4

Dudley B. Fuller & Co.,
IRON COMMISSION MERCHANTS,
No. 139 GREENWICH STREET,
NEW YORK.

Manning & Lee,
GENERAL COMMISSION MERCHANTS,
NO. 51 EXCHANGE PLACE,
BALTIMORE.

Agents for Avalon Railroad Iron and Nail Works.
Maryland Mining Company's Cumberland Coal 'CED'
—'Potomac' and other good brands of Pig Iron.

Samuel Kimber & Co.,
COMMISSION MERCHANTS
WILLOW ST. WHARVES, PHILADELPHIA.
AGENTS for the sale of Charcoal and Anthracite
Pig Iron, Hammered Railroad Car and Locomo-
tive Axles, Force Pumps of the most approved con-
struction for Railroad Water Stations and Hydraulic
Rams, etc., etc.
July, 27, 1849.

James Herron, Civil Engineer,
OF THE UNITED STATES NAVY YARD,
PENSACOLA, FLORIDA.,
PATENTEE OF THE
HERRON RAILWAY TRACK.
Models of this Track, on the most improved plans,
may be seen at the Engineer's office of the New York
and Erie Railroad.

PLUSHES

FOR

Railway Cars & Omnibuses.
F. S. & S. A. MARTINE,
112 WILLIAM ST., NEAR JOHN.

ARE now receiving a large and complete assort-
ment of Plain and Figured PLUSHES, of their
own importation, which will be sold at the lowest
market price, viz: Crimson, Maroon, Scarlet, Green,
Blue, Purple, etc.
ALSO—CURLED HAIR, the best manufactured
in market.

**To Railroad Companies,
Machinists, Car Man-
ufacturers, etc., etc.**
CHARLES T. GILBERT,
NO. 80 BROAD ST., NEW YORK.

IS prepared to contract for furnishing at manufac-
turer's prices—
Railroad iron,
Locomotive Engines,
Passenger and Freight Cars,
Car Wheels and Axles,
Chairs and Spikes.
Orders are invited; and all inquiries in relation to
any of the above articles will receive immediate atten-
tion

**Manufacture of Patent Wire
ROPE AND CABLES,**
For Inclined Planes, Suspension Bridges, Standing
Rigging, Mines, Cranes, Derrick, Tilters, &c., by
JOHN A. ROEBLING, Civil Engineer,
TRENTON, N. J.

FORGING.
Ranstead, Dearborn & Co.,
MANUFACTURERS OF
LOCOMOTIVE CRANKS AND CAR AXLES,
ALSO
WROUGHT IRON SHAFTING,
And All Kinds of Hammered Shapes.
Office 25 Foster's Wharf, Boston.

Samuel D. Willmott,
MERCHANT, AND MANUFACTURER OF
CAST STEEL WARRANTED SAWS,
—AND FILES—
IMPORTER OF THE
GENUINE WICKESLY GRINDSTONES
NO. 8 LIBERTY STREET,
NEW YORK.

Railroad Instruments.
THEODOLITES, TRANSIT COMPASSES,
and Levels, with Fraunhofer's Munich Glasses,
Surveyor's Compasses, Chains, Drawing Instru-
ments, Barometers, etc., all of the best quality and
workmanship, for sale at unusually low prices, by
E. & G. W. BLUNT,
No. 179 Water St., cor. Burling Slip.
New York, May 19, 1849.

IRON.

Iron.

Pig Iron, Anthracite and Charcoal; Boiler and Flue
Iron, Spring and Blistered Steel, Nail Rods, Best Re-
fined Bar Iron, Railroad Iron, Car Axles, Nails, Stove
Castings, Cast Iron Pipes of all sizes, Railway Chairs
of approved patterns for sale by
COLEMAN, KELTON & CAMBELL,
109 N. Water St., Philadelphia.

Iron Store.

THE Subscribers, having the selling agency of the
following named Rolling Mills, viz: Norristown,
Rough and Ready, Kensington, Triadelphia, Potts-
grove and Thorndale, can supply Railroad Companies,
Merchants and others, at the wholesale mill prices for
bars of all sizes, sheets cut to order as large as 68 in.
diameter; Railroad Iron, domestic and foreign; Loco-
motive tire welded to given size; Chairs and Spikes;
Iron for shafting, locomotive and general machinery
purposes; Cast, Shear, Blister and Spring Steel; Boil-
er rivets; Copper; Pig iron, etc., etc.

MORRIS, JONES & CO.,
Iron Merchants,
Schuylkill 7th and Market Sts., Philadelphia.
August 16, 1849. 1y33

Bowling Iron. Stamped B.O.

Railway Tire Bars
Locomotive and other Axles
Boiler Plates
Rivet Iron
Locomotive Frame do
Bars,
and every other description of this superior Iron.

The subscribers, agents for the sale of Bowling Iron, are prepared to execute orders for importation, especially for railway and machinery uses, with despatch from the manufacturers.

RAYMOND & FULLERTON, 45 Cliff st.

**Ibbotson, Brothers & Co's
CELEBRATED CAST STEEL**

AND

Best Cast Steel Royal Improved Files, well known as better adapted for Engineers' and Machinists' purposes than any now in use in the United States.

Every description of Square, Octagon, Flat and Round Cast Steel, Sheet, Shovel and Railway Spring Steel, etc., and Steel to order for any purposes—manufactured at their works in Sheffield—and universally known by the old stamp "Globe."

HENRY I. IBBOTSON, Agent,
218 Pearl st., New York.

**Smith & Tyson,
IRON COMMISSION MERCHANTS,
BALTIMORE.**

REFINED Junata Charcoal Billet Iron for Wire. Do. for Bridging, of great strength. Flat Rock, Boiler and Flue Iron, rolled to pattern. Elba, Wheel Iron of great strength and superior chilling properties. Elba Forge Iron, American Shot Iron, Cut Nails, Spikes and Brads, Nail and Spike rods, Railroad Spikes of superior quality, Wrought Chair plates of any pattern, punched or plain.

**WILLIAM JESSOP & SONS'
CELEBRATED CAST-STEEL.**

The subscribers have on hand, and are constantly receiving from their manufactory,

PARK WORKS, SHEFFIELD,

Double Refined Cast Steel—square, flat and octagon. Best warranted Cast Steel—square, flat and octagon. Best double and single Shear Steel—warranted. Machinery Steel—round.

Best and 2d gy. Sheet Steel—for saws and other purposes.

German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.

Genuine "Sykes" L Blister Steel.

Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by

WM. JESSOP & SONS,

Also by their Agents—

Curtis & Hand, 47 Commerce street, Philadelphia.

Alex'r Fullerton & Co., 119 Milk street, Boston.

Stickney & Beatty, South Charles street, Baltimore.

May 6, 1848.

Railroad Iron.

B. O. Railway Tires, Railway Wheels,
Scotch Pig Iron, Tin Plates and Banca Tin,
Muntz's Patent Metal Sheathing,
Baltimore Copper.

Contracts for Rails made on behalf of the manufacturers, for delivery at any ports in the United States, at fixed prices.

Bowling Tires and Tire Bars and Scotch Pigs imported to order.

Muntz's Ship-sheathing, and a general stock of Tin Plates and Banca Tin in store, and for sale by

RAYMOND & FULLERTON, 45 Cliff st.

**IRONDALE PIG METAL, MANUFACTURED
and for sale by the Bloomsburg Railroad Iron Co.**

LINDLEY FISHER, Treasurer.

75 N. Water St., Philadelphia.

Car Wheel Iron.

THE celebrated cold blast "Conowingo" Pig Iron, for Railroad Wheels, Chilled Rolls, etc., for sale by

E. PRATT & BROTHER,

Baltimore, Md.

Railroad Iron.

3,000 TONS C. L. MAKE 63½ lbs. per yard, now landing and to arrive.

Also contracts made for future delivery of above superior make English Iron.

300 Tons Banks Best Iron, Round, Square and Flat.

100 " English Bar " " "

10 " 9-16 Square Iron for Railroad Spikes.

For sale in lots to suit purchasers by

DAVID W. WETMORE.

New York, March 26, 1850.

3m

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

**JOHNSON, CAMELL & Co's
Celebrated Cast Steel,**

AND

ENGINEERING AND MACHINE FILES, which for quality and adaptation to mechanical uses, have been proved superior to any in the United States. Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cyclops Steel Works Sheffield.

JOHNSON, CAMELL & CO.,
24 Cliff St., New York.

November 23 1849.

Bowling Tire Bars.

40 Best Flange Bars 5½x2 inches, 11 feet long.
40 " 5½x2 " 7 feet 8 in. long.
40 " Flat " 6x2 " 11 feet long.
40 " " 6x2 " 7 feet 8 in. long.

Now in store and for sale by

RAYMOND & FULLERTON,
45 Cliff street.

**Wheel, Forge and Foundry
Iron.**

LOCUST GROVE Wheel Iron of great strength and superior chilling property.

Balt. Charcoal Forge Iron, from Patuxent, Curtis Creek and Gunpowder furnaces.

Elkridge Foundry Iron, of superior strength and softness. Anthracite and Charcoal Iron from Pennsylvania and Virginia. Gas and Water Pipes, Lamp Posts from Elkridge furnace.

LEMMON & GLENN,

62 Buchanan's Wharf, Baltimore.

\$m9

Railroad Iron.

1650 Tons, weighing about 61 lbs. per yard, 40 tons, weighing about 52 lbs. per yard, and 825 tons, weighing about 53½ lbs. per yard, of the latest and most approved patterns of T rail, for sale by

BOORMAN, JOHNSTON & CO.,

119 Greenwich street.

New York, Aug. 26, 1850.

N.B.—B. J. & Co. are also prepared to take contracts for English rails, delivered in any of the Atlantic ports of the United States.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract to deliver Rails of superior quality, and of any size or pattern, to any ports of discharge in the United States.

COLLINS, VOSE & CO.,

74 South St.

New York, June 1, 1850.

Tredegar Iron Works.

ROLLING MILL FOUNDRY AND MACHINE SHOPS. The undersigned continues to manufacture at his Works in this city (from best charcoal metal) Bar Iron of every description, embracing—

Rounds and Squares, from ½ to 5 inches diameter. Flats, from ½ to 7 inches, all thicknesses.

Bands and Scrolls, all sizes. Boiler plate and Plough Iron. Railroad and Locomotive Axles and Tires. Locomotive Frames, Spikes and Plates. Hoops, Ovals, Half Ovals, Half Rounds, Angle, T, L, and indeed every description of Iron usually manufactured, all of which he warrants to be equal to any made in this country.

He also manufactures at his Foundry and Machine Shops all descriptions of Railroad Work, say, Locomotives, Railroad Wheels and Axles complete and ready for the road, Railroad Chairs, etc. Also, Marine and Stationary Engines all sizes, Sugar mills and Engines, Horse mills, and every kind of Machinery usually required for the operations of the country.

He has paid particular attention to getting up machinery, etc., for Gold Mine operations, and those in want of such work might find it to their advantage to give him a call.

J. R. ANDERSON.

Richmond, Va., Sept. 10, 1850.

CUT NAILS OF BEST QUALITY, BAR IRON (including Flat Rails) manufactured and for sale by

FISHER, MORGAN & CO.,

75 N. Water St., Philadelphia.

Car Wheel Iron.

100 Tons "Columbia" No. 2 Cold Blast Charcoal Iron.

300 Tons "Salisbury" No. 1, do. do.

For sale by CHARLES T. GILBERT,
No. 80 Broad st.

New York, Sept. 21, 1850.

Railroad Spikes.

THE subscribers are prepared to make and execute contracts for Railroad Spikes of a superior quality, manufactured by the New Jersey Iron Company, at Boonton.

DUDLEY B. FULLER & CO.

139 Greenwich st. corner of Cedar.

**S. S. Keyser & Co.,
IRON WAREHOUSE,**

Corner of South and Pratt Streets,
BALTIMORE, MD.

Selling Agents for the Rough and Ready Bar Iron and Elk Boiler and Flue Iron Rolling Mills, Sarah and Taylor Furnaces, and Wrightsville Hollow Ware Foundry, and Dealers in Bar and Sheet Iron, and Cast, Sheer, German, Bilster, Spring and Electro-Steel, etc., etc.

Railroad Spikes, Boiler Rivets, etc.

THE Subscribers, Agents for the sale of James S. Spencer's, Jr., Railroad and Boat Spikes, Boiler Rivets, and Wrought Iron Chairs for Railroads, made at his Works near this city, will execute all orders with promptness, despatch, and of the best quality.

ALSO IMPORTERS of English refined and Merchant bar Iron; Extra refined Car and Locomotive Axles (from 3½ to 6½ inches in diameter); B. O. Locomotive Tire (welded by Baldwin). Also, supply Boiler and Flue Iron cut to pattern or otherwise.—Spring, Shear, and Cast Steel, etc., etc., etc.

T. & E. GEORGE.

Philadelphia, November 14, 1850.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract for the delivery of English, Welsh and Scotch Rails, of any pattern and weight, also for every description of English, Welsh, Scotch, and Swedish Iron, Railway Chairs and Spikes, Rivets, Bolts, Nuts, Washers, Chain Cables, Anchors, Tin Plates, German Spelter, Iron Castings, and every description of Machinery.

WILLIAM BIRD & CO.,

Iron and Tin Plate Merchants,

44 Wall st., New York.

And at 5 Martin's Lane, City, London,
and 140 Buchanan st. Glasgow.

July 27th, 1850.

**Railroad Spikes, Wrought
Chairs and Fastenings.**

THE subscribers continue to manufacture, with increased facilities, Hook and Flat Head Railroad Spikes and Chairs. The points being finished by hand, have a long taper, and sharp point, and are much superior to those made entirely by machinery.

We are also prepared to furnish Wrought Chairs, Clamps and Fastenings of every description, either punched or plain. The best quality of refined iron is used in the above articles, and our prices will be made as favorable as any in the country.

The patent Clinch Spike will be found an improvement to secure the rail at the joints.

They drive in the manner shown and are not liable to work loose.

All communications, addressed to the undersigned, will meet with prompt attention.

SMITH & TYSON,

No. 25 South Charles st., Baltimore Md.

Railroad Iron.

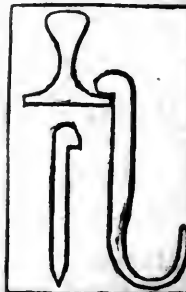
THE "Montour Iron Company" is prepared to execute orders for Rails of the usual patterns and weights, and of any required length not exceeding 30 feet per rail. Apply at the office of the Company,

No. 73 South 4th st., Philadelphia,

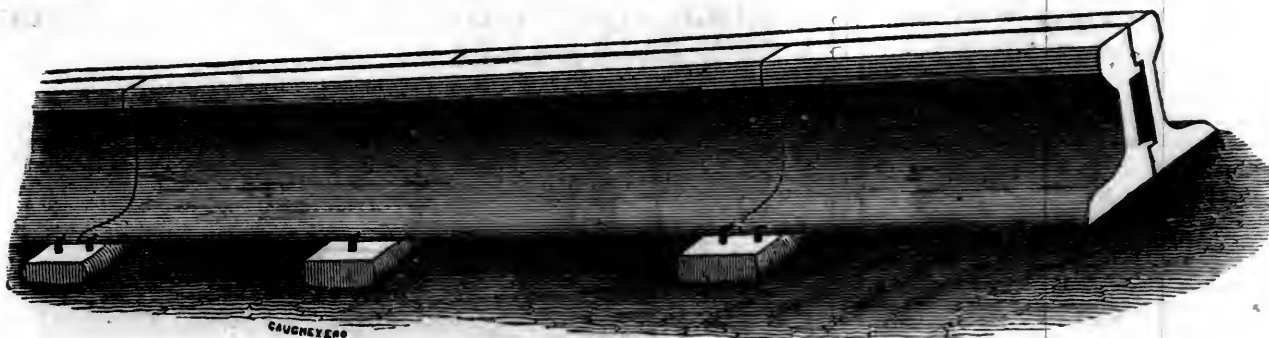
Or to the Agents,
CHOUTEAU, MERLE & SANFORD,

No. 51 New st., New York.

September, 1850.



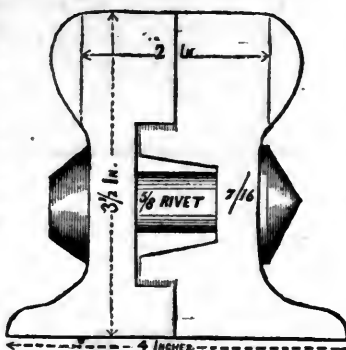
PATENT COMPOUND RAIL.



THE UNDERSIGNED NOW OFFER TO THE Railroad Public a new Compound Railroad Bar, which possesses, as they believe, a decided superiority over every kind now in use. The Cuts annexed will give a good idea of the form of the Rail, and the mode of combination.

This Rail has now been in use on the New York and Erie and the Utica and Schenectady Railroads for nearly two years, and has proved itself to be a durable and continuous rail, realizing the advantages of a theoretically perfect rail, over the one in common use. We invite the attention of Railroad Companies to a careful examination of the merits of the form now offered.

The advantages of this Rail are: first, it effects a saving of from 25 to 50 per cent. in the wear and tear of the machinery; secondly, it saves to a vastly greater extent in the repairs of track; thirdly, it secures a much higher rate of speed with the same power; and what is of still



greater importance, it offers complete protection against most of the accidents to which companies are liable. For these reasons, it is believed to be not only the best, but the cheapest rail that can be used. In enumerating its advantages, the proprietors only repeat the statements of competent persons, who have had the best opportunities of judging of its merits.

This improved Rail is now being manufactured at the Works of the Mount Savage Iron Co. in Maryland. Any communications or enquiries addressed to either of the undersigned will receive prompt attention.

J. F. WINSLOW, President,
Troy, N. Y.
ERASTUS CORNING, Albany.
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore.

April 8, 1851.

Faggotted Car and Engine Axles

FORGED by RANSTEAD, DEARBORN & Co., Boston, Mass.

These Axles enjoy the highest reputation for excellence, and are all warranted.

TO RAILROAD COMPANIES, CAR MANUFACTURERS, etc.

THE Undersigned hereby gives public notice, that the Commissioner of Patents, pursuant to his decision in relation thereto, on the 8th day of October, 1850, issued to him a Patent for the sole right to manufacture, and exclusive use of the INDIA RUBBER CAR SPRING, on account of priority of invention of said Spring.

New York, Oct. 23, 1850.

Iron Trade of Pennsylvania.

DOCUMENTS and Statistics relating to the Manufacture of Iron in the State of Pennsylvania—giving a history of the manufacture from its commencement to this date, illustrated by diagrams. Also tables giving the address and capacity of every establishment in the State. Prepared by direction of the late convention of the trade held in Philadelphia.

For sale by
LINDSAY & BLACKISTON, Philadelphia.
FIELDING LUCUS, Jr., Baltimore.
HENRY G. NICHOLS, 79 Water st., N. Y.

or at this office—price \$1 00.
It will be sent by mail to any order enclosing the money, and post paid.

Ulster Iron.

THE ULSTER IRON WORKS, Saugerties, N. Y., continue in full operation. Orders for round, square, flat, band, hoop and scroll iron, will be received and promptly executed by

J. & L. TUCKERMAN,
69 West St., New York.

Railway Iron.

THE Subscribers will contract to deliver, in the course of the ensuing Spring and Summer, the best English Rails, made by a particular specification, and of any pattern required.

DAVIS, BROOKS & CO.,
68 Broad st.

On hand for sale, English rails of 53 lbs. to the yard, made by particular specifications.
January 10, 1851. 2m

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention.

J. F. WINSLOW, President,
Troy, N. Y.
ERASTUS CORNING, Albany.
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md.

November 6, 1848.

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phoenix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehanna river; which two establishments are now turning out upwards of 1800 tons of finished rails per month.

Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.

REEVES, BUCK & CO.
45 North Water St. Philadelphia.

March 15, 1849.

LAP—WELDED WROUGHT IRON TUBES

FOR

TUBULAR BOILERS,
FROM ONE AND A QUARTER TO SEVEN
INCHES IN DIAMETER.

THE ONLY Tubes of the same quality and manufacture as those so extensively used in England Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER & SON, Patentees,
28 Platt street, New York.

AMERICAN PIG IRON.

"POUGHKEEPSIE" brand, Dutchess Co., N. Y.
"GLENDON" brand, Lehigh county, Pa.
Orders for the above two well known brands will be received, and promptly executed, by

J. & L. TUCKERMAN,
69 West St., New York.

American Cast Steel.

THE ADIRONDAC STEEL MANUFACTURING CO. is now producing, from American iron, at their works at Jersey City, N. J., Cast Steel of extraordinary quality, and is prepared to supply orders for the same at prices below that of the imported article of like quality. Consumers will find it to their interest to give this a trial. Orders for all sizes of hammered cast steel, directed as above, will meet with prompt attention.

May 28, 1849.

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head From the excellence of the material always used in their manufacture, and their very general use for rail roads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.

JOHN F. WINSLOW, Agent.
Albany Iron and Nail Works, Troy, N. Y.
The above Spikes may be had at factory prices, of Erastus Corning & Co Albany; Meritt & Co., New York; E. Pratt & Brother, Baltimore, Md.

Stickney & Beatty, DEALERS IN IRON AND IRON MANUFACTURERS.

AGENTS for the Baltimore City Rolling Mill, (Works of Messrs. Ellicott) also agents for the sale of the Laurel, Locust Grove and Gunpowder (Balt.) Forge Pig Irons; Hupp's Cold Blast Columbia Wheel Iron, Fort and anti-Eatam Pig Irons. Caledonia, Columbia and Capon Cold Blast Boiler Blooms, warranted; Wm. Jessop & Son's Steel; Old Colony and anti-Eatam Nails; Bar Iron, Boiler Plates, Hoop, Sheet, Oval, Half Oval, Horse Shoe and other Iron.

Exchange Place, Baltimore.

Railroad Iron.

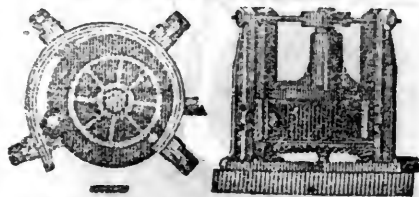
2000 Tons, weighing 53 pounds per lineal yard, of the most approved pattern of T rails, in store and to arrive, for sale by

COLLINS, VOSE & CO.,
74 South St.

New York, June 1, 1850.

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phoenixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous; considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll sounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y. P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery for making Spikes, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

CHILLED RAILROAD WHEELS.—THE UNDERSIGNED are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

Brown's Old Established SCALE WARE HOUSE,

NO. 234 WATER ST., NEW YORK.

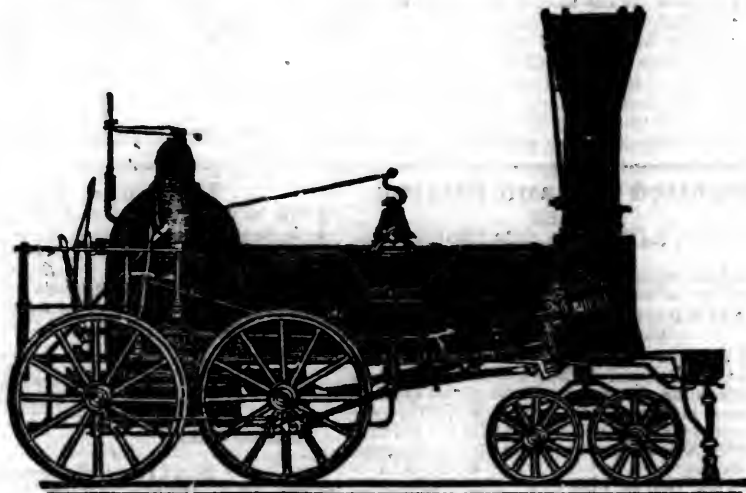
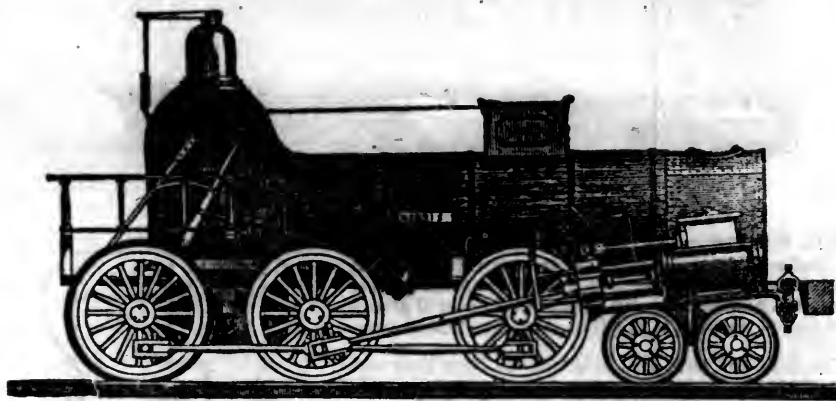
THE Subscriber, Practical Manufacturer of Scales of every description, respectfully asks the attention of Railroad Companies to his Improved Wrought Iron Railroad Track and Depot Scales which for strength, durability, accuracy, convenience in weighing, and beauty of workmanship, are not surpassed by any others in this country.

He is aware that this is rather a bold assertion for him to make, yet he can say with confidence that they have but to be tried to give them precedence over all others.

J. L. BROWN.

Bank Scales made to order, and all Scales of his make Warranted in every particular.

References given if required

NORRIS' LOCOMOTIVE WORKS.
BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,

THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size. Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tyres are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS

PATENT MACHINE MADE HORSE-SHOES.

The Troy Iron and Nail Factory have always on hand a general assortment of Horse Shoes, made from Refined American Iron.

Four sizes being made, it will be well for those ordering to remember that the size of the shoe increases as the numbers—No. 1 being the smallest.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

Etna Safety Fuse.

THIS superior article for igniting the charge in wet or dry blasting, made with DUPONT'S best powder, is kept for sale at the office and depot of

REYNOLDS & BROTHER,

30 So. Manufacturers, St.

No. 85 Liberty St.

NEW YORK.

And in the principal cities and towns in the U. States.

The Premium of the AMERICAN INSTITUTE was awarded to the Etna Safety Fuse at the late Fair held in this city.

November 3, 1849.

ly

UNION WORKS,

North street, opposite the Railroad Depot,
BALTIMORE.

Poole & Hunt,

Manufacturers of Steam Engines and Mill Gearing, Machinists' Tools, and all kinds of heavy and light Machinery.

Also put up Arrangements of Wrought Iron Pipes for heating buildings and conveying steam or water. Castings of every kind furnished at short notice.

Every exertion will be made to insure the satisfaction of customers.

Patent Machine Picket Fence

SIX DIFFERENT STYLES of this fence are now made by patent machinery; and is by far the most economical fence for Railroads, Farms, Yards, etc., ever yet offered to the public, costing only from 4 to 30 cents per foot, according to pattern; and is so put up as to be shipped at a trifling expense. Full particulars will be furnished, by addressing the subscriber, to whom all orders should be sent.

N. STRATTON, Troy, N.Y.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

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GEN. CHAS. T. JAMES, *For Manufactures and the Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & Co., 136 NASSAU ST.

Saturday, May 31, 1851.

Copper Mines of Lake Superior.

Although the mining operations of the Lake Superior region were greatly increased the last year, the amount of copper shipped fell short of the estimates that had been made for the production of the season. This was owing to several causes—the principal one of which was the want of stamp-mills to prepare the fine copper. This at the different mines not provided with the machinery for dressing necessarily remained behind. This was the case especially at the *Minesota*, the mill not being quite ready up to the close of navigation.—The only mills in operation were those of the *Cliff* mine, *North American* and *North West*; and that their shipments were not so large as anticipated is explained by the unusually late period that the navigation remained open in the fall of 1849, thus enabling them to ship off in that year what was calculated upon for the next; and also to the mines

themselves not being so well opened in advance for stoping, as was supposed; hence this work could not be so extensively carried on through the summer. The *Minesota* mine especially was greatly put back by the necessity of taking up the floor of the lower level, in consequence of an error in the laying out of the work. In no instance, that we are aware of, have the mines that were counted upon to produce the amount estimated, failed in consequence of want of sufficient copper. On the contrary, this has been found more and more abundant; and several new mines are now in operation, which during the present year promise to make no small addition to the production of the copper region. The only new one which made a shipment the last year was the *Forest*, on the west side of the *Ontanagon*, opposite the *Minesota*. The amount of this was 9867 lbs., in masses and barrel work, which yielded 54 per cent. This is the largest quantity that has been shipped by any mine the first year of its operations, with the exception of the *Minesota*. The stamp work is on hand ready for the mill, which will be built this summer.

The following table exhibits the receipts from the different mines at the Sault during the year:
Receipts of Copper at Sault Ste. Marie, from the Lake Superior Mines, during the year 1850.

MINE.	Barrels of "Barrel" work.	Bbls. stamps.	No. of masses.	Total.
Cliff.....	883	779	401	709 48
North American.....	115	220	28	128 1222
Minesota.....	70	4	110	103 651
North West.....	115	96	114	129 1164
Siskowet (Isle Royale).....	30	.....	33	19 394
Forest.....	16	.....	5	5 1693
Copper Falls.....	7	.....	.....	2 1676
Pittsburg and Isle Royale.	6	.....	11	5 57
Total.....	.....	.....	.....	1103 905

We are not furnished with the per centage that the shipments yielded. The *North American*, however, did not equal in richness what had been before sent from this mine, and judging from what we saw of the *Cliff* copper, we should not suppose this to be equal to the copper of the previous year. The published yearly report of this mine we have not yet been able to obtain. The following data we extract from the *Cincinnati Gazette*:

"The dividend of the year is announced at ten per cent. The product of the year was \$176,129; expenses \$116,855, including the cost of a new steam engine, transportation of it, etc. The No. 1 shaft has been sunk to a depth of 310 feet, and No. 2 to 351 feet. This mine has been worked since 1847, and with an average number of miners of about 60. The total product of the mine up to 1st December, 1850, has been \$658,310. The capital stock paid in is \$110,905, upon which in three years \$204,000 dividends have been paid."

The population of the mining district has increased till it now numbers about 2000, most of whom are laborers. These are insufficient for the demand, and labor commands as high a price as in any part of the country. Facilities for reaching the mines have been greatly increased, and transportation of freight is now at less rates than have before obtained. At each of the mines more or less land has been cleared, and the crops of potatoes, hay, oats, etc., have been very abundant—still, however, far from supplying the demands of the population. The reputation of the climate for salubrity and the restoration of invalids, especially of consumptives, is now well established, and the region is becoming a place of resort for other objects than those connected with the mines.

At this season the boats are thronged with passengers, cattle and horses, and freight. Yesterday (May 17th) the propeller *Manhattan* left the *Sault Ste. Marie* with about 200 people, 40 head of cattle and horses, and loaded down with freight. The provision on the upper lake is insufficient for conveying away the supplies which arrive from below. There are now only two propellers running, the *Independence* being still ashore in *Eagle Harbor*, but the *Monticello*, a fine large boat, is on the way over the portage, and will be launched above in about two weeks. This boat will connect with *McKnight's* line below—meeting the *London* on her arrival from *Detroit*, and going directly on

without causing detention at the Sault. Mr. Mc Knight has already employed two other steamers this spring in bringing freight from Detroit; and besides these, belonging to another line, is the fine new steamer *Northerner*. When the *Monticello* and the *Independence* are both afloat on Lake Superior, nothing more can be required for the expeditious conveyance of passengers and freight from Detroit to the mines. It has been suggested, and we hope the scheme will be accomplished, that the lines arrange an "Excursion," at reduced rates, during a month or more in the summer. Many would thus be induced to go up and see the country, who otherwise would not be likely to do so.

A ship canal past the Falls at the foot of the lake seems now to be generally dispaired of, and attention begins to be directed to a private enterprise of connecting Lake Superior with Green Bay by a railroad fifty miles in length, from the mouth of Carp river. This would go through the Iron region, which is filling up almost as rapidly as the copper region. By this road the main supplies could be delivered to the mines with considerable reduction of freight, by reason of less distance of transportation; and also at much less first cost, being purchased along the western shores of Lake Michigan and at Chicago. This would take a large and increasing business away from Detroit, and the State of Michigan, which the mining companies generally would not particularly regret, the State pursuing a very unwise and narrow minded policy in relation to these companies, which are developing its richest resources. By the present Constitution, just adopted, no charters can hereafter be obtained for the transaction of business, except the officers be Michigan men, and these are to be restricted in such a way as to render the charter useless. Already has this law prevented the formation of a company for the clearing out and making navigable for steamboats, the principal river of the upper peninsula; and for a long time must it prevent the establishment of a bank for the accommodation of the mining population, and worse than all of saving-banks, which would save to many a poor miner the hard-earned wages, which now soon find their way to the grog-shops—the curse of the country. It is to be hoped that this upper peninsula, so different in its interests, and so far separated from the lower, may, as the District of Maine, in 1820, was set off from Massachusetts, to which it belonged, also become a distinct territory, or state, in good time, governed by laws, such as have led to the highest prosperity our eastern manufacturing states.

Beside this railroad, in relation to which some progress has already been made, a common road has been opened the last winter, from the Ontonagon to the Wisconsin river, due south about 100 miles. By this road, cattle can be driven through at much less cost than they can be brought in boats from Detroit. A new arrangement for the mail in the winter will probably be made, either by this way, or by Carp river to Green Bay, so that it can be carried through weekly. The interests of the country have become too great for a monthly mail to be longer satisfactory.

In this communication, we will not undertake to notice all the mines which are now in operation. On Keeweenaw Point, as well as on the Ontonagon, many new enterprises were undertaken the last year, some of which we shall, as opportunity offers, describe with some minuteness of detail. Of these, the most prominent on Keeweenaw Point are the following:—*Copper Falls*, which after languishing

for several years, has now made a great start by the discovery last fall of a new vein with extensive ancient works upon it. The discovery was made by Mr. S. W. Hill, who is now directing the operations there.

The *Eureka*, *Zeolite*, *Phoenix*, *North Western*, *Iron City* and *Cape* are all actively prosecuted, and have all taken out more or less copper; but none of them are provided with stamp mills.

Near Portage Lake some new operations have been carried on during the winter, of the success of which we know nothing.

In the Ontonagon region we understand that the *Forest*, *Farm*, *Adventure*, *Aztec*, *Ridge*, *Peninsula*, *Norwich* and *Trap Rock* have all copper ready for shipment. Neither of these is furnished with a stamp mill.

The country is covered with squatters, who have secured pre-emption rights to all the promising tracts on the mineral range, not otherwise taken up.

In our next communication, we will give a particular account of the *Peninsula mine*. H.

The Wilmington and Manchester Railroad.

As we have not been favored with a copy of the recent report of the above company, we give the following extract from it, copied from one of our southern exchanges. This company has recently been engaged in negotiating in this market, and we are happy to learn successfully, bonds to a sufficient amount to purchase the iron and equipment for their road. It is a most important line, and will exert a very favorable influence upon all our southern roads when it shall be opened, which will be in less than two years.

The Wilmington and Manchester railroad, now in progress from Wilmington, N. C., the terminus of the Wilmington and Raleigh railroad, (now in operation), to the Camden branch of the S. C. railroad, (also in operation), near Manchester, S. C., a distance of 162 miles.

By means of this road, the great chain of railroads along the Atlantic coast, from Montgomery, Ala., to the northern cities, will be complete, and the disagreeable sea route between Wilmington and Charleston, S. C., so much dreaded and deprecated by the travelling public, dispensed with.

Besides, in taking the place of the Wilmington boats, it must inevitably be substituted in their stead, for the transportation of the main northern and southern mail, a change now greatly desired by the post-office department, and the public generally; and especially so by the Wilmington and Raleigh railroad company, who are anxious to dispense with their boat line, heretofore and still entailing upon them a heavy expense, and but little profit.

The transportation by this road, of the mail, will shorten the schedule time from New York to Augusta, Ga., about nineteen hours, assuming that the rest of the present route in connexion with it, is retained; but by some modifications of the schedule, much more time may be saved, and so soon as the Georgia railroad connects with the Montgomery, Ala., (the work on which is now progressing in a manner that puts its completion beyond doubt within the next twelve months,) the saving of time from New York to New Orleans would be from sixty to seventy hours.

The position of this road, its connections north and south, its easy grades, freedom from curves, and consequently cheap construction, is such as to put it beyond the competition of any other route for the mail and travel between New Orleans and New York. This consideration has great weight in the original undertaking, and has given confidence to its stockholders and friends ever since.

By an examination of the map, it will be seen how the extensions south and west of the Georgia roads are progressing; and as these avenues of travel are opened, the lateral branches multiplied, and the intercourse between that country and the

northern cities increased, the amount of travel which must pass over this road as the great trunk line from north and south, cannot now be fairly estimated by any comparison which can be drawn from the present business of the connecting lines now in operation on either side of it.

The route selected for the railroad between Wilmington and Manchester is direct and level, shorter than any road now travelled. One hundred and fifty-four miles of the distance is made up of straight lines, connected by easy curves; only eight miles of curves occur in the whole distance, and four and a-half miles of this is in descending the grade at the junction with the South Carolina railroad.

In no instance is the grade over thirty feet per mile, and this for a short distance in particular localities.

From the crossing of the great Pee Dee River, in South Carolina, to Wilmington, a distance of ninety-five miles, the greatest resistance encountered in the direction of the greatest traffic, is that due to a grade of fifteen feet per mile, and this line, with few exceptions, a straight one.

This road occupies an intermediate position at its crossing of the great Pee Dee River with Cheraw, (the head of navigation of that river,) and the sea coast, being about forty miles distant from the former and from fifty to sixty miles of the latter.

The country through which it is located in South Carolina, (some ninety-five miles,) is uniformly fertile, producing cotton and corn in great abundance, and much of it well adapted to wheat. It is so located as to be within twenty miles of the extreme of the productive cotton region below it, and lies below that region along the valley of the great Pee Dee and its tributaries, the only outlet to market for which is the great Pee Dee River, which is not generally navigable for steamers from June to the middle of November, but light boats used as lighters from Cheraw to the crossing of the road can be ordinarily used throughout the entire season.

Once in operation, it will command the whole trade of the Pee Dee county as well as a portion of the valley on the Wateree, as the cost of transportation will not be equal to the freights on the rivers, which at the most important season to the cotton planters, (the coming in of the new crop) are too low for navigation.

Accurate estimates from the census recently taken, and from the actual receipts of cotton in Charleston during the season of 1849-50, from the Pee Dee steamers, show that the country through which this road runs in South Carolina, and that tributary to it for transportation, produced in 1849 some 70,000 bales of cotton, averaging 450 pounds each. This production, large as it may seem, will in a few years be increased considerably, as valuable bodies of land are being prepared and sought for along portions of the line hitherto neglected, for want of facilities of transportation to market, except at great expense.

In that portion of North Carolina traversed by this road contiguous to South Carolina, the soil is equally adapted to the cultivation of cotton, but has not hitherto been used for that purpose, owing to its distance from market and the means of reaching it.

The whole line in that State, however, is through a thick forest of the best pine, well adapted to the making of naval stores, as also affording the best timber for lumber and shipping purposes, or at least as good as can be found in the South.

Railroads. See p. 282.

The *New Haven Palladium*, in an article on the census of the State gives the following results, showing the effect of railroads upon the increase of population. It says:—

The very gratifying gain in Connecticut, greater than for the previous forty years, is due in a great measure, if not entirely, to the railroads which now traverse almost every part of the State. If we examine the returns from the inland towns we will find that those lying on the line of railroads have increased largely, while others with equal natural advantages, have either lost or made very small gains. Take for instance the Housatonic railroad. The towns through which it passes have gained six thousand, while the corresponding range of towns on the east, have gained less than two hun-

dred. The towns on the Norwich and Worcester railroad have gained five thousand, and the adjoining tier of towns about two hundred and fifty. So, also those counties where there are the most railroads, have increased much faster than other towns equally well situated. New Haven has gained thirty-six per cent, while New London has only increased fourteen, Hartford twenty-six and Tolland eleven, Fairfield twenty, and Middlesex eleven.

Lehigh Coal and Navigation Company.

We learn from the Pottsville Mining Register, that the last report of the directors of this company indicates a steady improvement in their affairs. The shipments from the company's mines last season was 424,258 tons, and from all other sources 298,364 tons, making an aggregate of 722,622 tons. Of this amount 89,100 tons went into the Morris Canal; 503,323 tons passed into the Delaware division, and 117,119 tons were used on the line of the Lehigh. The shipments of lumber for the season exceeds forty-one and a half millions feet. Notwithstanding the interruptions mentioned, the amount of arrears of interest provided for in coal, reaches \$398,175, being \$135,410 more than payments on same account in 1849. The principal items of profit for the past year, may be briefly stated as follows:—Net profits from tolls \$353,130 57; from coal, \$221,219 30; from ground and water rents, and lots sold, \$32,826 39. The first of the above items shows a slight falling off; the others a considerable improvement on the corresponding items for 1849. The balance to the credit of profit and loss is \$140,501 61. The disposition of the profits is accounted for by the increase of \$104,118 54 in the assets, and the decrease of \$36,383 07 in the indebtedness of the company.

The report alludes to the reduction of carrying rates on the Schuylkill and other regions, and assumes that relatively none of the mining districts have profited by the reduction, the consumer alone having been benefitted—and the market, unnecessarily disturbed and unsettled; but, thus far, they say they have found sales at last year's prices, for a large proportion of all that will probably be brought from the company's mines during the present season. They say the extent of their production will only be limited by the facilities for transportation. Their boat capacity is set down at 900,000 tons for the season. The company's debt was decreased the year \$36 383, leaving obligations to the amount of \$5,712,770, on the first of January last. The whole amount of the capital stock of the company is \$5,503,550; being 30,071 shares of \$50 each.

Virginia and her Resources.

The following article, copied from the National Intelligencer, will be read with interest. There are but few, we think, who will not be surprised at the exhibit which is here presented of the solid wealth of the "old dominion." The statistical details which go to make up the large aggregate of the resources of the State are derived from the most reliable data, and therefore leave no room for doubt as to their accuracy. The writer of the letter of inquiry which elicited these statements is the Hon. William Selden, of the banking house of Selden, Withers & Co., Washington:—

For the information of our readers, we publish the interesting letter furnished by the Superintendent of the Census Bureau of the United States.—These candid statistics, founded on official returns, which the act of Congress requires, will convince all who read them that the power and resources of this noble commonwealth are very great:

"CENSUS OFFICE, Washington, May 9, 1851.

"Sir—In reply to your letter I may state that, although not prepared to furnish an exact detailed statement of the value of the real estate and personal property in the State of Virginia, the returns have been examined sufficiently to warrant me in stating that the value of real estate

Value of slaves.....	\$278,000,000
Other personal estate.....	147,000,000
	105,000,000
	\$530,000,000

"That there is this amount of wealth in the State of Virginia I have no doubt; and the official result, when fully obtained, if it varies from the above, will exceed it rather than fall short. Estimates have lately been made, placing the amount at \$800,000,000, which I think too great, arising from a too frequent recapitulation of the same capital in different hands—a kind of estimate frequently made, though producing erroneous conclusions, to explain the fallacy of which would require more time than I can now spare, and which to you would be unnecessary and superfluous.

"Very respectfully your obedient servant,
"JOS. C. G. KENNEDY,
"Superintendent Census.

"Hon. Wm. Selden."

Whilst on this subject, it may be well to report the substance of some other statistics lately furnished by the functionaries of Virginia, showing the debt, liabilities and resources of that commonwealth.

The official statement lately made to Virginia by her able second auditor, Mr. Brown, shows that—On the 30th September last the public debt of the State, held by individual and private companies was \$9,035,189 30. Of this debt there is held in Great Britain.....\$2,369,989 20
In France and Germany.....368,300 00

Total in Europe.....	2,738,289 20
In Virginia.....	\$5,651,461 10
In Maryland.....	392,139 00
In the District of Columbia.....	110,400 00
In other States.....	142,900 00

Total in the United States.....	6,296,900 10
---------------------------------	--------------

Aggregate amount in all.....	9,035,189 30
------------------------------	--------------

The same statement shows the apparent liabilities of Virginia for guaranteed bonds issued by companies and corporations to complete her improvements.....9,425,762 49
Total debt and liabilities of the State.....18,460,931 79
The same statement shows the present value of stocks owned by the State to be...\$7,060,565 48
And the value of her stocks that will soon be productive.....4,801,677 91

	11,862,243 39
	\$6,598,708 40

The finance committee of the House of Delegates lately examined the statistics of the auditor, and, after a careful and laborious investigation, proved his figures and estimates to be correct—as will appear by House Document No. 9—"upon the debt, revenue and expenditures of the government."

But the finance committee clearly showed that \$844,000 of the apparent liability of the State would never be real, as private subscribers had not complied with the conditions upon which the State agreed to subscribe.

But let us suppose, for round figures, that the indebtedness of Virginia is \$6,500,000, or that that is the amount for which she is required to provide an annual interest, and what a trifle does it seem, when rated by the magnitude of her various and ample means.

The State, well knowing this, did, on the 23rd of March last, pass a law to authorize the board of public works to borrow, on her credit, four millions of dollars to complete her useful works of internal improvement, and from which a greatly augmented income will be the necessary consequence.

To effect this, the State is about to issue coupon bonds, which will avoid the old trammels which fetter the transfer and negotiability of public stocks. They will run for thirty-five years, and pass from vendor to vendee as often as the seller and purchaser shall desire, without the troublesome formality of assignment and transfer on the

records of the government. The bonds will carry six per cent interest per annum, payable half-yearly in Washington, New York, or wherever the agents and the purchasers of the bonds shall prefer the money to be paid. That the bonds may come within the means of all who desire to purchase them, they will be issued in denominations of from five thousand to five hundred dollars.

To the honor of Virginia, it affords us pleasure to refer to the fact that she has never repudiated nor deferred the payment of her public debt; that she has ample means to discharge every pecuniary obligation into which she could be induced to enter; and that she has recorded her solemn word, upon imperishable statutes, that she never will fail to pay her debts.

Lake Superior Copper Mines.

The copper mines of Lake Superior are fast getting to be one of the most important mining interest in the United States, and we hope during the present season to be able to present to our readers frequent accounts from them, through one Mr. Hodge, who left here some time since for that quarter, who will spend the season there superintending the operations of some of the most important mines. In absence of any letter from him, we herewith present the following account of the operations of the past winter, taken from the first number of the Lake Superior Journal, which has appeared this spring, after a hibernation of six months in the frosty regions of Lake Superior:

The mines on Keewenaw Point during the past winter have been vigorously worked, and have produced a large amount of mineral. The Cliff Mine will probably ship one thousand tons during the season of navigation of 1851. The North American will ship by first boat about one hundred tons, and the North West will have ready for shipping about the same amount. The mineral taken from the mines the past winter is of a superior quality, being less encumbered with rock than any other ever sent to market. The annual expenditures at the Cliff amounts to about eighty-five thousand dollars—at the North American forty-two thousand dollars, and at the North West, about sixty-two thousand dollars. The number of men employed at the first mentioned mine is one hundred and eighty; at the North American, one hundred and ten, and at the North West, one hundred and forty. The character of the mineral taken from these mines is masses, barrel and stamp ore, which, when properly prepared for market, will yield about seventy per cent pure copper. The Cliff dividend is five dollars per share, payable first of February, and five dollars payable on the first day of August—this is declaring sixty thousand dollars on the year's business, and laying away a large sum to their "fund." The North American and North West Mining Companies are prepared to erect machinery for a more extensive operation in their business, and while the debt made by this outlay is liquidated by the present yield of these mines, it is confidently believed that when facilities sufficiently extensive to open them are obtained, their dividends will be second to but few made in the country. The success which has attended the labors of the above mentioned companies (and a few others, which I have not now time to mention) has encouraged men of capital to invest largely in mineral lands upon which new companies have been formed, many of which are now worked under favorable circumstances. The names of the new mines now in operation, are the Iron City, Cape, Agate Harbor, North Western, Zoelyte and Eureka. The names of those which will be opened during the spring are the Star, Gratiot, Winkrop and Dana, all of which are supposed to be good locations. The old Eagle River Works has assumed the name of Phoenix Copper Company, and is being carried on with energy by S. Mandelbaum, Esq., and under very favorable auspices. The Copper Falls Mining Company are prosecuting their works upon new veins discovered last fall by S. W. Hill, Esq. At the time Mr. Hill commenced his explorations, the stock of this company was held at three dollars per share, and but little changed hands at that price, as the mine had long been worked with no very cheering

prospects; but now, so favorable are the indications at this mine, that the stock is held at fifty dollars per share. Recent explorations abundantly prove that other mines equally as rich as the Cliff will soon be opened, as the explorers have been diligently employed in the examination of veins, and have discovered many, the surface appearance of which exhibits as favorable indications of there being a mine as was discovered on the Cliff location when first explored. Those mines that have been thoroughly opened, owe their success to the energetic perseverance of men who battled against the difficulties incident to opening a mine without experimental knowledge; giving their money to carry on extensive works which, at the time, could not have been considered any other than a hazardous undertaking.

The Minnesota mine is, to the mines of the Ontonagon, what the Cliff is to those of Keewenaw Point, far in advance of all others. This company have employed, during the winter, about 150 men—have extended their first level about 1000 feet—have sunk three shafts to the depth of 160, one 1000 feet, and opened the second level about 500 feet. They have also opened a new vein 30 feet north of the original works, by a cross cut at 1st and 2nd level, which is proving exceedingly rich.

They have now commenced stoping, which produces mass copper and rich stamp work in all parts of the mine, some of these masses, now exposed, are estimated at *forty tons each*. For the amount of labor and capital expended on this mine, it has no equal for results in this or in any country. This company will probably produce 500 tons for shipment this season.

The Peninsula Mine has been opened to the depth of eighty feet, producing copper from the shaft and proving an exceedingly rich vein. This company have had at work only a small number of men, but expect to ship about ten tons of copper this season. Considering the light cost of working their mine since commencing operations, and the favorable locality, it bids fair to take rank among the best mines on the lake.

Extensive explorations are in progress on the Minnesota location, with a view of greatly enlarging their works during the present season, or to the forming of new companies for the development of its wealth.

The Forest mining company, on the west side of the river Ontonagon has been working about thirty men and have extensively opened their mine during the winter. The ground is proving rich in mass and stamp work, and they will have considerable for shipment. The company are preparing to erect a stamp mill and saw mill, and to make other extensive improvements to forward their works.

The Adventure company have also raised, and have ready for shipment about fifteen tons of copper and are making preparations for extending their works. Other mines in the neighborhood (of which more hereafter) are opening ground and making improvements with a view to a full development of their value. Many new tracts of land have been located with great expectations as to their richness, and the condition of the mines generally is decidedly favorable.

Aside from the mines, improvements are going forward in every part of the country; roads are being made, lands cleared, and houses built. At the mouth of the river we have already quite a village, the largest place on the lake. There is a good demand for labor and fair wages.

Railroad between Cincinnati & Baltimore.

The president of the Baltimore and Ohio railroad company, Hon. Thomas Swann, on the occasion of his being in Cincinnati, was addressed by the president of the City Council, who submitted the following inquiries:—

1st. Whether it is the purpose of the Baltimore and Ohio railroad company to make the road from Parkersburg to the Tygart's Valley Bridge under the north western charter; if not, whether there will be any prospect of its being taken up by individuals capable of constructing it?

2nd. When the Baltimore and Ohio railroad is expected to be completed to the city of Wheeling?

3d. Whether you would feel at liberty to express an opinion in relation to the differences now ex-

4th. Mr. Swann was also requested to give his views tending to illustrate the importance of such a communication as that offered by the Cincinnati and Parkersburg road, which may occur to you as important to a thorough understanding of the subject, or useful to our citizens.

In reply Mr. Swann states :—

By the provisions of the new code of Virginia, the company over which I preside might exercise the right to subscribe to the stock of the northwestern railroad; but they have not been invited to do so by the terms of the charter passed by the Legislature of Virginia, and it might well be doubted whether, with the invitation extended to them, such a step would be deemed prudent or advisable in the face of the heavy expenditures under which they are now laboring, in the prosecution of their own work to the city of Wheeling, in accordance with the provisions of the law of 1847.

At the same time, however, that I deem it proper to make this explanation, in order to account for any apparent want of interest on the part of the Baltimore and Ohio railroad company, in the objects and purposes of the Parkersburgh charter I am free to express the individual opinion which I have been led to entertain, that the northwestern road, connecting Parkersburgh with the main stem of the Baltimore and Ohio railroad at the Tygart's Valley Bridge—a distance of one hundred and twenty miles from the Ohio river—will be made by the citizens of Baltimore under the independent charter granted by the Legislature of Virginia, whenever the indications from this quarter are such as to justify action on their part, and an appeal shall be made to them for aid and co-operation by those who have it in charge.

The city of Baltimore cannot look with indifference upon the important developments now going forward west of the Ohio river. Situated at the head of one of the most prominent tributaries of the Atlantic ocean, she depends mainly upon you for the supplies, by which she is to accomplish those cherished plans of commercial greatness and prosperity, which have so long stimulated the efforts of her citizens in the prosecution of a connexion with the resources of the great west. If she should fail in these well-lounded expectations, it will be attributable, you may rest assured, to no want of energy or activity on her part. Her past history abundantly shows that she has been steadily pressing forward in the accomplishment of her favorite object.

When you ask me, then, if I entertain the opinion that the connecting link from the point of intersection with the Baltimore and Ohio railroad, to Parkersburg, will be made by the people of Baltimore, I answer emphatically in the affirmative, and I have been brought to this conclusion from the interest which I know to be felt by the people of that city, and the efforts which must be made on both sides of the Ohio river, by Cincinnati on the one hand and Baltimore on the other, to perfect the greatest line of communication which has heretofore marked the progress of internal improvement in this country.

The line of the Baltimore and Ohio railroad, as at present located, begins to diverge from its most direct route to Cincinnati and St. Louis, at a point where the northwestern road is authorized to make its junction at or near the mouth of Three Forks Creek. From the point of intersection to Parkersburg, and thence by the Cincinnati and Belpre road, to Cincinnati, is almost a straight line. The route is one of easy gradients—traversing the valleys of streams, and passing for more than two-thirds of its entire length, through a rich and productive agricultural region. Intersecting the Ohio river at a point navigable in all stages of water, the northwestern road must secure to the city of Baltimore without rivalry, the monopoly of that great thoroughfare; and pointing in a direct line to Cincinnati and St. Louis, it will form part of the grand national highway for the whole interme-

diolate country between the Atlantic and the Pacific coasts.

To Cincinnati it would be difficult to estimate the commercial advantages which must necessarily accrue from such a connexion. By no other line could trade and travel find an outlet to the seaboard within the same limit as to time, or with equal facilities in the mode and cost of transportation. The roads projected with a view to extreme northern connexions would soon become tributary to her advancement, and the streams which are now flowing onward to distant markets, would be thrown back upon her as the common point of shipment and distribution.

To illustrate this view, I would invite your attention to one or two facts.

The total distance from Baltimore to Cumberland by the finished road, is..... 179 miles.
From Cumberland to the mouth of

From Cumberland to the mouth of

Three Forks Creek..... 103 "

From Three Forks Creek to Parkers-

burgh.....	120	"
From Parkersburg to Cincinnati.....	185	"

From Parkersburg to Cincinnati..... 185

587

From which deduct saving on B. and
O. R. R., by proposed second track, 11

Total distance from Baltimore to Cincinnati 576

We have then a total distance from Baltimore to Cincinnati by the northwestern railroad, and the Cincinnati and Belpre road, of 576 miles, and the time required in the transit between these points would be little more than twenty-four hours.

The line will be shorter by upwards of one hundred miles than any other which can be brought into comparison with it, and it is susceptible of the clearest demonstration that a traveller in St. Louis or Cincinnati, destined for Philadelphia, or New York, or Boston, would find it more convenient, economical and expeditious, to approach those cities *through Baltimore*, than by any other existing or projected line of railway communication.

Then as to Philadelphia and New York:
The distance from Philadelphia to Cincinnati, by the Pennsylvania railroad to Pittsburg, and the Pennsylvania and Ohio road to Cincinnati, is.....737 miles.

The distance from Philadelphia to Cincinnati by Baltimore, Wheeling and the central Ohio railroad through Columbia, is.....739 miles.

The distance from Philadelphia to Cincinnati by the contemplated Hempfield route, is.....678 miles.

The distance from Cincinnati to New York by the Columbus and Cleveland road, and the New York and Erie road, is.....870 miles.

Showing that the city of Baltimore is nearer to Cincinnati, by the Cincinnati and Belpre road and the road from Parkersburg to Baltimore, by *one hundred and two miles*, than by the shortest of the routes above enumerated, which may be brought into comparison with it. In estimating the distance between Philadelphia and Pittsburgh, I have assumed the estimate of Gen. Packer, as referred to by him in his speech in the Pennsylvania Senate.

Ohio.

Lake Shore Railroad.—We learn that the Cleveland, Painesville and Ashtabula railroad company, (Lake Shore road), has negotiated with Messrs Winslow, Lanier & Co. a sale of \$100,000 of the city of Cleveland seven per cent. Bonds, payable in ten years, interest payable 1st May and 1st November in this city, redeemable in this city in 1861, principal and interest being guaranteed by the railroad company. These Bonds were issued by the city of Cleveland in payment of a subscription of like amount to the stock of the railroad company, which subscription was made by authority of an act of the Legislature, and the same assumed and confirmed by the votes of a large majority of the citizens. The act requires an annual tax to be levied on the entire property of the city sufficient to

pay the interest, and also provides for a sinking fund. The taxable property of the city is about \$5,000,000; population about 20,000; total debt of the city, including these bonds, about \$400,000, against which the city own valuable and productive property to an equal amount.

The railroad company have a large cash subscription to their stock, nearly sufficient to complete the road, and which is constantly being increased. The road is in a very forward state. A portion of the iron is on hand, and the track from Cleveland to the Pennsylvania state line, will be in operation during the present year.

Dayton and Western Railway.—The electors of the city of Dayton, have voted by a majority of six hundred and eighty-eight, to lend the bonds of the city for \$50,000 to the Dayton and Western railroad company, to enable them to finish their road into the city.

Georgia.

The Railroad Connection.—For the information of persons abroad, it may be well to state that the work of connecting the several railroads through this city, is now rapidly progressing. The grading, bridging, superstructure, &c., are all under contract, and will be completed in time for the growing crop. A portion of the granite for the piers of the bridge has already been delivered, and there is now a full force of workmen in the quarries. Every thing seems to be progressing finely, and we hope that by the time designated for holding the State Fair the work may be completed.—*Macon Journal.*

Railroad Convention.

A convention of all those interested in the completion of the line of railroad between the Erie railroad and the city of Baltimore, will be held at Georgetown, in Northumberland county, (Pa.) on Tuesday, the third of June. This is an important movement, and we hope to see Baltimore fully represented in this, as in all similar conventions, having this great object in view.—*Patriot.*

Illinois Canal.

The trustees of the Illinois and Michigan Canal have recently had a meeting in Chicago, at which they made the following regulations of tolls:—

A reduction of ten per cent. upon the weight of corn in the ear, to take effect the first of June.

To charge no tolls on the Calumet Feeder after the close of the present month.

A change in the mode of collecting drawbacks, making the same payable to the consignor or his order.

This reduction in the weight of corn in the ear is to relieve the owners of corn who wish to have it shelled by machinery in Chicago, from paying toll on the cob.

Pennsylvania.

Railroad from Erie to the Ohio State Line.—We learn, says the Pittsburgh Gazette, from a letter of John Galbraith, Esq., president of the Franklin Canal company, which is engaged in the construction of a railroad from the Erie to the Ohio state line, that the company has located its road, after a careful survey, between Erie and the Ohio line; that the right of way has been obtained from the land owners for seven-eighths or more of the whole distance, some paid for in cash, some in agreements to be paid for when possession is taken, others at a future day, and some in certificates of stock in the company issued and delivered; that a contract has been entered into with the Cleveland, Painesville, and Ashtabula railroad company, for a union of the

two companies on a four foot ten inch gauge, the entire distance between Cleveland and Erie, extensive and minute in its details, highly advantageous to the entire line, and mutually so to both companies, and irrevocable but upon the consent of both, based upon just and honorable principles, and contributing largely to the successful prosecution of the work, and bringing with it important aid and influence for extensive western interests. In pursuance of this contract, a mortgage has been executed by the Franklin Canal company upon its entire road between Erie and the Ohio line to secure the payment of four hundred bonds of one thousand dollars each, executed by the Franklin Canal company, payable on the first of February, 1864, with seven per cent. interest, payable semi annually, and further secured by the guarantee of the Cleveland, Painesville and Ashtabula railroad company; one hundred and thirty of these bonds have been negotiated in the purchase of iron rail and money to prosecute the work, and a negotiation is most probably completed by which a large portion of the remainder of the bonds will be transferred for money, at par, for the prosecution of the work. In December last, the entire division between the Erie and Ohio line, was put under contract at cash prices to responsible and energetic contractors, who have been prosecuting the work with as much rapidity as circumstances would enable them to do, and who have made all their arrangements for a vigorous prosecution of the entire work, and from the arrangements which have been made, Mr. Galbraith is confident that the work will be completed, and stocked and ready for active business, much within a year from this time, indeed by the first of January. Grounds for the depots have also been purchased, partly by payments in money, and partly by agreements for the payment in money hereafter.

Virginia.

The Lynchburg Virginian says that two thousand men are at present employed on the Lynchburg and Tennessee railroad, and the first sixty-four miles are expected to be opened during the present year. The second division, from Salem to Wytheville, is nearly all under contract, to be finished by the close of 1852. The third division, ending at the Tennessee line, will be put under contract in the fall, and is expected to be in operation before the end of 1853.

New York.

The Rochester American states that a meeting of directors of the Genesee Valley railroad has been held in that city. A survey has been made on each side of the river by the engineer of the company. Both routes are exceedingly easy, and no decision has yet been made between them. The road, it is stated, can be built and completed in the best manner from Rochester to Dansville, a distance of forty five miles for \$600,000. A thorough travel each day of 300 (150 each way) would ensure paying dividends on this capital. From Dansville a connection can be made with the Conhocton and Buffalo road, and with the Attica and Hornellsville road, the distance in the first case being seven and in the latter ten miles. It is expected that Rochester will carry the road as far south as Avon. To do this will require a subscription of \$300,000.

Albany and Susquehanna Railroad.—We see it stated that Mr. Delevan, of Albany, President of the above company, has taken \$40,000 of the stock of the Albany and Binghamton road, and other citizens of that place have made liberal subscriptions. The grades are reported to be favorable—not ex-

ceeding forty feet to the mile in any place, and not exceeding eight feet to the mile for a long distance. It is intended to construct this road with a six feet track, and to run the freight cars through from Albany to Dunkirk, without transshipment at Binghamton. The coal trains will also be loaded at the Liggett's Gap mines for Albany at a rate which will enable the company to deliver coal in Albany at \$2 50 per ton.

The Ohio and Mississippi Railroad.

The Cincinnati Daily Commercial, of the 5th inst., in speaking of the progress that is making with the subscriptions to the stock of the Ohio and Mississippi railroad company, says that on Saturday afternoon last, at a meeting of the directors of the company, eighty thousand dollars of stock were subscribed in one hour, by eight persons, all of them directors and officers. This is an emphatic endorsement of the enterprise, as the officers and directors are presumed to have a knowledge of the advantages and practicability of the route. Of course this subscription will be followed by others, so that we may say the thing is settled, and that the road will soon be completed to Vincennes.

One hundred thousand dollars has been subscribed by individuals in St. Louis to the above, with a prospect of a large increase. The best feeling prevails, not only at St. Louis, but through Illinois; and entire confidence is expressed in the directors of that state, and that the people along the line will subscribe liberally to carry forward the work.

Railroad from Wilmington to Newcastle.

The Wilmington papers state that the Newcastle railroad will be commenced this summer. The Philadelphia, Wilmington and Baltimore railroad company are to guarantee the stockholders six per cent on the capital, reserving to themselves the right to buy out at anything they deem proper. The road will leave P., W. and B. road about a mile from Wilmington, cross the Christiana by a new bridge, and enter Newcastle at the depot of the Frenchtown railroad. The estimated cost of the road is between \$80,000 and \$100,000.

The Ashlot railroad company held its annual meeting, for the choice of directors, at Winchester, N. H., on the 10th inst., at which time the following board of directors was chosen for the year ensuing:—John H. Fuller, Keene; John Stratton, Swanzey; A. H. Bennett, Winchester; William Haile, Hinsdale; Cephas Root, Greenfield, Mass.; Philip Ripley, Hartford, Ct.; Azariah Boody, Springfield, Mass.

At a subsequent meeting of the board, John H. Fuller, Esq., was unanimously elected President.

Canal Tolls.

The amount received for tolls on all the New York State canals during the third week in May, is.....\$121,471 11
Same period in 1850..... 117,672 45

Increase over 1850..... 3,798 66

The aggregate amount received for tolls from the commencement of navigation to the 22d of May, inclusive, is.....\$643,930 91
Same period in 1850..... 480,934 20

Increase over 1850..... 162,996 71

This shows a very handsome increase over the last year, when it is taken into consideration that the tolls this season have been reduced 25 per cent on flour and wheat, and about 33 per cent on railroad iron. Of the latter article the shipments have been immense.

Indiana.

Evansville Railroad.—The Fort Pitt brought down in a flat on Thursday the first locomotive for the Evansville and Illinois railroad. It is a large and beautiful engine of the most substantial workmanship. It weighs seventeen tons, is called Vanderburg, and was made by Messrs. Norris, Brothers, Philadelphia. It now lies at the foot of the truck road, and will soon be run up the wharf to the depot. There are a good many persons hereabouts who never saw a locomotive, to whom this will be a curiosity. It will, ere the passage of many months, be dragging along trains of cars.—*Evansville Journal.*

Sale of City Dividend Stock in the Baltimore and Ohio Railroad.

The proposals for purchasing 1400 shares of the Baltimore and Ohio railroad stock, held by the city of Baltimore, and which was received as dividends on the stock originally subscribed for by the city, were opened to-day. The following is a list of the bids. Messrs. Hack & Sons bid for the whole amount, but, as they were outbid for 360 shares by others, they only receive 1040 of the whole amount offered:

Andrew Hack & Sons.....	1400 shares at 78	11
Wm. Woodville & Son.....	100 " 78	16
" ".....	100 " 78	31
" ".....	100 " 78	58
J. H. Ehlen.....	50 " 78	25
Wm. McConky.....	50 " 78	26
Abram Cloud.....	10 " 78	37
Wm. McConky.....	25 " 78	38
" ".....	25 " 78	51

The following is a list of the unsuccessful bids:		
J. I. Donaldson.....	100 " 78	00
Francis Forman.....	30 " 78	00
Wm. Fisher.....	182 " 78	02
Wm. Ehlen.....	50 " 78	03
Wm. Woodville & Son.....	100 " 78	06
John Gill.....	15 " 78	07

—*Baltimore Patriot.*

For the American Railroad Journal. Ohio.

Columbus, Piqua and Indiana Railroad.—This road, comprising the western portion of the main trunk line, extending from Wheeling, through the heart of Ohio, to the Indiana State line, is fast gathering to itself so many elements of influence and aid, as to render its work a matter of speedy accomplishment. Its prominent position will not only ensure this, but becomes the guarantor of its future success. The interest manifested in its progress is commensurate with the scope of its influence; and no ordinary degree of solicitude and impatience will attend it, until it attains to completion.

In the establishment of that great central chain of railway, commencing at the Ohio, and extending to the Mississippi river, to accommodate that vast commerce alternating between the Atlantic seaboard and the confines of the great west, upon the lines thrown up to it by the cities of Philadelphia and Baltimore, a highway was projected which will at once meet the exigencies of the producing regions of the west, and the demands of the disbursing reservoirs of the east.

Its effect upon that stretch of territory through which it passes, in producing and invigorating many and various classes of industrial interests of field and factory, is as incalculable, as the estimate of the extent and means of support attaching to it, which an unparalleled commerce can create.

Trace upon the map of Ohio, the route of the Central Ohio, and Columbus, Piqua and Indiana roads, as it traverses, side by side with the great National road, those central and populous counties containing the chief towns and richest farming lands in the State, intersecting in its course every communication of canal and railroad ranging be-

tween the Ohio river on the south and the lake, and see how many sources of a substantial and perpetual success are made tributary to it. The Columbus and Indiana railroad company placed 22½ miles of their road, lying between the towns of St. Paris and Covington, 24 miles from the Indiana line, under contract, as to its grubbing, grading and masonry, in December last, which work since that time has been under a vigorous prosecution. The surveys on the line between St. Paris and Columbus, a distance of 56 miles, having been completed, the company have advertised this portion for letting. The contracts at the former letting were below the estimated cost of \$4,000 per mile; but the topography of the country embracing this eastern division is such—presenting, for the most part, a surface grade, with but a single high gradient of a short distance, and a remarkable freedom from curvature—as will ensure the construction of this portion at a more reduced cost. It is the intention of the company to contract for the iron, which will be of the most approved heavy rail, by the coming fall; and place a portion of the road in full operation as soon as practicable thereafter. The financial affairs of the company are in a position which will enable them to establish the grade of the entire road of 89 miles, without incurring any debt.

The stock in this road, subscribed for and paid in, by counties and townships along the line, am't to.....\$220,000
Private subscriptions.....120,000

Aggregate.....\$346,000

We look at this work, under its present efficient management, as certain to reach an early completion, at a less cost for a good road, than any other in the State; and to afford a large remuneration in benefits and revenue to those interested in its prosecution, growing out of a heavy traffic which must necessarily fall to its share. *

Progress of Railroads in Virginia.

It will not be long, says the Richmond Times, before we shall witness a great change in the interior travel of the State. Some time in the next fall the Richmond and Danville Railroad Company expect to have their road in operation as far as the junction with the South Side railroad. The latter work is actively progressing, and, we believe, is expected to be finished to Farmville by the end of the year. We are not informed how soon the company calculate upon completing it to Lynchburg. The Virginia and Tennessee railroad will be opened to Salem, it is thought, next fall. The distances from point to point have been furnished to us as follows:

Richmond to Junction.....	55.2 miles.
Junction to Farmville.....	16.8 "
Farmville to Lynchburg.....	52.8 "
Richmond to Lynchburg.....	124.8 "
Lynchburg to Salem.....	62 "
Richmond to Salem.....	196.8 "

Massachusetts.

Manchester and Lawrence Railroad.—At a meeting of the directors of this corporation at Manchester, on Wednesday, Mr. Crane tendered his resignation of the office of President, and George H. Dodge, of Hampton Falls, was chosen in his place.

Ashuelot Railroad Company.—Board of Directors:—John H. Fuller, Keene; John Stratton, Swansey; A. H. Bennett, Winchester; William Haile, Hinsdale; Cephas Root, Greenfield, Mass.; Philip Ripley, Hartford, Ct.; Azariah Boody,

Springfield, Mass. John H. Fuller, Esq., was unanimously elected President. Committee to audit and settle the accounts of directors and other agents of the Company:—Levi Chamberlain, of Keene; Henry Kingman, of Winchester; and Zebina Newell, of Keene.

Providence and Worcester Railroad.—At the annual meeting of the P. & W. railroad company, on the 19th inst., the following gentlemen were chosen directors:—Orray Taft; Alexander Duncan; John Barstow; Moses B. Ives; William Sprague; William Foster; James Y. Smith; George W. Hallett; Harvey Chase; Gideon L. Spencer; Aaron Rathbun; Paul Whittin; John W. Lincoln; Shubael Hutchins; Moses B. Lockwood.

At a subsequent meeting of the Directors Mr. Taft was chosen President; Mr. Duncan, Vice-President; J. R. Balch, Clerk and Secretary; and Isaac B. Southwick, Superintendent.

Indian Orchard Railroad.—We learn from the Springfield Republican that the Indian Orchard branch railroad was passed over by an engine for the first time on the 15th inst. This road connects with the western road about five-and-a-half miles east of Springfield, and about one and-a-half miles west of the Wilbraham depot, and is one mile and a few rods in length, and has cost about \$12,000.

Norfolk County Railroad.—At a meeting of the Norfolk County railroad company, held May 20th, 1851, W. Farnum; J. C. Hurd; Daniel Hill; James Lee, Jr; J. B. Wheelock; Horatio Bigelow; John Smith and Lyman Kinsley, were chosen Directors. At a meeting of the Directors, held same afternoon, Welcome Farnum was chosen President, and E. W. Clapp, Clerk.

Virginia.

Orange and Alexandria Railroad.—The track of the Orange and Alexandria railroad is now advancing towards its destination at the rate of a quarter of a mile a day, and has already crossed the Mount Vernon road, two miles and a half from the point of beginning. Its progress from this time will be from six to ten miles a month, reaching the vicinity of Broad Run in the month of August.

Central Railroad.—On Wednesday 7th inst., the board of directors of the Virginia Central railroad, let out the following sections of their road west of Charlottesville, which will complete the road to the Tunnel, the whole to be completed by July, 1852, and that portion of the road from here to Woodville will be completed by October next. All the contracts have been taken below the Engineer's estimate.

Winchester and Potomac Railroad.—The stockholders of the Winchester and Potomac railroad will have the pleasure of pocketing another dividend, of no less than six per cent. for the first half of the present year. This rate of twelve per cent. per annum shows a nett profit, including the \$5,000 annuity to the State, of near \$20,000. This, though much less than the rate of the dividend would indicate, is a very fair result, and reflects high credit upon the management of the road, under its worthy and indefatigable President.—*Winchester Virginian.*

New Hampshire.

Portsmouth and Concord Railroad.—At the annual meeting of this company, held on the 14th inst., the following gentlemen were elected directors for the coming year:—Alfred W. Haven; Alexander Ladd; Josiah G. Hadley; John N. Handy, of Portsmouth; Arthur Fletcher, of Concord; and Nathaniel Batchelder, of Epping. By

the report, and the statements made, we can state with confidence that the road will be in running order in November next, at the expense of \$850,000

Ohio.

Cincinnati, Wilmington and Zanesville Railroad.—The first meeting of the stockholders of this road took place at Circleville on last Thursday, the 15th instant. We give the names of the Directors chosen, and the amount of stock represented, as follows:

DIRECTORS.—W. Medill and D. Tallmadge, of Fairfield; W. Griswold, of Pickaway; D. McLean, of Fayette; F. Corwin and L. Fitzhugh, of Clinton; H. D. Lyman, of Muskingum.

AMOUNT OF STOCK SUBSCRIBED, UNCONDITIONAL.

Pickaway.....	4,443 shares.
Fairfield.....	324 "
Muskingum.....	150 "
Perry.....	12 "
Fayette.....	401 "
Clinton.....	4,713 "

AMOUNT SUBSCRIBED CONDITIONAL.

Pickaway.....	107 shares
Perry.....	38 "
Clinton.....	304 "

STOCK VOTED, BUT NOT SUBSCRIBED.

Fairfield.....	5,000 shares.
Fayette.....	2,000 "

Aggregate of stock, 17,492 shares, making the amount in money \$874,100,000.

There will be a meeting of the Directors at Circleville on Tuesday next, the 20th instant, for the purpose of organizing.

New York.

Plank Roads in New York.—The following table shows the number of Plank Roads, and the cost per mile, in the state of New York:—

	Opened.	Miles.	Cost p.m.
Great Western Albany.....	1849	11	\$2,555
Fonda and Georgia.....	1845	18	1,850
Fultonville and Johnstown.....	1849	5	5,000
Rome and Utica.....	1848	15	1,713
Utica and Burlington.....	1849	5½	2,100
Rome and Oswego.....	1847	60	1,600
do. Western.....	1849	11	1,500
do. Taberg.....	1849	9	1,300
do. Madison.....	1849	22	1,250
Salina and Central.....	1847	16	1,500
Syracuse and Manlius.....	1844	8	1,200
do. Bridgeport.....	1849	12	1,400
do. Oswego.....	1840	32	1,300
do. Liverpool.....	1849	11	1,100
do. Tully.....	1848	25	1,500
Split-Rock Head.....	—	—	1,500
Hannibal and Oswego.....	1848	11	2,000
do. do.....	1848	5	1,800

The Tolls are paid in the increase value of the land, the wear and tear of wagons, harness and horses, and in the cheapening of transportation, which is thus secured at all seasons of the year. But this is not the only thing; a farmer estimates that he saves tolls in the labor of cleaning horses. In fact, Plank Roads are invaluable.—*Albany Journal.*

Ohio.

Cincinnati, Hamilton and Dayton Railroad.—We are informed by the *Hamilton Intelligencer*, that there is an engine on the track of the Cincinnati, Hamilton and Dayton railroad, running from Hamilton south, about four and a half miles, transporting gravel and other materials for the road beyond; that the whole line from Cincinnati to Hamilton will be completed by the middle of August next.

In regard to the Hamilton, Eaton and Richmond road, the *Intelligencer* says:—

As far as Eaton the grading will be finished by August or September, the heaviest portion, near

Eaton, being very far advanced. By the time the grading is finished, the iron, for which a very favorable contract has been made, will be here. The road will be in operation before Christmas to Eaton, and probably much beyond. The whole road, from Hamilton to Richmond, is under the charge of one company—and though we have not full data farther than Eaton, we confidently expect to see the connection made with Richmond before spring.

Lake Shore Railroad.

It is stated that the difficulty in relation to the gauge of the Lake Shore road, from Buffalo to Erie, has been amicably settled. It will be built of the Ohio gauge, which is different both from the Erie and the Central line. It will be an independent road, and will afford, on fair terms, accommodation to all connecting lines. The difficulty in relation to the link of Shore Road between Erie and Pennsylvania State line has, we understand, been overcome, and the whole line from Buffalo to Cleveland will be completed as speedily as possible.

The Pacific Railroad.

A letter appeared in a Galveston paper, written by the Hon. V. E. Howard, member of Congress from Texas, accompanied by a communication from Col. Abert, of the United States Topographical Engineers, in which it is stated that a railroad from the Mississippi to the Rio Grande, crossing the head of navigation of all the principal rivers of Texas, and passing thence to the Pacific, could be made for the small cost of eighty-five millions of dollars. This is calculated at the rate of \$40,000 per mile to the Rio Grande, and \$60,000 per mile from that point of the road to the Pacific—the entire distance being about 1,700 miles.

Mr. Howard is of opinion that the project of Mr. Whitney will receive the sanction of Congress at its next session, including a southern branch through Texas. Without such branch as a condition, he says the measure cannot pass. Texas, in his estimation, can control that part of the question by consenting or refusing to give the aid of her own public domain on the terms asked by Mr. Whitney.

Railroad Barbecues.

In addition to the railroad barbecue at Dunkirk, in honor of the opening of the Erie railroad, other entertainments of the kind are coming off in various parts of the country to celebrate the opening or commencement of railroads. At a meeting recently held at Lexington, Ky., it was resolved to give a free barbecue in honor of the completion of the Louisville and Frankfort railroad, and the commencement of the Maysville and Lexington railroad, which events are expected to occur about the same time. The day is to be hereafter named. The meeting paid a deserved compliment to both the companies, for their untiring devotion to the cause of internal improvements.

The opening of the Montgomery and West Point railroad, Alabama, was recently celebrated by a grand barbecue at the latter place.

Indiana.

The city of Lafayette has, by a vote of 548 to 245, agreed to loan its credit for \$100,000 to the Lafayette and Indianapolis railroad. This sum will place in the hands of the company ample means for the speedy construction of the above work. The iron for the road has already been contracted for, and the sum voted above is to be used principally for the purchase of equipment. We are happy in being able to announce the fortunate

result of the action of the city of Lafayette. It is a justly deserved compliment to the able manner in which the directors of the company have pushed forward this important work.

Ohio.

Hillsboro' Railroad.—The following are the new board of directors of this road, viz: W. H. Trimble, D. J. Fallis, Benj. Barrere, J. Browning, Dr. Speace, John Sloane, and W. H. Baldwin.

Wm. H. Trimble, Esq., has been chosen President of the board.

The stockholders of this road have been divided in opinion in reference to forming a connection with the Cincinnati and Belpre railroad, for the purpose of making the former the trunk line of the latter to Cincinnati. The former efficient president of the Hillsboro road, W. O. Collins, Esq., to whom that company is much indebted for the progress it has made, was in favor of consolidating the two companies, which would seem to a person at a distance to have been most for the interest of all parties. The stockholders thought differently, however, and have elected a new board for the purpose, as we understand, of constructing an independent line between the Ohio river and Cincinnati. The above result, says the *Sciota Gazette*, will be to force the Belpre company to push its line through their road to Cincinnati, by the way of Blanchester and Milford. In reference to this subject, the following figures, from the plats of the chief engineer of the Belpre company will show the difference in the length of the routes to that city respectively:

Chillicothe to Greenfield.....	22-67 miles.
Greenfield to Blanchester.....	32-50 "
Blanchester to Milford.....	20-00 "
Milford to Cincinnati.....	14-00 "

Chillicothe to Cincinnati, via Greenfield.....	89-17 miles.
Chillicothe to Hillsboro.....	40-75 miles.
Hillsboro to Blanchester.....	21-10 "
Blanchester to L. M. railroad.....	16-00 "
Thence to Cincinnati.....	23-00 "

Chillicothe to Cincinnati, via Hillsboro.....	100-85 miles.
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New York and New Haven Railroad.

The old board of directors of the New York and New Haven railroad have been re-elected, viz:—Robert Schuyler, Jonathan Sturges, Morris Ketchum, A. G. Phelps, E. Townshend, of New York; H. G. Sanford, Stamford; W. P. Burrell, Bridgeport; Wm. W. Boardman, New Haven; John E. Thayer Boston.

Indiana.

Northern Railroad.—This road, which is the extension of the Michigan Southern railroad, is now all under contract. It is 115 miles long, and is estimated to cost about \$10,000 per mile. The subscriptions to the capital stock now amount to \$300,000.

Hempfield Railroad.

The county of Ohio, Virginia, has voted to subscribe \$150,000 to the Hempfield railroad.

Chas. Ellet, Jr., has been appointed Chief Engineer of the Hempfield railroad, and he is expected on the line of the road in a few weeks.

Ohio.

Cincinnati and Belpre Railroad Subscriptions.—The towns of Marietta and Harmar have voted the sum of \$150,000 to aid the above work; the former 100,000, and the latter 50,000 dollars.

LOWMOOR

AND

U. S. BEST FINCH IRON. To Iron Merchants.

JOHN FINCH & SONS, Iron Merchants, Liverpool, now are, and for more than twenty years past have been, sole Agents for the **LOWMOOR IRON COMPANY**, for the United States and Canada, for the sale of their well known Railway Tire Bars, and Axles, Piston Rods, Boiler Plates, Angle, Rivet, and all other kinds of Lowmoor Iron; also, sole Agents for the sale of the superior Staffordshire Iron stamped "FINCH CROWN" and "U. S. BEST FINCH;" and Merchants and Wholesale Dealers in all other kinds of British Iron.

We hereby inform our friends and the public that we have this day appointed Mr. WM. BAILEY LANG, of Boston, as our only representative to receive orders and to transact our general business in the United States.

For **JOHN FINCH & SONS**,
JOHN FINCH Sen.

Boston, April 11, 1851.

LOWMOOR and other Bent, Welded and Blocked **RAILWAY TIRES**, ready for use, **E. FINCH'S** Patent Dovetailed and other kinds of **WROUGHT IRON RAILWAY WHEELS**, with, or without the finished Axles, for Locomotives and for Passenger and Merchandise Cars, also Wrought Iron Railway Chairs, Railway Spikes, etc.

To the Managers of Railways, Engineers and others: Gentlemen:—We, **FINCH & WILLEY**, Engineers, Liverpool, Manufacturers of the above articles, respectfully inform you that we have this day appointed Mr. WM. BAILEY LANG, of Boston, as our sole Agent for the sale of said articles, and the transaction of our business in the United States of America, and for whom we solicit your kind attention and patronage.

For **FINCH & WILLEY**,
JOHN FINCH, Sen.

Boston, April 11, 1851.

Having accepted the above Agencies, I beg leave to solicit your orders, which shall at all times receive my prompt and careful attention. Please address all communications either to **MESSRS. JOHN FINCH & SONS** or **MESSRS. FINCH & WILLEY**, Liverpool; or to me, at my Steel Warehouse, No. 9 Liberty Square, Boston. Yours very respectfully,
WM. BAILEY LANG.

Boston, April 11, 1851.

The following are testimonials of the quality of **FINCH & WILLEY'S WROUGHT IRON RAILWAY WHEELS** from the Yorkshire and Lancashire Railway Co., one of the largest in Great Britain, and from the London and North Western Railway Co., the largest Railway Company in the world.

LONDON AND NORTH WESTERN RAILWAY,
(Northern Division.)
WAGON DEPARTMENT, ORDSALL LANE,
Manchester, January 4, 1851.

Gentlemen:—I have very great pleasure in bearing my testimony to the excellent quality of your Wrought Iron Railway Wheels.

This Company have many of them now in use on their lines, and during my experience, as their Superintendent, which is now upwards of 9 years standing, I have not known any of them to fail during that time.

I am, Gentlemen, yours, truly,
OWEN OWENS.

MESSRS. FINCH & WILLEY,
Windsor Foundry.

LANCASHIRE AND YORKSHIRE RAILWAY,
Wagon Department, Jan. 3, 1851.

Messrs. Finch & Willey,
Gentlemen: In reply to your request writing me to give my opinion of the 700 sets of Wrought Iron Wheels you furnished this company during the years 1847 and 1848, I have much pleasure in stating that we have not had a single instance of your Wheels failing in any respect, and I consider them equal if not superior to any Wheels we have on this line of railway. The Tires being **LOWMOOR** iron, 1½ inch thick, I have no doubt they will run under ordinary goods' wagons 12 years without any repairs more than the tires turning up. I am Gentlemen,
Yours, truly, **WM. EMMETT.**

NOTE.—4 Wheels and 2 Axles are one set, consequently this order contained 200 **WHEELS** and 100 **AXLES**; value over \$100,000.

Notice to Contractors.

Columbus, Piqua and Indiana Railroad.

SEALED PROPOSALS will be received at the Engineer's Office of the Columbus, Piqua and Indiana Railroad Company, at Urbana, on the 8th day of July, 1851, for the Grubbing, Grading and Masonry of that portion of the line extending from St. Paris, in Champaign county, to Columbus, a distance of fifty-six miles. Plans and specifications of the work may be seen from the 1st to the 8th of July, at the office. The Directors reserve the right to retain bids for twenty days after the 8th, before declaring the work.

The names in full of all the parties should be given in the proposals.

A. G. CONOVER, Engineer.

Piqua, May 20, 1851.

To Contractors.

OFFICE PACIFIC RAILROAD CO.,
St. Louis, Mo., May 16, 1851.

THE Graduation, Masonry, and the Laying of the Superstructure of the first Division of the Pacific Railroad, comprising about 45 miles from the city of St. Louis, westward, will be ready for contract on the 20th of June next.

Proposals will be received at the Engineer's Office, St. Louis, from the 20th to the 30th of June, where plans and specifications will be shown. The line will be ready for inspection on and after the 20th of June.

The line will be divided into sections of about one mile each, but offerers can include as many of them in one bid as may suit their convenience.

The company will not bind itself to accept the lowest offer, unless in all other respects satisfactory, but reserves the power to dispose of the work in such manner as may appear most advantageous to the interests of the company.

The Division will embrace about one million three hundred thousand (1,300,000) cubic yards of graduation, and about thirty three thousand (33,000) cubic yards of masonry.

THOMAS ALLEN, President.

JAMES P. KIRKWOOD, Chief Engineer.

Notice to Contractors.

Ohio and Pennsylvania Railroad.

PROPOSALS will be received for the Grading and Bridging of the Western portion of the Ohio and Pennsylvania Railroad, extending from Wooster, by Loudonville and Mansfield, to the Cleveland, Columbus, and Cincinnati Railroad, at Crestline near Galion, a distance of fifty-three miles.

They will be received at Wooster until the evening of Tuesday the 10th of June, and at Mansfield until the evening of Wednesday the 11th of June next, and will be addressed to the undersigned President of the Company. Plans and profiles of the work east of Loudonville will be exhibited at Wooster, and of the work west of Loudonville at Mansfield, for one week before the letting.

Further information and forms of proposals may be obtained on application to Solomon W. Roberts, Chief Engineer, or Jesse R. Straughan, Resident Engineer of the Western Division. A preference will be given to bidders who will agree to take a percentage of their pay in the stock of the Company.

WM. ROBINSON, JR., President.

Pittsburgh, May 27th, 1851.

Railroad Iron.

THE Subscribers, Agents for the Manufacturers, are prepared to contract for the delivery of Railroad iron at any port in the United States or Canada, or at a shipping port in Wales.

WAINWRIGHT & TAPPAN,
29 Central Wharf.

Boston, June 1, 1851.

North Carolina.

The meeting of the Directors of the North Carolina railroad, took place in Raleigh on the 12th inst. We learn that the location of the road was determined, its route will be as follows:—From a point near Goldsborough through Waynesborough, passing three or four miles north of Smithfield to Raleigh, which it skirts on the south side, thence

by Hillsborough, Graham, Greensborough, Lexington, Salisbury and Concord to Charlotte, a distance of about 223 miles. Contracts for the entire route will be let under the direction of the President and Chief Engineer, during the month of June.

AMERICAN RAILROAD JOURNAL.

Saturday, May 31, 1851.

Stock and Money Market.

The stock and money market present the same general aspect which we have noted for some weeks past. Money continues to be very abundant, with an increasing confidence of its continuing so through the season. We do not anticipate any reverse unfavorable to the progress of our public works, for the present year at least. Bonds of new works, though not in active demand, are disposed of in sufficient quantities to enable companies to make rapid progress.

The foreign iron market continues dull, and rails can be readily purchased at last quotations.

Though the shipment of gold continues large, this movement creates but little anxiety, as the receipts are constantly in excess of exportations.—Gold, from its abundance, is now looked upon as a legitimate article of export, just as much so as our surplus crop of breadstuffs. The fact that our own coin is now taking by the Bank of England, has an additional tendency to induce shipments.

We annex an extract from the New York letter of the *Union* in relation to the gold movement:—

The sound financial principle on which the present charter of the Bank of England was based in 1844, viz.:—That there should be no restraint upon the movement of the precious metals, but that they should come and go precisely as the operation of commerce impel them, has been admirably illustrated in the working of our independent Treasury system. According to the English Bank charter, the institution must give gold for notes, or notes for gold, according to the demands of the public. Thus standard gold bullion is by law taken by the Bank of England in exchange for its notes, at 77s. 9d. per ounce. The English coin is, however, worth 77s. 10½d. per ounce. The difference (1½d.) is the cost of delay, which averages one month at the English mint. Forty pounds Troy of standard gold is at the mint coined into 1869 sovereigns. One ounce of coin is therefore worth 77s. 10½d., and the lower price of bullion is allowed the Bank to compensate for delay. Whatever quantity of gold is imported into England, the Bank, on demand of its owners, must issue notes at the above rate. But all gold imported is not standard, and to become so it must be assayed at private assay houses, at the expense of the owner. The expense of assaying varies very much with different descriptions of gold. California bullion is very expensive, and therefore is not sent to London; but the Bank of England has passed resolutions to receive the new eagles and double eagles freshly issued from the United States Assay Office, at 7s. 3d. per ounce, or 1s. 6d. less than standard bullion per ounce, or a difference of two per cent against the American coin, which is rather more than the difference between the two standards. That is to say, 10,000 eagles will average weight as follows:—

Oz.	dwt.	£	s. d.
5,371	16	at 76s. 3d.	20,479 19 7
5,272	12	standard at 77s. 9d.	20,500 3 4

Difference	20	3	7
Cost of assay	19	14	6

The average United States coin is 1½ grains worse than the British, and the reception of the American coin by the bank at a rate equal to the cost of assay, facilitates the migration of the bullion thither. This results from the fact that the Philadelphia Mint turns out only the large pieces, for which there is no circulating demand here, and which are a favorable remittance. This matter ought to be

remedied, so that all the coin emitted by the mint should be that which is demanded by the wants of circulation. The ingress and egress of the metals might then be left with entire safety to the operations of commerce, where there are no government restrictions. There can result no evil from the movements of any trade. It is but a few years ago, that, under the operations of the corn laws of England, the prospect of the necessity of an import of corn convulsed the whole financial fabric of the British Empire. An importation of 2,000,000 bushels of wheat in 1836, precipitated the most severe revulsion of the present century. The importation of 40,866,368 bushels in 1850 was entirely unnoticed, and had no influence whatever upon financial movements. The trade in corn had become regulated, and, as such, had produced its own channels and accommodated itself to all others. It is the same with the specie movement here.

SALES OF STOCK IN NEW YORK.

	May 29. Sales.	May 22. Sales.
U. S '67 Loan.....	117½	117½
Erie R.R.....	88	89½
Harlem R.R.....	76½	74
Stonington.....	43½	42½
L.I. R.R.....	22½	21½
Norwich & Wor....	64½	64½
Del. & Hudson.....	121½	121½
Reading.....	59	56½
Morris Canal.....	16½	16½
Erie income.....	97	97½
" " Bonds.....	103	103
Canton.....	79	75
Farmers Loan.....	60	69½

SALES OF STOCKS IN BOSTON.

	May 28.	May 21.
Old Colony Railroad.....	67	68½
Boston and Maine R.R.....	106	105½
Eastern Railroad.....	102	102½
Fitchburg Railroad.....	113	113
Michigan Central Railroad.....	103	104
Northern Railroad.....	70½	71½
Vermont Central Railroad.....	37	36½
Vermont and Mass. R.R.....	29½	30½
Western Railroad.....	106	103½
Ogdensburg Railroad.....	39½	40½
Rutland Railroad.....	57½	57½
Boston and Worcester Railroad.....	106	106½
Rutland Railroad Bonds.....	97	97
Ogdensburg Railroad Bonds.....	97½	97½
Vermont Central R.R. Bonds.....	91½	91½
Boston and Providence R.R.....	91	90
Philadelphia, Wilm'gton & Balt.....	29½	29½
Concord R.R.....	53½	54

New Spring for Railroads and Carriages.

We have recently had an opportunity of examining a new kind of a spring designed for railroad cars, and for all cases where springs are used, which is formed of a combination of wood and steel. The manner of making the spring is simply this. A steel plate is riveted on to a piece of wood, say white oak. The part to which the steel plate is attached is straight, while the opposite side is slightly curving; the ends being, we will say, three-fourths of an inch, and the centre two inches. The rivets are placed within about two inches of each other. To give the *set* to the spring, notches are sawed in the wood nearly to the steel plate. Into these are inserted small flat pieces of iron, which gives the spring the proper curve. The ends of the steel plate are turned over, and riveted through, so as to prevent the ends of the spring extending themselves. The spring is a semi-eclipse, and when loaded tends to a straight line, instead of curving. Its elasticity is obtained from the elasticity of the wood and metal combined.

The model which we examined is 3 feet long and 2 inches wide, 2½ inches thick in the centre, and ½ at the end, with a regular curvature in the upper side. It has been subjected to the severest test for some months past, having been under a

pressure of 3500 lbs. for most of the time. It appears to retain its elasticity perfectly, and possesses great power of resistance, while it is remarkably sensitive under the slightest pressure. The pieces of iron inserted to give the *set* being of uniform thickness, only the lower parts of them are brought into contact with the wood when the spring is free. As soon as the load tends to bring it into a straight line, a greater extent of surface of the metal slips, or pieces, is brought into contact with the wood, and thus the resistance is increased just in proportion to the load imposed.

We have thus given a brief account of this invention, and the manner of its operation. As we said before, it appears to make a very strong and at the same time a very elastic spring. In this, as in all other matters, the only proper test is experience in their use. This test is we learn soon to be made on railroad cars and carriages, for the purpose of presenting to the public *satisfactory* evidence of its value.

This spring was invented by Mr. Levi Bissell, of this city, and is patented under the name of the Excelsior Spring. We learn that extensive arrangements have been made to manufacture the article for the trade, on a large scale.

Railroad Lettings.

Our readers will find in our paper of to-day, Advertisements of two important lettings on Western railroads, which are well worth the attention of contractors. The Pacific railroad is a work of immense magnitude, and as the company possess ample means, contractors cannot do better than to turn their attention to that quarter.

Memphis and Charleston Railroad.

The second annual election of directors for the Memphis and Charleston railroad took place on Monday, the 5th inst., at Huntsville, Holly Springs and Memphis. The following gentlemen were chosen directors:

J. C. Jones,	R. C. Brinkley,
J. J. Donegan,	G. C. Byrne,
J. C. Goodloc,	R. M. Patton,
S. P. Walker,	C. L. Thomas,
Samuel Elliot,	Robt. Fearn.

Delaware and Raritan Canal.

The Delaware and Raritan Canal company, board, at their recent annual meeting at Princeton, elected Robert F. Stockton, President; John R. Thompson, Secretary; and Richard Stockton, Treasurer. This Canal is the channel through which our Pennsylvania coal tonnage seeks the English markets.

Quebec and Halifax Railroad.

The railroad movements in the British Provinces possess at all times a good degree of interest to the people of the States, not only from the magnitude of their proposed works, and the relations they sustain to our own roads, but from the indications which they are instrumental of furnishing, of the policy and views of the Home Government, in reference to its American possessions. We have already discussed the provincial projects pretty fully in former numbers, but as the present is a very interesting crisis with them, we take the liberty of referring to them once more.

The great question now before the Provinces is that of the acceptance of the offer of the British Government, to guarantee the debentures of the three Provinces of Canada, New Brunswick and Nova Scotia, to be issued to build a road from Halifax to Quebec by way of the Gulf of St. Law-

rence, a distance of about 650 miles. As we stated in a former number, this offer on the part of the British Government, is in answer to the solicitations of Mr. Howe, the agent of Nova Scotia, who was sent to England to solicit aid for that portion of the European and North American railroad lying within her territory. The object of that road was to connect Halifax with the railroads of the United States by a road via St. John, the principal city of N. Brunswick. The result of Mr. Howe's mission was a complete failure, as far as its primary object was concerned. It remains now to be seen whether the substitute offered will be accepted; will the three Provinces agree to build the Halifax and Quebec railroad, if the Home Government will give them a credit for this purpose?

We shall give no reasonable cause of offence by saying that the British North American Provinces have not distinguished themselves by any remarkable enterprise, or success in the prosecution of works of internal improvement. A conviction of the importance of railroads as the instruments and agents in the production of wealth, has not taken that strong hold upon their people, as upon those of the States. When the construction of these works was first agitated, their projectors, instead of being governed in the selection of routes, and mode of construction, by considerations of pecuniary profit alone, which is the only safe guide in all similar enterprises, acted upon the traditional maxims imported across the water. Railroads with them must be a *national* affair, having reference to the promotion of a more firm bond of union between the different Provinces. Such were the views of the early projectors of the Halifax and Quebec railroad. This mode of reasoning gave it its circuitous route by way of the Gulf of St. Lawrence, to keep its line wholly within British territory, and far removed from that of the United States, so as to serve as a line of communication in time of war. It was these absurd notions which defeated the scheme when first started. As the line occupied neither the route of convenience for commerce or travel, of course it could not command money to carry out schemes, which did not lie within the scope or object of the business man. Capital always seeks a profitable investment. We were very glad when the scheme was abandoned, and we hailed as a good omen the manner in which the European and North American railroad was seized hold of, as an indication that rational views on the subject of internal improvement, growing out of a conviction of their own wants, was fast making progress among our eastern and northern neighbors.

But these flattering indications have been suddenly dissipated. Mr. Howe returned from Europe with a promise on the part of the British Government, to provide means, on the credit of the Provinces, for building the Halifax and Quebec railroad, and the Province of Nova Scotia has expressed herself warmly in favor of this line. The Province of New Brunswick, which would be but little benefited by the Quebec line, has declared herself against it. In Canada, public opinion seems as yet to be in abeyance. We are inclined to believe, however, that all three of the Provinces will finally concur in the measure, and that the road will be commenced. The very magnitude of the project, and the vast amount of money to be expended, will secure the sanction of the proper authorities. There will be a sufficient number in each of the governments, whom the prospect of

having the disbursement of the money will seduce from their allegiance to duty and common sense.—As we said before, the magnitude of the measure, and the vast sums of money to be expended, will be causes sufficiently powerful to secure the assent of the Provincial governments to the scheme.

In all that has been urged in favor of the St. Lawrence line, we are struck with the total want of anything like satisfactory evidence to justify its construction. Its friends assume the point that remains to be proved—that the road will *pay* if built; that the only condition wanting to *success*, is the money with which to build it. Now when we come to the *expediency* of constructing this road, we take it that we should be governed by the same considerations that should be our guide in all similar cases. Does the scheme offer a profitable investment for capital? Will it pay? This, in railroads, is the only safe guide. Any other would lead to certain ruin. Railroads cost enormous sums, both to build and operate them; and if we consult our fancies merely, both ourselves and our schemes would soon go to destruction. Just in proportion as political or private considerations interfere, and substitute their claims for the wants of trade and commerce, then are we certainly going astray. In building ships, we adapt them to the convenience and wants of the trade. Political considerations do not give the model of the hull, does not determine their tonnage, nor the direction of their voyages. Why not? Because all these matters do not come within the scope of political speculations. Just in proportion as we adapt our agents to the objects which we wish to accomplish, we succeed: and the extent of our failure is measured by the want of such adaptation. When we are wrong, the abundance of money is our greatest misfortune.—It may involve us inextricably. It is like a strong breeze upon a ship sailing on a wrong tack. The history of railroads in the United States is pregnant with illustrations of the truth of what we have said. When the railroad movement commenced in this country, the grandest schemes were projected in the Western States. Each State laid out its system on *paper*, and immediately commenced the construction of the various lines of which it was composed. The present debts of these States show that they did not lack abundance of means. Yet they all fell to the ground, after millions had been expended. Take Illinois for example. That State wasted some \$15,000,000 upon her internal improvement projects. Every railroad she commenced was abandoned, and dense forests now cover hundreds of miles of graded lines. What was the cause of this failure? for we now find Illinois to be one of our most active and successful States in the construction of railroads. It was simply this. In the one case, her schemes were projected by politicians, who had no other guide before them but a map of the State and their own selfish views. The lines of the projected roads were entirely arbitrary, without reference to the routes of trade or travel. Another cause was the ease with which the money for these works was obtained, and the feeling on the part of those disbursing it, that they were spending some other person's money, not their own. They of course were comparatively indifferent whether it was saved or wasted. Loss would not impoverish them. They had therefore every inducement to enrich themselves by plundering the State—especially when they saw that the whole must be wasted, if expended upon lines under the existing polity. The system first adopted, antici-

pated the wants of her people, and of course was not adopted to meet them. Some fifteen years have since elapsed, and the people of Illinois are now finding out what they do need, and the lines now projected merely express the nature and direction of this want. The people now choose to build their own roads, for the reason, that they promise to be very profitable, and more than all, because they are determined to see them take a proper direction, and to have them economically built and well managed. We shall hear of no more disasters in that State, so long as her people follow the rules of common sense which lie at the foundation of success in all kinds of business.

How is it with the Provinces? They now propose to build a line that never will be needed, nor used for business travel, for the reason only that they can easily get the money for it. If the proposed line should be economically built the money expended would be wasted, because the road would never pay. But money never is, nor never will be well expended, which does not belong to the person making, or superintending the expenditure. But waiving the discussion of this question, let us see what will be the sources of income of the above line. For freight, its way business must be very slight, because for its whole distance it will run parallel to, and in the immediate vicinity of tide water, with which railroads never can compete in the carriage of freight. Its way travel must be slight, for the reason that in the lower Provinces there is no town at which centre the trade and business of the whole community; these are divided among a great many places, and such, from the character of the country, must always be the case. For the purpose of forwarding freight to market, the Provinces do not need a railroad; for this they already possess facilities superior to any other portion of the continent. Almost every farm in New Brunswick and Nova Scotia is washed by tide water, its great markets are, and always must be, the cities of the United States, to which at all times they enjoy the easiest access.

How is it with through travel and freight? Produce of the Canadas, designed for exportation, is nearly all raised above Montreal, that town by the above line, is over eight hundred miles from Halifax. It would cost, therefore, by the lowest safe computation, \$16 per ton, to send freight from the former to the latter city, more than double the cost of freight between the same points by way of New York. The same rule would apply, though to a less extent, to travel. The truth is, that no intelligent man could for an instant be made to believe that the Halifax and Quebec railroad would carry a pound of freight between the St. Lawrence and the Atlantic, or a single passenger, on the ground that the road offered the cheapest and most economical route. It requires no argument to prove this. All that is necessary to look at is the length of line, and cost of transportation by railroad. It must be borne in mind too, that a great part of the line of the above road will pass through a most sterile country, and nearly one half of it through a dense, and an almost entirely uninhabitable wilderness.

We have thus stated in brief some objections to building the above road, we have neither time nor room to enlarge upon them, nor is it necessary we should, we hope they will be carefully considered by our eastern friends, and that their good sense will not be completely overturned by the prospect of getting money for a worthless project.

Ohio.

Cincinnati, Wilmington and Zanesville Railroad.

—The board of directors of the Cincinnati, Wilmington and Zanesville railroad company, held the first meeting at Circleville on the 22nd instant. The board was organized by the election of Franklin Corwin, of Clinton county, as President; Mr. Rodabaugh, of Lancaster, Treasurer; and Mr. Triplitt, of Circleville, Secretary. The road is to be surveyed immediately.

Alabama and Tennessee Railroad.

In speaking of the progress of this road the Selma Reporter says: At the recent letting of this railroad through the counties of Talladega, Benton and Cherokee, the best spirit prevailed among the stockholders, and the greater part of the grading of the northern division, comprised between the Coosa river, at the dividing line between the counties of Talladega and Shelby, and the town of Gadsden, was proposed for by responsible stockholders. All the heavy work was taken, and but few sections of a light character now remain to be proposed for. The work is to be commenced in the month of August and September, and is to be completed in two years. The contracts were principally taken by companies of stockholders, who design employing their own laboring forces, and who propose to receive one half and one third of the amounts of their contracts in stock of the company.

The contractors are progressing rapidly with their work on the southern division. The grading of upwards of twenty miles of this division is completed, and a large force is engaged on the remainder of the 56 miles between Selma and Montevallo—a portion of the iron rails purchased for this part of the road has been shipped, and arrangements have been made to lay the rails immediately on their arrival.

The only remaining part of the Alabama and Tennessee railroad not under way at this time, within the exception of a few sections on the northern division, as before stated, is that portion of the railroad between Montevallo and the Coosa river, comprising a distance of about 31 miles. The work on this section is generally light, and may be soon accomplished. We understand that it is the intention of the directory, to place it under contract the ensuing fall.

From this statement of the present condition of our great enterprise, it will be perceived that the prospects of its completion in three years, or at the farthest four years, are very flattering. For this agreeable state of affairs, all parties engaged in the work, and particularly the stockholders, who have stepped forward and sustained the energetic action of the directory with promptitude and fidelity, deserve great praise.

Railroad Iron.

2000 TONS T RAILS, of desirable pattern, arrived, and to arrive, for sale by
RAYMOND & FULLERTON,
6t21 45 Cliff st.

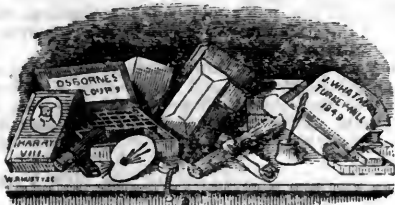
Mohawk Valley Railroad.

THE BOOKS OF SUBSCRIPTION TO THE Capital Stock of this Railroad will be opened at the Chemical Bank, and at the office of Arthur N. Gifford, No. 60 Merchants' Exchange, on the 13th instant. The Report of the Survey and Estimates may be obtained, and a Map and Profiles of the route seen, at the latter place.

May 17th, 1851.

A. C. FLAGG,
JAMES J. ROSEVELT,
A. MANN, JR.,
Committee.

Hufty's Engineers, Architects and Draftsmen's STATIONERY EMPORIUM.



WHATMAN'S Turkey Mill Drawing paper, Tracing paper, Plan and Profile, Protractors, Drawing Pins, Faber's, Jackson's and other makers' Pencils; Field, Level, and Memorandum Books of various patterns; Mathematical Instruments, Tape-lines, Mouth Glue, Cross Section paper, Triangles, Sabel Brushes, Gum Bands, Maiden Gum, Red Tape, Ink, Inkstands and Sand, Water Colors, Pallets, Patent Binders for letters, Portfolios, etc., together with a general assortment of Stationery and Blank Books. All goods packed with care, and forwarded to any part of the United States.

JOSEPH HUFTY,
Successor to H. L. Lipman,
139 Chestnut st., Philadelphia.

May 15, 1851.

1851. 1851.

PEOPLE'S OSWEGO LINE, New York and Oswego,

ARE prepared for the Transportation of Merchandise and Produce to and from New York, and ports on the Western Lakes, by the Lake Ontario and Welland Canal route. Special attention given to Railroad Iron.

PROPRIETORS.
LEWIS & BEARDSLEY, Oswego.
JAMES W. CAMPBELL, New York.

AGENTS.
James W. Campbell, 111 Broad st., New York.
W. H. Clark, 60 Quay st., Albany.
Lewis & Beardsley, Oswego.
Smith & Hunt, Toledo, Ohio.
G. W. Blissell, Detroit, Mich.
C. Walker & Son, Chicago, Ill.
H. H. Hurlbut, Western States.
May 15, 1851.

Notice to Contractors.

Pennsylvania Railroad.

PROPOSALS will be received from the 9th to the 12th of June next, at Johnstown and Summit, for the Grading and Masonry of that part of the Mountain Division of the Pennsylvania Railroad between Altona, in Blair county, and Pringle's Point, a few miles below Jefferson, in Cambria—a distance of 25 miles.

The road within this distance will cross the Allegheny mountains, encountering some of the heaviest grading offered in this country. In addition to a number of extensive cuttings, embankments and culverts, there will be one tunnel 1200 yards in length at the summit of the mountain, and another of 200 yards through Pringle's Point.

Terms cash, monthly. For further information apply to EDWARD MILLER, Esq., Associate Engineer, Blairsville, Indiana Co., or to STRICKLAND KNEASS, P. A. Engineer, Altona, Blair county.

J. EDGAR THOMSON,
Chief Engineer.

Engineer Department P. R. R. Co.,
Philadelphia, May 1st, 1851.

SUPERIOR BLACK WRITING & COPYING INK.

Jones' Empire Ink.

87 Nassau st., Sun Building, New York city.

Net prices to the trade—
Quarts, per dozen, \$1 50
Pints, " 1 00
8 ounces, " 0 62 1/2
6 oz. per dozen, \$0 50
4 " " 0 37 1/2
2 " " 0 25

On draught per Gallon, 20 cents.

This is the best Ink manufactured. It flows freely, is a good copying ink, and will not mould, corrode, precipitate or decay. Orders for export, or home consumption, carefully and promptly attended to by

214 THEODORE LENT.

NOTICE.

THE Subscribers hereby give notice that they sold out their interest in the New York Iron Bridge Company on the 29th of April last to M. M. WHITE, and that their interest in the Company ceased on that date.

W. RIDER & BROTHERS,
ELIHU TOWNSEND.

The business of the New York Iron Bridge Co. will be continued as formerly by the Subscriber, who respectfully solicits orders for bridges as heretofore.

M. M. WHITE, Agent
New York Iron Bridge Company,
39 Wall st., Janney Court.
New York, May 13th, 1851. 3t

Spikes, Spikes, Spikes.

ANY person wishing a simple and effective Spike Machine, or a number of them, may be supplied by addressing J. W. FLACK, Troy, N. Y. or, MOORE HARDAWAY, Richmond, Va. March 6, 1850.

To Railroad Companies. SALISBURY REFINED IRON.

THE Undersigned, having enlarged and perfected this Works, is now prepared to furnish Locomotive Tire of a better quality than have heretofore been used. Railroad Companies who may wish it, will be furnished with a set for trial, not to be paid for until they are satisfied of their superior quality over any other. Also made at short notice, and in the best manner, Locomotive Cranks, Engine and Car Axles, and other Locomotive Forgings.

All work ordered from me will be made of Salisbury Iron, and done in the best manner.

Address HORATIO AMES,
Falls Village, Conn.

May 1, 1851.

Lovegrove's Patent Cast Iron Water and Gas Pipes.

THE Subscriber, the Inventor and Patentee of the Centrifugal mode of giving form to metallic substances while in a molten state, is preparing to make Cast Iron Water and Gas Pipes, of any dimensions, at prices much lower than they can be made in the old manner, and the pipes warranted to stand a pressure of three hundred pounds to the square inch, and to be soft enough to drill. Steam Engines and all kinds of machinery. Cast Iron Doors and Frames, and Mill Castings of every description, made to order.

THOMAS J. LOVEGROVE,
Machinist and Founder,
West Falls Avenue, below Pratt st., Baltimore.

To Railroad Companies, etc.



The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

I also invite attention to an improved PATENT SPRING LOCK, for SLIDING Doors to Freight and Baggage Cars, now in use upon the Pennsylvania Central, Greenville and Columbia, S.C., Reading, Pa., and other Railroads.

Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH,
46 South 8th St. Philadelphia.

May 9, 1851.

To Engineers and Ship Builders.

THE Advertiser is desirous of a situation in a respectable concern, he has acquired a practical knowledge of his business in the establishment of R. Napier, Esq., Glasgow, has since for several years had the management of the Works of an extensive Steam Packet Co., for whom he designed and built some Iron Screw Ships, whose capabilities and performances give the highest satisfaction. While acquainted with all the most approved modes of construction of marine engines, he is prepared to submit original designs.—In modelling and draughting he has had much and successful experience. Can produce the highest testimonials as to character and abilities from the first engineer on the Clyde.

Address ENGINEER, box 2315 lower Postoffice.

Boston Locomotive Works, —Late Hinkley & Drury— No. 380 Harrison Avenue, BOSTON.

Locomotive and Stationary Steam Engines; Boilers; Iron, Brass, Copper and Composition Castings; Coppersmith's Work, and all kinds of Railroad Machinery furnished at short notice.

ALSO



Van Kuran's Improved Rail- Road Wheel,

Patented May 1, 1849. Manufactured under the personal superintendence of the Patentee, as above.

Orders for any quantity of wheels executed with dispatch, and wheels and axles fitted in the very best manner and at the lowest rates. Address

DANIEL F. CHILD, Treasurer, Boston.



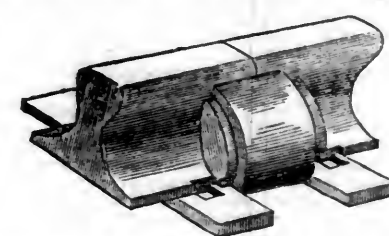
Providence Tool Co.,

MANUFACTURERS OF
Plane Irons, Tooth Irons, Soft Moulding and Rabbet Irons, Cornice Irons, Plow Bits, and Planing Machine Knives:

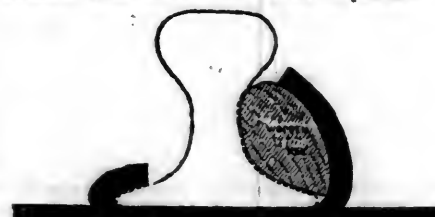
NUTS, WASHERS AND BOLTS.

—ALSO—
PLATE HINGES AND PICK AXES.
They are prepared to execute orders for all descriptions of Cold Punching and Job Work.
WM. FIELD, Agent. RUFUS WATERMAN, Treas.
PROVIDENCE, R. I.

Railroad Iron, SPIKES, AND WROUGHT IRON CHAIRS.



THE Undersigned, Agent for Manufacturers, is authorized to contract for Welsh Railroad Iron of the best quality, and deliverable at any port on favorable terms, also Spikes and Wrought Iron Chairs, made from the best iron, and of any pattern and weight. The new Wrought Iron Chair, with the introduction of a "Key," as per the annexed plan, will be found a great improvement on the old pattern.



Boiler Plates of superior quality, perfect regularity in the squaring and thickness, and made with great care.

Samples can be seen at our office, No. 20 Beaver st. CHARLES ILLIUS.

To Contractors.

Engineer's Office Central Ohio R. R. }
Zanesville, May 7, 1851. }

SEALED Proposals will be received at this office until the 1st of June next, for laying the Track upon the whole line, including sidings—about 63 miles—west of Zanesville.

Plans and Specifications will be exhibited after the 20th day of May.

By order of the Board.

ROBERT MAC LEOD,
3t Chief Engineer.

CHILLED TIRES FOR LOCOMOTIVE ENGINES. To Railroad Companies.

THE Undersigned, Assignee of Letters Patent, respectfully invites the attention of Railroad Companies to the **CHILLED TIRES FOR LOCOMOTIVE ENGINES**, which he offers for sale.

These Tires were first introduced by Messrs. Perkins & McMahon, upon the Baltimore and Ohio Railroad, in 1843, where, after a long and severe trial, they were generally adopted, on both passenger and freight engines, and now have entirely superseded Wrought Tires on that road, on which are many engines of the heaviest class, which ascend grades of *eighty-five feet per mile*, taking with them one hundred and twelve tons, exclusive of cars. This performance shows in some measure the adhesive character and strength of the Tire.

During a service of seven years, these Tires have very much exceeded, in durability those of wrought iron, while their first cost, and expense of repairs, is more than *fifty per cent. less*. They also retain more equally their diameter and proper form of tread, which is a point of much value in engines with coupled wheels.

It is believed these Tires are peculiarly well adapted to freight engines, as the objection to coupling the wheels of locomotives is the *increased friction*, arising principally from the *unequal wear* of wrought tires; and hence most of the freight engines where wrought tires are used, have but four wheels as drivers, with frequently a weight of *sixteen tons*, or more, upon them, which may be of no disadvantage to the engine, although its effect upon the track is like a car with *sixteen tons* upon four wheels, and it is presumed no one would permit cars so heavily loaded to pass over their road.

As Chilled Tires wear more *uniformly* than those of wrought iron, there can be no doubt when these are used, that the weight necessary for adhesion may be distributed upon more driving wheels, without any material disadvantage to the engine, and thus placing less weight upon a single point, would relieve the track, and secure, to a great extent, the object sought to be gained by the plan so frequently proposed, of using light engines, which would bring with it the necessity of increasing the number of trains and train hands.

The complete success of Chilled Tires upon the Baltimore and Ohio road, for the last seven years, and upon other roads for a more subsequent period, is a strong proof of their *practical character*, while their *cheapness and durability*, it is believed, recommend their trial by every railroad company.

It may be thought by some that the whole wheel for strength, would be preferable to wheels with tires, but experience shows the latter to be a much stronger and more durable wheel, on account of its freedom from tension, which is never the case with a whole wheel. That TENSION has much to do with the breaking of wheels and tires, may be inferred from the fact, that a set of chilled tires, five feet diameter, on a first class passenger engine, have been in constant service during the past winter, on one of our Eastern roads, and have withstood the severities of the season, where whole wheels and wrought tires have broken. And it may be proper to remark, that wherever chilled tires have been introduced, whole wheels as drivers are invariably abandoned, they being far more expensive to maintain, as there is a *crank* to form as often as a wheel is renewed, which is *not* the case on the renewal of a tire.

The peculiar manner of fastening these tires to the wheel without shrink, applies equally well to wrought tires, and is of much importance where they are used, as it secures them against the TENSION or STRAIN they receive by the present plan of shrinking them to the wheels, which undoubtedly is the cause of wrought tires breaking so frequently, particularly in cold weather, which produces a greater contraction of the tire, thereby increasing the strain. This plan makes the tire perfectly secure upon the wheel, and is attended with less expense, as will be seen by the following testimonials, which are respectfully submitted.

Lowell, March, 1851.

L. B. TYNG.

TESTIMONIALS.

Baltimore and Ohio R. R. Office, }
Jan. 2, 1850. }

Mr. L. B. TYNG, Lowell, Mass.—Sir: Your favor of the 26th ult., is before me, asking my opinion of the Chilled Cast Iron Tires, of Messrs. Perkins & McMahon, patentees. I do not hesitate to speak favorably of them, nor to say that I would give them the preference over wrought iron tires, whenever the adhesive tenacity of the latter to the rails is not all called for, there being somewhat less adhesion to the chilled wheel.

This can, however, scarcely be called a practical point, as nearly all of the Passenger Engines now in use have a surplus of adhesion, and nearly all Freight Engines being provided with the sand box, for emergencies arising from sharp curves, heavy grades or wet rails.

The Chilled Tire is very much cheaper in first cost, will last longer, and offers a facility for putting it on the wheel, rendering comparison with the wrought iron tire an absurdity—it not being necessary even to take the wheels from the machine for the purpose. Many of them are in successful use on this road, and I consider its curves and other peculiarities the most severe of all existing tests. One set of five feet in diameter, has run 50,000 miles under one of our Passenger Engines, and will to all appearance, run as many more; and, in the mean time, they have not cost a dollar for repairs or adjustment.

It may be suggested that they might not stand a Northern frost. This is possible; but I believe otherwise, as the weather here is occasionally as severe as in Boston, and if I had charge of a northern road, after the experience I have had here, I would make their trial one of my very first acts.

Respectfully your Ob't Serv't,
WM. PARKER, General Supt., etc.

January 29, 1851.

Philadelphia, Wilm. and Balt. R. R. Office, }
Wilmington, Del. }

Mr. L. B. TYNG—Sir: We have used the solid Cast Iron Chilled Wheel, and Cast Iron Chilled Tire, for engine drivers, on this road since 1842. When wrought iron tires under new engines, purchased from time to time, wear out, I invariably replace them with the Chilled Tire of Messrs. Perkins & McMahon, patentees.

These Tires will last, on the average, three times as long as wrought tires; seldom requiring renewals under three years, and lasting much longer usually. We have a set which has been in constant use for five years, and still in fair order. The adhesion supplied by the Chilled Tires, I find in practice with engines of the same model and weight, to be equal to that given by wrought tires. This is certainly a fact, though not an acknowledged one, in general. Those who think otherwise, will in time change their opinions.

I am of opinion that the Chilled Tire is as safe as the wrought, at any temperature. In eight years use, we have broken but one tire out of more than fifty, and that by a violent concussion on the occasion of a run off.

The use of the Chilled Tire, and the ease and rapidity with which it may be replaced, would certainly enable a road to do the same amount of work with fewer engines—since but little time would be lost in laying up an engine for new tires, or for turning down old ones, as must be done when wrought tires are used.

I am yours respectfully,

I. R. TRIMBLE,
Engineer and General Supt.

Office Eastern R. R., Salem, Dec. 23, 1850.

L. B. TYNG, Esq.—Sir: Your favor of Nov. 30th, inquiring respecting the Chilled Cast Iron Tires, came duly to hand, and in answer, I will say, that this road have in use one set cast and fitted to the wheel, by Messrs. Bush & Lobdell, upon a twenty ton first class Passenger Engine, which has run in eight months, 26,639 miles, and to all appearance, are about as good as when they first commenced running.

In regard to the comparative expense of the cast or wrought iron tires, I do not hesitate to say that the difference would be vastly in favor of the former.

I have ordered a second set, and they will be put on to the engine immediately. Respectfully,

JOHN KINSMAN, Supt. E. R. R.

Chilled Tires for the various sized wheels, or wheels with either chilled or wrought tires fitted up upon this plan, may be had of the following persons:

ALDRICH, TYNG & Co, Lowell, Mass.
SMITH & PERKINS, Alexandria, Va.

Rights for using Tires upon the above plan, may be had on reasonable terms, of L. B. TYNG, Lowell, and at N. York.

Railroad Iron.

THE UNDERSIGNED, HAVING made arrangements abroad, are prepared to contract for the delivery of Foreign rails, of approved brands upon the most favorable terms.

They will also make contracts for American rails, made at their Trenton works, from Andover Iron, in whole or in part, as may be agreed upon.

They are prepared to furnish Telegraph, Spring and Market Wire; Braziers and Wire Rods; Rivets and Merchant Bars to order, all made exclusively from Andover Iron. The attention of parties who require iron of the very best quality for special purposes, is respectfully invited.

COOPER & HEWITT,
17 Burling Slip, New York.

February 15, 1850.

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.

August, 16, 1849.

6m33

Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron.

THOMAS B. SANDS & CO.,
73 New street,
New York.

February 3, 1849.

Glendon Refined Iron.

Round Iron, Band Iron, Hoop Iron,
Square " Flat " Scroll "
Axles, Locomotive Tyres,
Manufactured at the Glendon Mills, East Boston, for
sale by GEORGE GARDNER & CO.,
5 Liberty Square, Boston, Mass.

Sept. 15, 1849.

3m37

ENGINEERS.**Atkinson, T. C.,**

Mining and Civil Engineer,
Orange and Alexandria Railroad, Alexandria, Va.

Clement, Wm. H.,

Little Miami Railroad, Cincinnati, Ohio.

Cozzens, W. H.,

Engineer and Surveyor, St. Louis, Mo.

Alfred W. Craven,

Chief Engineer Croton Aqueduct, New York.

Floyd-Jones, Charles,

Alton and Sangamon Railroad, Alton, Illinois.

Gay, Edward F.,

Columbia and Philadelphia Railroad, Philadelphia Pa.

Gilbert, Wm. B.,

Rutland and Burlington Railroad, Rutland, Vt.

Gzowski, Mr.,

St. Lawrence & Atlantic Railroad, Montreal, Canada.

Grant, James H.,

Nashville and Chattanooga R. R., Nashville, Tenn.

S. W. Hill,

Mining Engineer and Surveyor, Eagle River,
Lake Superior.

Holcomb, F. P.

Southwestern Railroad, Macon, Ga.

Latrobe, B. H.,

Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,

Buffalo and Conhocton Valley Railroad, Bath, N. Y.

Morris, Elwood,

Schuylkill Navigation, Schuylkill Haven, Pa.

Nott, Samuel,

Lawrence and Manchester Railroad, Boston.

Osborne, Richard B.,

Civil Engineer, Philadelphia.

Prichard, M. B.,
East Tennessee and Georgia R. R., Cleveland, Tenn.

W. Milnor Roberts,
Bellefontaine and Indiana Railroad, Marion, Ohio.

Roberts, Solomon W.,
Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Sanford, C. O.,
South Side Railroad, Virginia.

Schlatter, Charles L.,
Northern Railroad (Ogdensburg), Malone, N. Y.

Steele, J. Dutton,
Pottstown, Pa.

Trautwine, John C.,
Civil Engineer and Architect, Philadelphia.

Tinkham, A. W.,
United States Fort, Bucksport, Me.

Troost, Lewis,
Alabama and Tennessee Railroad, Selma, Ala.

Whipple, S.,
Civil Engineer and Bridge Builder, Utica, N. Y.

HOTELS.

**DAVIS'S
ALHAMBRA HALL,**
No. 136 Pratt street,
BALTIMORE.

Exchange Hotel,
Adjoining Eastern Railroad Depot,
BUFFALO, N. Y.
BY.....**FISK & SPERRY,**
Late of Delevan House, Albany.

MANSSION,
Corner of Maine and Exchange Streets,
P. DORSHIMER. BUFFALO.

Barnum's City Hotel,
MONUMENT SQUARE, BALTIMORE.
This Extensive Establishment, erected expressly
for a Hotel, with every regard to comfort and convenience, is situated in the centre and most fashionable
part of the city, and but a few minutes' walk from the
Railroad Depots and Steamboat Landings.
The House has lately undergone a thorough repair,
embracing many valuable improvements, and will accommodate 250 Guests. **BARNUM & CO.**

American Hotel,
Pratt street, opposite the Railroad Depot,
BALTIMORE.
HENRY M. SMITH.....Proprietor.
Late of the Exchange & St. Charles Hotels, Pittsburg

Washington Hotel,
BY **JOHN GILMAN,**
\$1 Per Day.
No. 206 Pratt street, (near the Depot),
BALTIMORE.

**GUY'S
United States Hotel,**
(Opposite Pratt street Railroad Depot),
BALTIMORE.
JOHN GUY. **WILLIAM GUY.**

DUNLAP'S HOTEL,
On the European Plan,
NO. 136 FULTON STREET,
Between Broadway and Nassau St.,
NEW YORK.

JONES' HOTEL,
NO. 152 CHESTNUT STREET,
PHILADELPHIA.
Baibens & West, Proprietors.

Fountain Hotel,
LIGHT STREET, BALTIMORE,
HURSTON.....Proprietor.

BUSINESS CARDS.

Walter R. Johnson,
CIVIL AND MINING ENGINEER AND ATTORNEY FOR PATENTS. Office and Laboratory, F St.,
opposite the Patent office, Washington, D. C.

Lithography.
JOHN P. HALL & CO.,
161 Main st., Buffalo, (Commercial Advertiser Build.)
Are prepared to execute all kinds of Lithography
in good style and at reasonable rates. Particular
attention will be paid to Engraving Railroad Maps,
Engineer's Plans and drafts, etc., and orders in this line
are respectfully solicited.

**Cumberland, (Md.) Coals for
Steaming, etc.**
ORDERS RECEIVED FOR AND FILLED
by
J. COWLES, 27 Wall St., N. Y.

J. & L. Tuckerman,
IRON COMMISSION MERCHANTS,
AND MANUFACTURERS OF
ULSTER BAR & POUGHKEEPSIE PIG IRON,
69 WEST STREET,
NEW YORK

Henry I. Ibbotson,
IMPORTER of Sheffield and Birmingham Goods.
Also, Agent for the Manufacture of Telegraph
Wire. 218 PEARL ST., NEW YORK.

Charles T. Jackson, M. D.,
STATE ASSAYER, late Geologist to Maine, Rhode
Island, New Hampshire, and the United States,
offers his services to his friends and the public in making
any Chemical, Mineralogical or Geological re-
searches that may be required for the improvement of
Agriculture and the Manufacturing Arts. Particular
attention will be paid to the exploration of mines and
to assaying of ores of the metals.
State Assayer's office, 31 Somerset st.
Boston Sept. 3, 1850.

STEEL AND FILES.
R. S. Stenton,
20 CLIFF STREET, NEW YORK,
AGENT FOR
J. & RILEY CARR,
BAILEY-LANE WORKS, SHEFFIELD,
Manufacturers of Cast, Shear, German, Blister, and
Spring Steel,
Of all descriptions, Warranted Good.
FILES.

Manufacturers of Machinists' Warranted Best Cast
Steel Files, expressly for working upon Iron and Steel,
made very heavy for recutting.
A full Stock of Steel and Files at all times on
hand. 6m4

Dudley B. Fuller & Co.,
IRON COMMISSION MERCHANTS,
No. 139 GREENWICH STREET,
NEW YORK.

Manning & Lee,
GENERAL COMMISSION MERCHANTS,
NO. 51 EXCHANGE PLACE,
BALTIMORE.
Agents for Avalon Railroad Iron and Nail Works.
Maryland Mining Company's Cumberland Coal 'CED'
—'Potomac' and other good brands of Pig Iron.

Samuel Kimber & Co.,
COMMISSION MERCHANTS
WILLOW ST. WHARVES, PHILADELPHIA.
AGENTS for the sale of Charcoal and Anthracite
Pig Iron, Hammered Railroad Car and Locomo-
tive Axles, Force Pumps of the most approved con-
struction for Railroad Water Stations and Hydraulic
Rams, etc., etc.
July, 27, 1849.

James Herron, Civil Engineer,
OF THE UNITED STATES NAVY YARD,
PENSACOLA, FLORIDA.,
PATENTEE OF THE
HERRON RAILWAY TRACK.
Models of this Track, on the most improved plan
may be seen at the Engineer's office of the New York
and Erie Railroad.

PLUSHES

FOR
Railway Cars & Omnibuses.
F. S. & S. A. MARTINE,
112 WILLIAM ST., NEAR JOHN.

ARE now receiving a large and complete assort-
ment of Plain and Figured PLUSHES, of their
own importation, which will be sold at the lowest
market price, viz: Crimson, Maroon, Scarlet, Green,
Blue, Purple, etc.
ALSO—CURLED HAIR, the best manufactured
in market.

**To Railroad Companies,
Machinists, Car Man-
ufacturers, etc., etc.**
CHARLES T. GILBERT,
NO. 80 BROAD ST., NEW YORK,
IS prepared to contract for furnishing at manufac-
turer's prices—
Railroad iron,
Locomotive Engines,
Passenger and Freight Cars,
Car Wheels and Axles,
Chairs and Spikes.

Orders are invited; and all inquiries in relation to
any of the above articles will receive immediate atten-
tion

**Manufacture of Patent Wire
ROPE AND CABLES,**
For Inclined Planes, Suspension Bridges, Standing
Rigging, Mines, Cranes, Derrick, Tilters, &c., by
JOHN A. ROEBLING, Civil Engineer,
TRENTON, N. J.

FORGING.
Ranstead, Dearborn & Co.,
MANUFACTURERS OF
LOCOMOTIVE CRANKS AND CAR AXLES,
ALSO
WROUGHT IRON SHAFTING,
And All Kinds of Hammered Shapes.
Office 25 Foster's Wharf, Boston.

Samuel D. Willmott,
MERCHANT, AND MANUFACTURER OF
CAST STEEL WARRANTED SAWS,
—AND FILES—
IMPORTER OF THE
GENUINE WICKESLY GRINDSTONES
NO. 6 LIBERTY STREET,
NEW YORK.

Railroad Instruments.
THEODOLITES, TRANSIT COMPASSES,
and Levels, with Fraunhofer's Munich Glasses,
Surveyor's Compasses, Chains, Drawing Instru-
ments, Barometers, etc., all of the best quality and
workmanship, for sale at unusually low prices, by
E. & G. W. BLUNT,
No. 179 Water St., cor. Burling Slip.
New York May 19, 1849.

IRON.

Iron.
Pig Iron, Anthracite and Charcoal; Boiler and Flue
Iron, Spring and Blistered Steel, Nail Rods, Best Re-
fined Bar Iron, Railroad Iron, Car Axles, Nails, Stove
Castings, Cast Iron Pipes of all sizes, Railway Chairs
of approved patterns for sale by
COLEMAN, KELTON & CAMPBELL,
109 N. Water St., Philadelphia.

Iron Store.
THE Subscribers, having the selling agency of the
following named Rolling Mills, viz: Norristown,
Rough and Ready, Kensington, Philadelphia, Potts-
grove and Thorndale, can supply Railroad Companies,
Merchants and others, at the wholesale mill prices for
bars of all sizes, sheets cut to order as large as 58 in.
diameter; Railroad iron, domestic and foreign; Loco-
motive tire welded to given size; Chairs and Spikes;
Iron for shafting, locomotive and general machinery
purposes; Cast, Shear, Blister and Spring Steel; Boil-
er rivets; Copper; Pig iron, etc., etc.
MORRIS, JONES & CO.,
Iron Merchants,
Schuylkill 7th and Market Sts., Philadelphia.
August 16, 1849. 1y33

Bowling Iron. Stamped B.O.

Railway Tire Bars
Locomotive and other Axles
Boiler Plates
Rivet Iron
Locomotive Frame do
Bars,
and every other description of this superior Iron.

The subscribers, agents for the sale of Bowling Iron, are prepared to execute orders for importation, especially for railway and machinery uses, with despatch from the manufacturers.

RAYMOND & FULLERTON, 45 Cliff st.

Ibbotson, Brothers & Co's
CELEBRATED CAST STEEL
AND

Best Cast Steel Royal Improved Files, well known as better adapted for Engineers' and Machinists' purposes than any now in use in the United States.

Every description of Square, Octagon, Flat and Round Cast Steel, Sheet, Shovel and Railway Spring Steel, etc., and Steel to order for any purposes—manufactured at their works in Sheffield—and universally known by the old stamp "Globe."

HENRY I. IBBOTSON, Agent,
218 Pearl st., New York.

Smith & Tyson,
IRON COMMISSION MERCHANTS,
BALTIMORE.

REFINED Juniata Charcoal Billet Iron for Wire. Do. for Bridging, of great strength. Flat Rock, Boiler and Flue Iron, rolled to pattern. Elba, Wheel Iron of great strength and superior chilling properties. Elba Forge Iron, American Shot Iron, Cut Nails, Spikes and Brads, Nail and Spike rods, Railroad Spikes of superior quality, Wrought Chair plates of any pattern, punched or plain.

WILLIAM JESSOP & SONS'
CELEBRATED CAST-STEEL.

The subscribers have on hand, and are constantly receiving from their manufactory,

PARK WORKS, SHEFFIELD,

Double Refined Cast Steel—square, flat and octagon. Best warranted Cast Steel—square, flat and octagon. Best double and single Shear Steel—warranted. Machinery Steel—round.

Best and 2d gy. Sheet Steel—for saws and other purposes.

German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.

Genuine "Sykes," L. Blister Steel.

Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by

WM. JESSOP & SONS,
91 John street, New York.

Also by their Agents—

Curtis & Hand, 47 Commerce street, Philadelphia.

Alex'r Fullerton & Co., 119 Milk street, Boston.

Stickney & Beatty, South Charles street, Baltimore.
May 6, 1848.

Railroad Iron.

B. O. Railway Tires, Railway Wheels,
Scotch Pig Iron, Tin Plates and Banca Tin,
Muntz Patent Metal Sheathing,
Baltimore Copper.

Contracts for Rails made on behalf of the manufacturers, for delivery at any ports in the United States, at fixed prices.

Bowling Tires and Tire Bars and Scotch Pigs imported to order.

Muntz's Ship-sheathing, and a general stock of Tin Plates and Banca Tin in store, and for sale by

RAYMOND & FULLERTON, 45 Cliff st.

IRONDALE PIG METAL, MANUFACTURED
and for sale by the Bloomsburg Railroad Iron Co.

LINDLEY FISHER, Treasurer,
75 N. Water St., Philadelphia.

Car Wheel Iron.

THE celebrated cold blast "Conowingo" Pig Iron, for Railroad Wheels, Chilled Rolls, etc., for sale by
E. PRATT & BROTHER,
Baltimore, Md.

Railroad Iron.

3,000 TONS C. L. MAKE 63½ lbs. per yard, now landing and to arrive.

Also contracts made for future delivery of above superior make English Iron.

300 Tons Banks Best Iron, Round, Square and Flat.

200 " English Bar " " " "

10 " 9-16 Square Iron for Railroad Spikes.

For sale in lots to suit purchasers by
DAVID W. WETMORE.
New York, March 26, 1860.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

JOHNSON, CAMMELL & Co's
Celebrated Cast Steel,

AND
ENGINEERING AND MACHINE FILES, which for quality and adaptation to mechanical uses, have been proved superior to any in the United States. Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cyclops Steel Works Sheffield.

JOHNSON, CAMMELL & CO.,
24 Cliff St., New York.

November 23 1849.

Bowling Tire Bars.

40 Best Flange Bars 5½x2 inches, 11 feet long.
40 " 5½x2 " 7 feet 8 in. long.
40 " Flat " 6x2 " 11 feet long.
40 " 6x2 " 7 feet 8 in. long.

Now in store and for sale by

RAYMOND & FULLERTON,
45 Cliff street.

Wheel, Forge and Foundry
Iron.

LOCUST GROVE Wheel Iron of great strength and superior chilling property.

Balt. Charcoal Forge Iron, from Patuxent, Curtis Creek and Gunpowder furnaces.

Elkridge Foundry Iron, of superior strength and softness. Anthracite and Charcoal Iron from Pennsylvania and Virginia. Gas and Water Pipes, Lamp Posts from Elkridge furnace.

LEMMON & GLENN,
62 Buchanan's Wharf, Baltimore.

Railroad Iron.

1650 Tons, weighing about 61 lbs. per yard, 40 tons, weighing about 52 lbs. per yard, and 825 tons, weighing about 53½ lbs. per yard, of the latest and most approved patterns of T rail, for sale by

BOORMAN, JOHNSTON & CO.,
119 Greenwich street.

New York, Aug. 26, 1850.

N.B.—B. J. & Co are also prepared to take contracts for English rails, delivered in any of the Atlantic ports of the United States.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract to deliver Rails of superior quality, and of any size or pattern, to any ports of discharge in the United States.

COLLINS, VOSE & CO.,
74 South St.

New York, June 1, 1850.

Tredegar Iron Works.

ROLLING MILL FOUNDRY AND MACHINE SHOPS. The undersigned continues to manufacture at his Works in this city (from best charcoal metal) Bar Iron of every description, embracing—Rounds and Squares, from ½ to 5 inches diameter. Flats, from ½ to 7 inches, all thicknesses.

Bands and Scrolls, all sizes. Boiler plate and Plough Iron. Railroad and Locomotive Axles and Tires. Locomotive Frames, Spikes and Plates. Hoops, Ovals, Half Ovals, Half Rounds, Angle, T, L, and indeed every description of Iron usually manufactured, all of which he warrants to be equal to any made in this country. He also manufactures at his Foundry and Machine Shops all descriptions of Railroad Work, say, Locomotives, Railroad Wheels and Axles complete and ready for the road, Railroad Chairs, etc. Also, Marine and Stationary Engines all sizes, Sugar mills and Engines, Horse mills, and every kind of Machinery usually required for the operations of the country. He has paid particular attention to getting up machinery, etc., for Gold Mine operations, and those in want of such work might find it to their advantage to give him a call.

J. R. ANDERSON.

Richmond, Va., Sept. 10, 1850.

CUT NAILS OF BEST QUALITY, BAR IRON (including Flat Rails) manufactured and for sale by
FISHER, MORGAN & CO.,
75 N. Water St., Philadelphia.

Car Wheel Iron.

100 Tons "Columbia" No. 2 Cold Blast Charcoal Iron.

300 Tons "Salisbury" No. 1, do. do.
For sale by CHARLES T. GILBERT,
No. 80 Broad at.

New York, Sept. 21, 1850.

Railroad Spikes.

THE subscribers are prepared to make and execute contracts for Railroad Spikes of a superior quality, manufactured by the New Jersey Iron Company, at Boonton.

DUDLEY B. FULLER & CO.,
139 Greenwich st. corner of Cedar.

S. S. Keyser & Co.,
IRON WAREHOUSE,

Corner of South and Pratt Streets,
BALTIMORE, MD.

Selling Agents for the Rough and Ready Bar Iron and Elk Boiler and Flue Iron Rolling Mills, Sarah and Taylor Furnaces, and Wrightsville Hollow Ware Foundry, and Dealers in Bar and Sheet Iron, and Cast, Sheer, German, Blister, Spring and Electrodes Steel, etc., etc.

Railroad Spikes, Boiler Rivets, etc.

THE Subscribers, Agents for the sale of James S. Spencer's, Jr., Railroad and Boat Spikes, Boiler Rivets, and Wrought Iron Chairs for Railroads, made at his Works near this city, will execute all orders with promptness, despatch, and of the best quality.

ALSO IMPORTERS of English refined and Merchant bar Iron; Extra refined Car and Locomotive Axles (from 3½ to 6½ inches in diameter); B. O. Locomotive Tire (welded by Baldwin). Also, supply Boiler and Flue Iron cut to pattern or otherwise.—Spring, Shear, and Cast Steel, etc., etc., etc.

T. & E. GEORGE.

Philadelphia, November 14, 1850.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract for the delivery of English, Welsh and Scotch Rails, of any pattern and weight, also for every description of English, Welsh, Scotch, and Swedish Iron, Railway Chairs and Spikes, Rivets, Bolts, Nuts, Washers, Chain Cables, Anchors, Tin Plates, German Spelter, Iron Castings, and every description of Machinery.

WILLIAM BIRD & CO.,
Iron and Tin Plate Merchants,
44 Wall st., New York.

And at 5 Martin's Lane, City, London,
and 140 Buchanan st. Glasgow.

July 27th, 1850.

Railroad Spikes, Wrought Chairs and Fastenings.

THE subscribers continue to manufacture, with increased facilities, Hook and Flat Head Railroad Spikes and Chairs. The points being finished by hand, have a long taper, and sharp point, and are much superior to those made entirely by machinery.

We are also prepared to furnish Wrought Chairs, Clamps and Fastenings of every description, either punched or plain. The best quality of refined iron is used in the above articles, and our prices will be made as favorable as any in the country.

The patent Clinch Spike will be found an improvement to secure the rail at the joints.—They drive in the manner shown and are not liable to work loose.

All communications, addressed to the undersigned, will meet with prompt attention.

SMITH & TYSON,
No. 25 South Charles st., Baltimore Md.

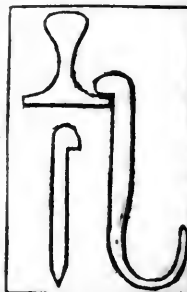
Railroad Iron.

THE "Montour Iron Company" is prepared to execute orders for Rails of the usual patterns and weights, and of any required length not exceeding 30 feet per rail. Apply at the office of the Company,

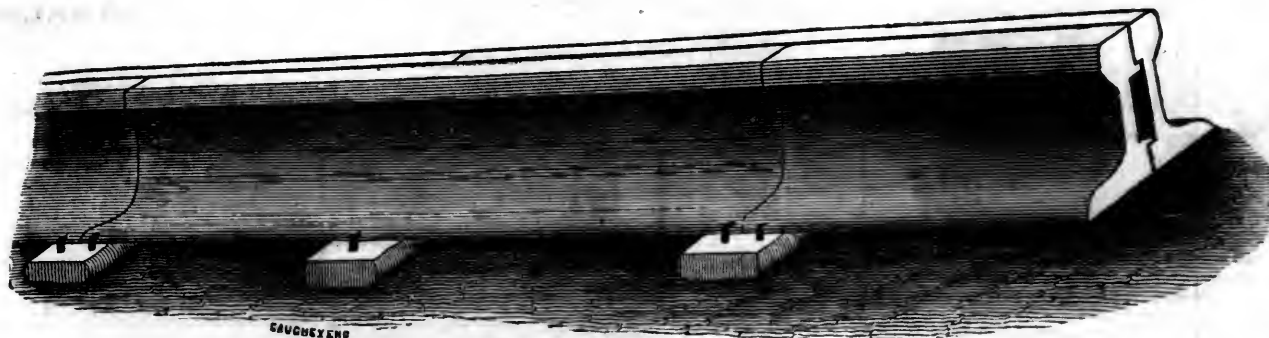
No. 73 South 4th st., Philadelphia,

Or to the Agents,
CHOUTEAU, MERLE & SANFORD,
No. 51 New st., New York.

September, 1850.



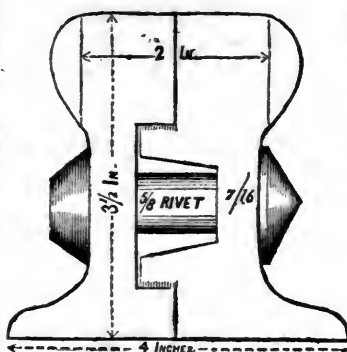
PATENT COMPOUND RAIL.



THE UNDERSIGNED NOW OFFER TO THE Railroad Public a new Compound Railroad Bar, which possesses, as they believe, a decided superiority over every kind now in use. The Cuts annexed will give a good idea of the form of the Rail, and the mode of combination.

This Rail has now been in use on the New York and Erie and the Utica and Schenectady Railroads for nearly two years, and has proved itself to be a *durable and continuous* rail, realizing the advantages of a theoretically perfect rail, over the one in common use. We invite the attention of Railroad Companies to a careful examination of the merits of the form now offered.

The advantages of this Rail are: first, it effects a saving of from 25 to 50 per cent. in the wear and tear of the machinery; secondly, it saves to a vastly greater extent in the repairs of track; thirdly, it secures a much higher rate of speed with the same power; and what is of still



greater importance, it offers complete protection against most of the accidents to which companies are liable. For these reasons, it is believed to be not only the best, but the cheapest rail that can be used. In enumerating its advantages, the proprietors only repeat the statements of competent persons, who have had the best opportunities of judging of its merits.

This improved Rail is now being manufactured at the Works of the Mount Savage Iron Co. in Maryland. Any communications or enquiries addressed to either of the undersigned will receive prompt attention.

J. F. WINSLOW, President,
Troy, N. Y.
ERASTUS CORNING, Albany.
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore.

April 8, 1851.

Faggotted Car and Engine Axles

FORGED by RANSTEAD, DEARBORN & Co., Boston, Mass. These Axles enjoy the highest reputation for excellence, and are all warranted.

TO RAILROAD COMPANIES, CAR MANUFACTURERS, etc.

THE Undersigned hereby gives public notice, that the Commissioner of Patents, pursuant to his decision in relation thereto, on the 8th day of October, 1850, issued to him a Patent for the sole right to manufacture, and exclusive use of the INDIA RUBBER CAR SPRING, on account of priority of invention of said Spring.

New York, Oct. 23, 1850.

Iron Trade of Pennsylvania.

DOCUMENTS and Statistics relating to the Manufacture of Iron in the State of Pennsylvania—giving a history of the manufacture from its commencement to this date, illustrated by diagrams. Also tables giving the address and capacity of every establishment in the State. Prepared by direction of the late convention of the trade held in Philadelphia.

For sale by
LINDSAY & BLACKISTON, Philadelphia.
FIELDING LUCUS, Jr., Baltimore.
HENRY G. NICHOLS, 79 Water st., N. Y.

It will be sent by mail to any order enclosing the money, and post paid.

Ulster Iron.

THE ULSTER IRON WORKS, Saugerties, N. Y., continue in full operation. Orders for round, square, flat, band, hoop and scroll iron, will be received and promptly executed by

J. & L. TUCKERMAN,
69 West St., New York.

Railway Iron.

THE Subscribers will contract to deliver, in the course of the ensuing Spring and Summer, the best English Rails, made by a particular specification, and of any pattern required.

DAVIS, BROOKS & CO.,
68 Broad st.

On hand for sale, English rails of 53 lbs. to the yard, made by particular specifications.

January 10, 1851. 2m

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention.

J. F. WINSLOW, President,
Troy, N. Y.
ERASTUS CORNING, Albany.
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md

November 6, 1849.

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phoenix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehanna river; which two establishments are now turning out upwards of 1800 tons of finished rails per month.

Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.

REEVES, BUCK & CO.
45 North Water St. Philadelphia;

March 15, 1849

LAP—WELDED WROUGHT IRON TUBES

FOR

TUBULAR BOILERS,
FROM ONE AND A QUARTER TO SEVEN
INCHES IN DIAMETER.

THE ONLY Tubes of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER & SON, Patentees,
28 Platt street, New York.

AMERICAN PIG IRON.

"POUGHKEEPSIE" brand, Dutchess Co., N. Y.
"GLENDALE" brand, Lehigh county, Pa.
Orders for the above two well known brands will be received, and promptly executed, by

J. & L. TUCKERMAN,
69 West St., New York.

American Cast Steel.

THE ADIRONDAC STEEL MANUFACTURING CO. is now producing, from American iron, at their works at Jersey City, N. J., Cast Steel of extraordinary quality, and is prepared to supply orders for the same at prices below that of the imported article of like quality. Consumers will find it to their interest to give this a trial. Orders for all sizes of hammered cast steel, directed as above, will meet with prompt attention.

May 28, 1849.

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for railroads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.

JOHN F. WINSLOW, Agent,
Albany Iron and Nail Works, Troy, N. Y.
The above Spikes may be had at fact prices, of Erastus Corning & Co. Albany, Merrill & Co., New York; E. Pratt & Brother, Baltimore, Md

Stickney & Beatty, DEALERS IN IRON AND IRON MANUFACTURERS.

AGENTS for the Baltimore City Rolling Mill, (Works of Messrs. Ellicott) also agents for the sale of the Laurel, Locust Grove and Gunpowder (Balt.) Forge Pig Irons; Hupp's Cold Blast Columbia Wheel Iron, Fort and anti-Eaton Pig Irons. Caledonia, Columbia and Capon Cold Blast Boiler Blooms, warranted; Win. Jessop & Son's Steel; Old Colony and anti-Eaton Nails; Bar Iron, Boiler Plates, Hoop, Sheet, Oval, Half Oval, Horse Shoe and other Iron.

Exchange Place, Baltimore.

Railroad Iron.

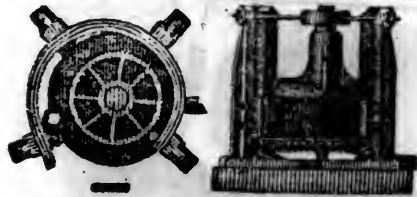
2000 Tons, weighing 53 pounds per lineal yard, of the most approved pattern of T rails, in store and to arrive, for sale by

COLLINS, VOSE & CO.,
74 South St.

New York, June 1, 1850.

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phoenixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll sounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y.

P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery for making Spikes, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

CHILLED RAILROAD WHEELS.—THE UNDERSIGNED are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the use of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

Brown's Old Established SCALE WARE HOUSE,
NO. 234 WATER ST., NEW YORK.

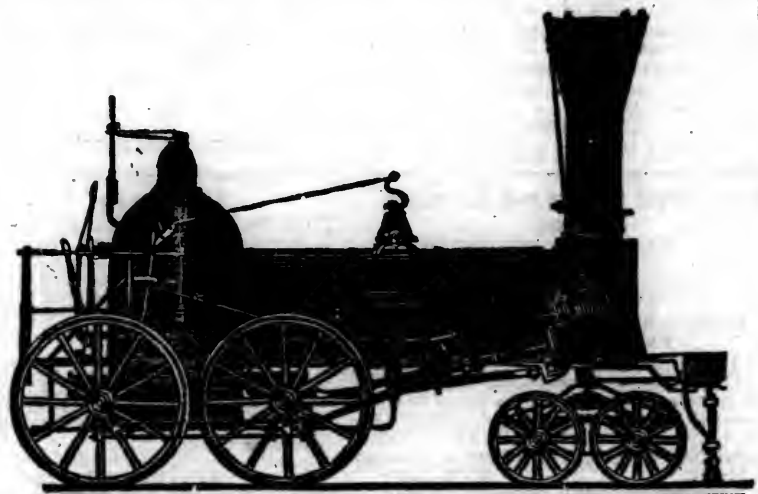
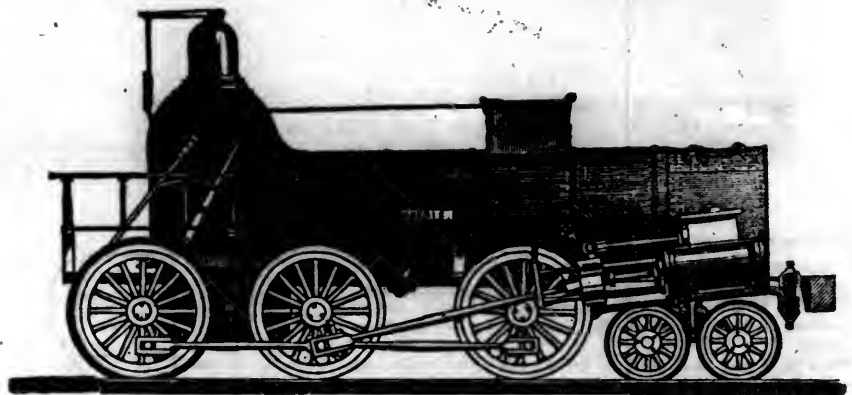
THE Subscriber, Practical Manufacturer of Scales of every description, respectfully asks the attention of Railroad Companies to his Improved Wrought Iron Railroad Track and Depot Scales which for strength, durability, accuracy, convenience in weighing, and beauty of workmanship, are not surpassed by any others in this country.

He is aware that this is rather a bold assertion for him to make, yet he can say with confidence that they have but to be tried to give them precedence over all others.

J. L. BROWN.

Bank Scales made to order, and all Scales of his make Warranted in every particular.

Reference given if required

NORRIS' LOCOMOTIVE WORKS.
BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,

THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size. Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tyres are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS

PATENT MACHINE MADE HORSE-SHOES.

The Troy Iron and Nail Factory have always on hand a general assortment of Horse Shoes, made from Refined American Iron.

Four sizes being made, it will be well for those ordering to remember that the size of the shoe increases as the numbers—No. 1 being the smallest.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

Etna Safety Fuse.

THIS superior article for igniting the charge in wet or dry blasting, made with DUPONT'S best powder, is kept for sale at the office and depot of

REYNOLDS & BROTHER,

Sole Manufacturers, No. 85 Liberty St.

NEW YORK.

And in the principal cities and towns in the U. States.

The Premium of the AMERICAN INSTITUTE was awarded to the Etna Safety Fuse at the late Fair held in this city.

November 3, 1843.

ly

UNION WORKS,

North street, opposite the Railroad Depot,
BALTIMORE.

Poole & Hunt,

Manufacturers of Steam Engines and Mill Gearing, Machinists' Tools, and all kinds of heavy and light Machinery.

Also put up Arrangements of Wrought Iron Pipes for heating buildings and conveying steam or water.

Castings of every kind furnished at short notice.

Every exertion will be made to insure the satisfaction of customers.

Patent Machine Picket Fence

SIX DIFFERENT STYLES of this fence are now made by patent machinery; and is by far the most economical fence for Railroads, Farms, Yards, etc., ever yet offered to the public, costing only from 4 to 30 cents per foot, according to pattern; and is so put up as to be shipped at a trifling expense. Full particulars will be furnished, by addressing the subscriber, to whom all orders should be sent.

N. STRATTON, Troy, N. Y.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 136 NASSAU ST., NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.

SECOND QUARTO SERIES, VOL. VII., No. 23.

SATURDAY, JUNE 7, 1851.

[WHOLE No. 790, VOL. XXIV.]

ASSISTANT EDITORS,

J. T. HODGE, *For Mining and Metallurgy.*

GEN. CHAS. T. JAMES, *For Manufactures and the Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & Co., 136 NASSAU ST.

Saturday, June 7, 1851.

Lake Superior Copper Mines.

Peninsula Mine.—One of the new companies chartered the last year by the Legislature of Michigan, was named the Peninsula Mining Company, it was organized in New York city, its members for the most part being the same as those of the Minnesota Mining Company. Their object was to purchase a track on the Minnesota location, and work the mine under a separate organization; for this purpose a lot of forty-five acres was set off a little more than half a mile south of the Minnesota mine, the location of which may be seen on the map of this mine published in the *Railroad Journal*, December 1st, 1849; it is in the southwest corner of section fifteen, and south-east corner of section sixteen. In August last, the writer was employed by E. C. Roberts, Esq., agent of the Minnesota mine, to survey this lot, which he did, and presented a report, of which the following is a copy:—

E. C. ROBERTS, Esq., Agent Minnesota Mining Co.

Dear Sir,—The lot of mineral land I surveyed the last week under your directions for the *Peninsula Mining Company*, is in the south-west corner of the tract held by the Minnesota company, and about a mile and a half in a straight line from the nearest point of the Ontonagon River. Its south boundary is the south line of sections fifteen and sixteen, which line separates the Minnesota tract from that of the Ontonagon company. The north and south line between these sections passes through the middle of the lot—this extending along it ninety rods, and on each side from the line, forty rods. The contents of the tract are therefore forty-five acres.

In the north-west corner a brook flows through in a westerly direction towards the river; and it is understood that the privileges of this brook, extending beyond the limits of the lot, are to be appropriated to the use of the Peninsula company, to afford them all required convenience for washing and preparing ore.

From this brook towards the south, the surface rapidly rises to the summit of one of the three or four parallel ridges of the trap range. On the north side of the stream is another of these ridges, almost precisely similar, on which are found the veins of copper worked by the Minnesota company. They are peculiar for their straight direction, their narrow summits, their precipitous southern face of trap-rock, and their more gently descending northern slopes, covered with a fine growth of maple, birch, hemlock, bass-wood, fir, &c. Their elevation is from three to five hundred feet above the bottom lands; and their summits, except when broken by occasional gaps, are nearly level. Along these narrow summits are very frequently found lines of ancient pits, once sunk upon veins of copper, the position of which they now serve to designate. These ancient excavations are represented on the accompanying map by dotted lines.

The southern line of the lot lies mostly just along the base of the precipice on the south side of the ridge. It ascends the cliff only near the southwestern corner of the lot, and this corner is almost directly upon the summit. The course of the ridge being about east 24° north, it is found quite across the tract for its entire length of eighty rods. A little west of the centre line, it is broken by one of the gaps common to these ridges; and in this gap is found a vein containing copper, which is frequently the case in similar positions. This vein, called a *cross-vein* (from its course being nearly across that of most of the veins of the country) has been opened but partially in this place. What appears however to be its continuation on the north slope of the ridge, not far from twenty rods distant, has been more thoroughly explored by sinking in the rock. Here a vein was discovered by re-opening an ancient pit, which presented even at the surface, little masses and sheets of copper. It lay nearly vertically in the rock, and its direction seemed to be

north-54° west, south 54° east. As the ancient pit was deepened the copper increased in quantity and size of lumps. From the surface down to the depth of thirteen feet, it furnished, I am informed, copper enough to pay for the work done—a very unusual thing in these veins. The water standing seven feet deep in the shaft, I could not examine it thoroughly. A mass of copper, however, is seen standing straight up in the water, and evidently fixed in the vein beneath. It is very rare to find anything so promising as this so near the surface; and in connection with the favorable position of the vein for working, and the certainty of finding other veins along the summit of the ridge, the locality cannot but be regarded as highly valuable, and fully warranting the immediate commencement of mining operations on a liberal scale. The slope of the hill below the shaft is such, that within two hundred feet an adit level could be driven up on the vein full one hundred feet, I think, lower down; thus affording, at little expense, an entrance into the vein, and assuring its drainage, to the depth of two hundred feet and more below the summit of the ridge. By continuing this adit—working always on the *cross-veins*,—the other veins would finally be cut at a low level also, whose out-crop is seen in the ancient pits along the summit. These pits have been partially cleared out at a few points, and veins are exposed (at least two) containing native copper, and of very promising appearance. Their inclination downwards is towards the north, at a steep angle. The deeper they get, the further they enter the tract set off for the Peninsula company and portions of the veins, which at the surface are south of its boundary, must cross the line below. The extent of the veins on the lot is sufficient for the operations of one company for more than a generation, even if worked as extensively as their external appearance seems now to warrant.

The brook will be valuable for washing ores, and may possibly afford some water power near the lines of the lot. The nearest road to the river will be down its valley, and will not probably exceed two miles in length—most, if not all the way, being a down-grade. This is as near navigable water as any mines in the Lake Superior region are situated—a very important point to be considered in estimating the value of mining localities, to some of which the transportation of supplies and products constitutes one of the principal items of expense.—Very respectfully, I am yours, &c.,

JAMES T. HODGE,

Geologist and Surveyor.

MINNESOTA MINES, August 8, 1850.

Similar favorable reports being received from several of the directors of the Minnesota company, who visited the mines during the summer, the lot was finally purchased, together with one hundred and fifteen acres of agricultural land adjoining it, and preparations for mining were made in Novem-

ber following. So flattering was the appearance of the vein, that an offer was received to sink the shaft eighty feet below the old workings, for the copper that might be found; but this offer was not accepted. The accounts subsequently sent on correspond to the most sanguine anticipations of those interested. From eight to ten tons of copper are estimated to be now upon the surface, the result of the work of six men from the first of December to first May. In consequence of the abundance of copper in the vein, the work has been retarded, so that the miners have reached the depth of only sixty feet from the point where they commenced. Arrangements are now in progress for increasing the force upon the mine, and prosecuting the work with all despatch. No mining enterprise has been commenced under such favorable auspices as this, none with so small expenditure of money has produced such a result; and no locality is more advantageously situated for the development of its resources with so little outlay for general expenses. We trust soon to hear that the title to the lands held by the Minnesota company under lease from the general government, has been ratified and perfected, the money having been deposited according to law for this purpose at the Land Office at Sault Ste. Marie. II.

Massachusetts Free Bank Law.

The provisions of the Massachusetts Free Banking Bill, in its amended shape, and which has become a law, are as follows:

SEC. 1. Any number of persons, not less than fifty, may become a body corporate for banking purposes, subject to all the duties, liabilities and restrictions to which the existing banks are now liable. The stock not to be less than \$100,000, nor more than \$1,000,000.

2. The stock of banks hereby authorized by this law shall be divided into shares of \$100. One-half the capital must be paid before the commencement of operations, and the whole within one year thereafter.

3. Before the commencement of operations, a certificate shall be filed in the office of the Secretary of the Commonwealth, signed by the President and Directors, stating:—1. The corporate name of the bank. 2. The name of town or city where located. 3. The amount of its capital stock. 4. The names and residence of the stockholders and the number of shares held by each. 5. When the bank is to go into operation. No bank to assume the name of any pre-existing bank.

4. The capital stock may be increased at a subsequent date, by a vote of a majority of the stockholders; the same proceedings shall be had as in the first instance.

5. Such bank shall carry on the business of banking at its own banking house, but not elsewhere, and may pay dividends semi-annually. If any bank neglect to carry on the business of banking, a forfeiture of privileges shall follow.

6. The Auditor of State is authorized and required to procure the engraving and printing of circulating notes, of such denominations as previously allowed—all such notes to be registered, numbered and countersigned by the Auditor, before delivery.

7. Banks authorized by this law may transfer to the Auditor, at a rate not above its par value nor above its market value, any public stock issued by any city or town in this commonwealth; or by either of the New England states; the state of New York or by the United States; and receive therefor an equal amount of circulating notes.

8. The Auditor is authorized to exchange any such stocks for others deposited by the bank, provided the security to be equally good; and the amount of circulation not reduced below fifty thousand dollars.

9. The Auditor is authorized to deliver to bankers under this act, powers of attorney to receive interest or dividends on their stocks held by him.—Such power to be revoked whenever occasion may require it.

10. Such bank is authorized to loan and circulate such notes according to the ordinary course of banking.

11. In case of failure to pay such notes on presentation, they may be protested; and if not redeemed within ten days after notice, the Auditor is authorized to give public notice thereof, and that they will be redeemed out of trust funds in his hands.

12. Banks established under this law are restricted in the amount of circulation to the same limit as the old institutions, viz: twenty-five per cent. beyond their capital.

13. All plates, dies and materials for printing such circulating notes, to remain in the custody of the Auditor of State.

14. The Auditor to be liable to a fine of five thousand dollars and imprisonment not less than five years, if he permit circulating notes to be issued to any bank beyond its collateral stocks.

15. Each bank established under this act, shall, in addition to the ordinary returns required by law, specify the stocks deposited with the Comptroller for its circulation.

16. The Secretary of the Commonwealth is authorized to prepare separate abstracts for the banks established under this act.

17. The Bank Commissioners shall have the same power over the banks established by this act as over chartered banks; and they are required to examine the certificates of stock held by the Auditor in trust for such banks.

18. Whenever any Free Bank shall return to the Auditor ninety per cent of the bank notes received from him, and shall deposit funds for the balance, the Auditor may return to this bank all stocks previously received from it.

19. Free banks that relinquish business must give six years notice that "their circulating notes must be presented to the Auditor for payment within six years after the issuing of such notice."

20. The Justices of the Supreme Court are authorized to adopt proceedings against Free Banks, similar to those against Chartered Banks, whenever the court may deem it necessary.

21. Whenever any bank shall be placed in the hands of agents or receivers for liquidation, by the Supreme Judicial Court, the Auditor shall transfer to such agent all stocks or moneys held by him in trust for such bank.

22. This act may be amended or repealed at the pleasure of the Legislature.

North Carolina Coal.

We have examined a report recently made by Professor Walter R. Johnson on the subject of a coal formation in the interior of North Carolina. It has been known for a great length of time that coal existed in Chatham and Moore counties, but to what extent has not been so well understood until quite lately.

This coal is located on Deep river, some 45 miles above Fayetteville, and appears to be in the shape of a great basin, extending along said river for several miles. Indeed, the river seems to run directly through the formation, as appears by the maps, etc., of Prof. Johnson.

The Rocky river and the Hawe river join Deep river in the vicinity of Haywood, and from this point it takes its name as Cape Fear river, which passes Fayetteville, Wilmington, etc., and empties into the Atlantic ocean at Smithville.

The Cape Fear river is already navigated by steamboats, and other vessels, as far up as Fayetteville.

The State of North Carolina, and a company formed in that State, are making this river, and Deep river, navigable, with locks and dams (same as the Oswego canal) to a point up to and beyond the coal fields, the cost of which is but \$200,000, and will afford the cheapest internal navigation in the United States.

This navigation is to be completed on or before the first day of January next, and, we understand, there is a company formed (part of whom belong in this city) with a proper charter, who are making preparations to engage in that trade as soon as navigation will permit. We also understand that miners, under the direction of a competent engineer, have already gone on to open the mines, and prepare for active business; and judging from the

character and ability of the men who are engaged in this enterprise, there can be no doubt of their success, for they are gentlemen who carry out what they undertake, and do not jump at conclusions.

Coal is one of the greatest sources of wealth to Great Britain, and next to iron is their most permanent reliance. In the United States it is becoming a vast trade, and the demand, especially for bituminous, is continually greater than the supply. Twelve thousand cargoes of this commodity were shipped from Philadelphia last season, which shows a rapid increased demand over prior years; and, unless Prof. Johnson is largely mistaken—which is not very likely, as he stands at the head of the geological profession, and there can be no better authority—this deposit of bituminous coal is likely to prove invaluable, not only as a fuel, but to the owners of the mine, the quality being unquestionable, while its cost, delivered in New York, is much less than any other coal of the same character.—*Albany Evening Journal*.

Wickersham's Weaving Wire.

Strange as the idea may seem, it is no less strange than true, that iron of a thickness that would make it appear impossible that it could be worked by any other agency than the forge, the anvil and the hammer, is now, by the aid of new and powerful machinery, woven into the most beautiful patterns, and the designs varied with almost the same facility as in the weaving of a carpet or table cover.—The specimens that we have seen excel in beauty and finish any iron railing that we have seen, and do not cost more than half the ordinary cost of even cast iron railing. Many of the first class counting houses and offices in New York are now fitted up with railing in preference to any other heretofore or at present in use. The uses of the invention are not confined to railing, as the most tasteful verandahs, window gratings, garden fences, etc., are made by it. The coal miners of Pennsylvania prefer it above all other modes for their screens.—Charleston and New Orleans each have parks enclosed by it, and many of the rich southerners have their flower conservatories enclosed in the same manner. In fact wherever it has been introduced, it has come into almost unlimited favor. The peculiar advantages it possesses over all other kinds of railing is, that in its manufacture the rod or wire is so crimped, that in the weaving process, they are crossed in a manner that one binds the other, thus giving a mutual support to the whole, that renders it more durable than work twenty times its weight made in the old way.

Mr. John Wickersham, the ingenious inventor, also manufactures a superior article of iron wire for farm fences, that cost but little, will last a man a lifetime, and are easily constructed. In thinly wooded countries they will come into rapid demand as they already are in many parts of Europe. Add to these one more article. Mr. Wickersham manufactures a bedstead of iron, so constructed that it can be shut up during the day time, and will require but a few inches of room from the wall out, is bug proof, and easily managed. We think this store is worth a visit to those who visit New York.—*Albany State Register*.

Silver Mine in Virginia.—A valuable silver mine, it is supposed, has been discovered on the farm of Jefferson county, Va., situated on the east bank of the Shenandoah River, and at the base of the Blue Ridge mountain. The Spirit of Jefferson says:—The mine was discovered some months since, and a small specimen obtained and forwarded to the Philadelphia Mint to be assayed. The superintendent of the mint has returned the same, made into a ten cent piece, and pronounces the ore exceedingly rich. The ledge of rocks in which the ore is impregnated, is of immense size, and if the ore yet to be taken out should prove as rich as that already tested, it will rank as among the most productive silver mines of the country. Every three pounds of rock, it is estimated, will yield one in silver. Arrangements have been made for at once mining, and but a very short time will demonstrate the advantages of the discovery.

From the Bunker Hill Aurora.

Rotation of the Earth.

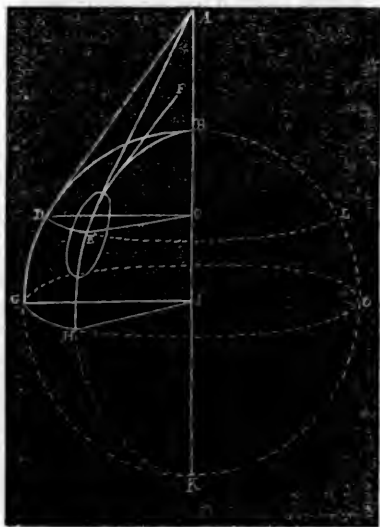
In the great experiment of Foucault, the motion of the pendulum at the pole is not difficult to conceive. The plane in which oscillation takes place, not revolving with the earth in its motion from east to west, the pendulum will, at each returning sweep, approach an observer from a new point; or in other words, the plane of oscillation will revolve, and in twenty-four hours will have accomplished a revolution around the earth's axis.

The motion of the pendulum at the equator is easily presented. By the law of inertia, the absolute direction of the plane of oscillation will be, throughout the revolution of the earth, that in which the motion of the pendulum commenced. If it coincide with the equator, at the outset, it will continue to do so. If it be at right angles to the equator, the same rule will apply. Any given direction will be maintained till the pendulum comes to rest. The plane of oscillation will not revolve around its own vertical.

The motion of the pendulum, at a point between the pole and the equator, is less easily explained.

It is influenced by so many varying conditions that a strictly true mechanical conception of it may be impossible. As yet, the more gifted mathematicians have not attempted to present it in a detailed form, suited to the general comprehension. While we wait for their patient and more thorough investigation, it may not be unwise to avail ourselves of such illustrations as may be approximately correct, and possibly prepare for more profound and accurate views when they shall be offered.

With these considerations the following is submitted:—



The accompanying diagram represents the earth. A K is its axis; G H its equator, and D E L the meridian of latitude of Boston. B D G and B E H are the two meridians of longitude fifteen degrees apart, and D A and E A are tangents to these meridians, at the points D and E.

A pendulum at the pole making its first oscillation in the meridian B E H at the end of an hour, would vibrate in the meridian B D G. The plane of oscillation would in this time have swept over 15 degrees—the 24th part of 360 degrees; an angle equal to D C E, which measures the inclination of the two meridians to each other.

A pendulum at D, in the latitude of Boston, for example, oscillating in the meridian G D B, at the end of an hour would have moved with the earth in its revolution to E; but preserving the original direction of its oscillation, it would not vibrate in the meridian H E B but in the direction E F parallel to D A.* This direction makes with the tangent of

the meridian the angle A E F—the portion of 360 degrees through which the plane of oscillation revolves in the latitude of Boston in an hour. 360 degrees divided by this angle will give the number of hours required for a complete revolution. If the angle be less than 15 degrees, the revolution of the plane of oscillation will require more than twenty-four hours.

Now although not strictly true, the three lines A E, A D and F E, may be regarded as lying in the same plane, and the angle D A E as being therefore equal to its alternate angle A E F. But the angle D A E is less than the angle D C E, because of the triangles D A E and D C E having the same base, D A E has the greater altitude. A E F being equal to D A E, A E F is less than D C E. But D C E is fifteen degrees, the inclination of the two meridians to each other. Three hundred and sixty divided by this quantity, which is less than fifteen, will give a quotient greater than twenty-four.

The lower the latitude, that is, the nearer the line D E is to the equator, the less will be the angle D A E and of course the angle A E F, and the greater will be the quotient arising from the division of 360 by this angle. At the equator where the tangents to the meridian no longer converge but are parallel, the angle will be reduced to zero, and the quotient become infinity.

The path of the pendulum in latitudes between the pole and the equator may be thus illustrated:

Upon a globe a foot or more in diameter, having upon it the hour parallels, small circular discs having a straight dark line through the centre (gum-tickets such as are used for price-marking by merchants answer the purpose well) may be attached in the following manner:

In the latitude of Boston, for example, attach the first ticket with the straight line north and south. This line will represent the sensible path of a pendulum made to vibrate north and south in this latitude. Place the second ticket upon the next meridian eastward, the line upon it being parallel to that on the first ticket. This line will represent the sensible path of the pendulum at the end of the first hour's vibration. The third ticket is to be placed on the third meridian, its line being parallel to that on the second, and so on around the globe, the straight line on each succeeding ticket being parallel to that on its predecessor. The straight lines will give the path of the pendulum as it passes each succeeding meridian.

It will be observed on attaching the 24th ticket, that the line which represents the path of the pendulum at the commencement of the 24th hour of its vibration, is not parallel to that on the first ticket. The line will not have completed a revolution around its centre. Now with a pencil continue the parallel lines across the tickets already attached, each succeeding line being, as before, parallel to its predecessor, and it will be found that about twelve of the tickets, an hour apart, will have been crossed, before a north and south line will be drawn. In other words, it will appear that about thirty-six hours are required in this latitude for the plane of oscillation to complete a revolution about its own axis.

A large orange and wafers, crossed by straight pencil mark, may be substituted for the globe and gum-tickets, and the general illustration very well given.

E. N. H.

Cambridge, May 23d, 1851.

Railroad from Harrisburgh to Elmira.

The completion of the Erie railroad has turned the attention of the people of Baltimore, and of the interior of Pennsylvania, to the subject of a railroad communication between the above named places, by following up the valley of the Susquehanna. Baltimore is directly south of Elmira, and can be connected with the latter by an almost straight road. A line of railroad is already in operation from that city to Harrisburgh, a distance of eighty-three miles. From Harrisburgh to Elmira the distance is 161 miles. From Williamsport to Elmira, a distance of 74 miles, a road we understand is under contract, leaving but 87 miles to be provided for to form a continuous line from Baltimore to Buffalo,

To promote the construction of the above link, a convention was recently held in Sunbury, Penn., which was numerously attended by delegates from Baltimore, and from the counties of Lycoming, Union, Dauphin, Schuylkill and other portions of the Susquehanna Valley. The proceedings of the meeting were characterized with a spirit which showed determination to open this great line at the earliest moment. The following are the resolutions adopted:—

"Resolved,—That the proposed railway communication between the northern terminus of the York and Cumberland railroad, connecting, as it does, with the great Pennsylvania railroad, the Dauphin and Susquehanna, the Trevorton and Mahanoy, and the Shamokin and Sunbury, and extending to the New York and Erie railroad, is a project of great national as well as local importance.

"Resolved,—That in the opinion of this convention, the agricultural and mineral products of the valley of the Susquehanna, will throw upon the proposed railway, a tonnage which will yield more than a full return for the amount of capital required for its completion, while the immense trade and travel between the Lakes and the Gulf, must make it one of the greatest thoroughfares in the United States.

"Resolved,—That it is essential to the immense trade, and especially the coal and iron trade, from the Valley of the Susquehanna to the great Lakes on the north, and the Chesapeake on the south, that the railway to be constructed to connect these extreme points, should be of the uniform Pennsylvania and Maryland gauge; and that the companies, whose roads will form this great line of railway, be earnestly requested to build their improvements to conform to that gauge, and that a committee of five be appointed to confer with the several companies on this subject.

"Resolved,—That an Executive Committee, to consist of fifty-six persons, be appointed to assist in the furtherance of the objects of this convention."

The Baltimore delegation on its return home, submitted to the people of that city a long and interesting report of the doings and objects of the convention, a portion of which we give below. The city of New York having completed the Erie road, Baltimore and Philadelphia now step forward and claim that it may be made a highway for each, to the west. Whether the supremacy of New York can ever be disturbed by the efforts of her rivals, may be well doubted; but each city must have its share of trade, and we have no doubt that the proposed connection would add largely to the business of Baltimore, and would become a great route of travel between the north and the south. The object which is proposed to be accomplished is fully set out in the annexed extract:

"It will be found upon an examination of the facts to which we invite attention, that Baltimore has been very suddenly—within the short space of the last year or two, almost unconsciously to herself—placed in a position of singularly advantageous relationship to this Valley of the Susquehanna; that circumstances, over which she has exercised no control, and towards which she has not even contributed in any manner whatever, are now in a progress of full development, which, with her assistance hereafter, must render her the nearest and most convenient depot to the trade of the largest commercial circle that is connected with any city in the Union.—These facts may be now read on the face of the map of the United States.

That map will show us, that the city of Baltimore is the nearest sea-port to the country watered by the Susquehanna and its tributaries;—the most accessible, whether by land or water. Situated near the head of the Chesapeake Bay, a navigation of four hours opens to it the mouth of this great river. A land carriage of three hours and a half, easily accomplished on a line of railroad, equal to any in the United States, as the undersigned have experienced, places the traveller from Baltimore in the most busy, populous and productive portion of

* Strictly speaking the direction at the second meridian is not absolutely the initial direction. The straight lines may nevertheless be regarded as giving the sensibly correct path of the pendulum.

the Valley. This is accomplished in a journey of eighty-three miles to Harrisburg.

At the distance of one hundred and sixty-one miles from this point, the Erie railroad—the last and most extensive work of the state of New York—intersects the line of the valley at the town of Elmira. If, therefore, we add the eighty-three miles to Harrisburg to the one hundred and sixty-one from that point to Elmira, we have two hundred and twenty-four miles as the distance from Baltimore to the most convenient intersection of this recent great improvement in New York.

The Erie railroad, including twenty-five miles of navigation on the Hudson, reaches Dunkirk on Lake Erie at the distance of four hundred and sixty-seven miles from New York. Elmira is situated two hundred and eighty-three miles from the same city, and one hundred and eighty-four from Dunkirk. The distance, therefore, from Baltimore to Dunkirk, by way of Elmira, (being two hundred and forty-four miles added to one hundred and eighty-four,) is four hundred and twenty-eight miles, and our city is consequently thirty-nine miles nearer to Dunkirk than the city of New York by its recently constructed Erie Railroad.

The citizens of Buffalo have lately engaged in the construction of a railroad to connect that place with the Erie road. This work is now hastening towards completion under an active and efficient management. It is laid off to intersect the Erie road at the town of Hornellsville, which is fifty-nine miles west of Elmira. The distance from Hornellsville to Buffalo is ninety miles, and from Elmira to Buffalo one hundred and forty-nine miles. Buffalo, therefore, by this route, is three hundred and ninety-three miles from Baltimore, and four hundred and thirty-two from New York.

The distance from New York to Buffalo, by the Albany route, is four hundred and seventy-eight miles, having one hundred and fifty miles of water carriage on the Hudson river, and three hundred and twenty-eight miles on the railroad; thus making a difference of eighty-five miles in favor of the city of Baltimore.

The Chemung railroad runs due north from Elmira to the Seneca Lake, at Jefferson, twenty-one miles, whence there is a steamboat communication to Geneva within three hundred and five miles of Baltimore.

The great object which may be expected at present to occupy the attention of this city, is a consideration of the means of completing the connexion between the northern terminus of the York and Cumberland road to Elmira. We turn, therefore, to what is done, and what is proposed to be done in regard to this enterprise.

From Elmira to Williamsport, on the Susquehanna, is seventy-four miles. A company is now at work in the construction of the best railroad that can be built between these two points. We understand that a contract has been made to complete it in the next two years; and as it is now in a course of industrious prosecution, there is little room to doubt that it will very soon be brought into full operation. This leaves, as the only link to be provided for, the space between Harrisburg and Williamsport, to which the charter recently granted by the Legislature of Pennsylvania applies, and in pursuance of which charter it was the object of the convention at Sunbury to organize a company and commence the work. The whole extent of the road embraced by this charter, is about eighty-seven miles, commencing at the northern terminus of the York and Cumberland road, and ending at Williamsport. The track, throughout its entire course, will occupy the margin of the river, which is singularly well adapted to a level, cheap, and easily constructed road. The first division of this road will reach from the York and Cumberland road to Sunbury, about forty seven miles; the second will extend from Sunbury to Williamsport, a distance of about forty miles.

The citizens of Baltimore are invited and expected to unite with the inhabitants of that portion of the State of Pennsylvania which is interested in the work, in the construction of this first division to Sunbury. We are sure that the second division, from Sunbury to Williamsport, will be taken in charge by those who reside in the region, and will be effectually prosecuted by them to its completion. So far, therefore, as Baltimore is invoked to this

task, the whole enterprise is confined to the first division. It is supposed that the entire amount required for the completion of this division, will not exceed \$12,000,000. This amount, or whatever may be the cost, will be derived from subscriptions to the stock, to which, we are informed, liberal contributions will be made by the towns, the various mining companies, and the inhabitants interested in the construction of the road. It is particularly to be noticed that this division, in its short progress to Sunbury, will intersect, and most probably pass through, the depots of four lateral railroads, connected with as many of the most valuable coal mines of Pennsylvania. The Dauphin, the Lykens Valley, the Trevorton and the Shamokin coal mines are familiar to our population, as amongst the best in the country; and it is a most satisfactory and encouraging fact, that the projected road will, in the space of forty miles, receive the tribute of the trade and business connections of each of these establishments in succession. How far such a relation of these mines alone would justify the enterprise in hand, we leave without comment to the judgment and experience of our fellow citizens. The coincidence of such a resource, so conveniently adapted to the trade of the proposed road, may warrant the expectation that Baltimore may become as large a coal market as any other in the Union.

New York.

Mohawk Valley Railroad.—We have received a copy of the report of the survey, and estimate of cost, of the above road.

The proposed line is to extend from Schenectady to Utica, a distance of 78 miles. The surveys were made under the direction of E. H. Brodhead, Esq., Chief Engineer, assisted by W. B. Brinsmade and S. Whipple, Engineers.

The following is a general summary of the cost of the road.

Grading, masonry and bridging of the eastern division, extending from Schenectady to Canajoharie, 38 miles.....	\$470,959 97
Extending from Canajoharie to Utica, 40.3 miles.....	440,047 65
Superstructure for 81 miles, which includes the necessary turnouts, tracks in depot buildings, etc., at \$7,500 per mile.....	607,500 00
Land and damage.....	240,000 00
Fence, at the rate of \$700 per mile....	54,600 00
Station buildings and water stations.....	50,000 00
Equipment.....	203,000 00
Engineering and superintendence....	60,000 10

Total cost of the road graded complete for a double track, with a single track, and the necessary turnouts laid.....	2,126,107 62
Add for a second track superstructure.....	580,000 00

Total cost of the road complete, with a double track superstructure.....	2,706,107 62
If we adopt the line on the north side of the canal, from a point, 1.10 miles east of Schoharie to the "Big Nose," the cost will be reduced by.....	26,742 00

Making the total cost, with double track.....	2,679,365 62
If a single track were laid down in the first place, it would not be necessary to put on the gravel for the second track, until the company were ready to lay it down, this would reduce the first cost of a single track as follows: The cost of a single, with grading for a double track, as above.....	2,126,107 62
Deduct for graveling for a second track, included in the above estimates for grading.....	99,286 00

Total.....	\$2,026,821 62
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The grades of the line are favorable; in no case exceeding 21.12 feet to the mile. The maximum

grade is encountered for only 6½ miles. For thirty miles, the road will be level, and most of the grades are less than 16 feet per mile.

The whole cost of the road with a double track, is estimated at \$26,000 to the mile. This estimate compares favorably with the cost of most of our northern roads.

The line will probably occupy the south bank of the Mohawk for its whole distance. Assuming the estimates to be correct, the route must be a favorable one. Its general characteristics will be readily seen by a person travelling upon the opposite bank of the river.

The first obstacle of a serious nature met with, is Flint Hill, which, to copy from the report of the Engineer, is a "ledge of rocks running parallel with the canal for about one-fourth of a mile, its surface is about 32 feet above the water in the canal, and above the grade of the road about 22 feet at the highest point. The direction of the ledge being very straight, and being exactly in the course the line must pursue, enables us to run the line so as greatly to reduce the *through* cutting, simply requiring a step as it were in the face of the rock, to receive the road. The whole quantity of rock to be excavated is 35,000 cubic yards."

The second obstacle of magnitude is at "Yankey Hill." As the navigation of the canal at this point has frequently been interrupted by slides from the high bank on its southern side, the Engineer states that a similar difficulty had been anticipated with railroads. Mr. Brodhead states that the slides have been caused by the bank not having a sufficient slope; that by grades, the deep cutting can be avoided on the railroad, which was indispensable on the canal, and that consequently the difficulties here can be easily surmounted. No other obstacle, says the report, of any considerable magnitude, occurs till the line reaches the *rock* at Little Falls. In relation to this part of the line we copy as follows:

"From Fink's Basin to the lower lock at the falls, a distance of 4,200 feet, the line is upon a table or terrace in the rocky slope of the valley, which is of sufficient width for the road, and is well situated, both as to the grade and line of the road, requiring, as may be seen by the inspection of the profile, very little excavation of rock or embankment to form the road bed. This terrace is elevated about 18 feet above the water in the canal.

From the lower to the upper lock, the length is 2,400 feet, of which 1,800 feet is principally rock excavation, and the balance, 600 feet, is embankment. This comprises all the line at Little Falls. Of the 1,800 feet, one half is a thorough cut, averaging 40 feet in height, and the other half is mainly side excavation, which will cost about two-thirds as much as the former. In curving around at the falls, we have adopted for the estimates, a radius of 1,500 feet, which, as I have already stated, is the smallest upon the line. If for a portion of the distance a curve of 1,000 feet radius should be adopted, it would reduce the cost \$11,675. On the opposite side of the valley, the Utica and Schenectady road has a curve of 720 feet radius, combined with a grade of 24 feet to the mile; while the curve of 1,500 feet radius which we have adopted, is mostly upon a level grade."

Assuming, therefore, the correctness of the estimates, there can be no objection to the road on the ground of its cost. The more important question is, will it *pay*? for if built, it must come into direct competition with a parallel road for travel, and the canal for freight.

We all know that the Mohawk valley is the key to the commerce of this country, and that the railroad from Albany to Buffalo is the greatest route for passenger travel to be found in the United

States. In reference to the travel over this route, we copy the following particulars from the report, showing the income of the Utica and Schenectady since that road was built:

The Utica and Schenectady railroad was put in operation in August, 1836; from that time to the close of 1840, four years and five months, the receipts of the road, from passengers and U. S. mail amounted to.....\$1,567,062
From 1841 to 1845, both inclusive, five years, the receipts from passengers and mail, and \$51,171 received for carrying freight, amounted to.....1,773,578
From 1846 to 1850, five years, from passengers and mail.....\$2,583,626
Freight.....931,780
3,515,406

Total receipts.....\$6,856,046
Expenditures for the same period.....2,637,842

Excess of earnings over current expenses in about fourteen years.....\$4,218,204

This road, 78 miles in length, was constructed and put in operation for a million and a half of dollars. Since its commencement a double track has been laid, so that in starting an account between the instalments paid to the company, and the dividends paid by the company to the stockholders, and computing the interest on the payments, on each side, at seven per cent per annum, up to February 1, 1851, and including the dividend made on that day, the result is as follows, viz:

Amount of instalments paid in....\$4,124,000 00
Interest on same to February 1, 1851. 2,317,316 38

Total.....\$6,441,316 38
Dividends paid to, and including February 1, 1851.....\$4,227,900 00
Interest.....1,577,806 90
5,805,706 90

Dividend and interest less than instalments and interest.....\$635,609 48

There is in the hands of the stockholders, stock to the amount of \$4,124,000. If the above balance of \$635,609 48 be deducted from the total amount of stock, it shows that the shareholders have received back all the principal moneys paid to the company, with interest thereon, at 7 per cent., and are now the owners of a clear surplus in stock equal to \$3,488,390 52. In addition to this, the stock of \$4,124,000 is selling in market at an average premium of 26 per cent., so that the shareholders, by selling their stock, could realise, after the return of all sums paid by them, and 7 per cent. for its use, a clear net surplus of more than four millions and a half of dollars.

A subscriber for 100 shares in 1833, equal to \$10,000, and who had paid thereon in cash \$7,500 up to July, 1836, in the manner stated in the first part of this report, if he had retained all the stock given to him by the several increases, would now be the owner of 225 shares, equal to \$22,500. By selling these shares at the present market price, and making allowance for his proportion of the difference between dividends and instalments, as before given, he would realise a net surplus of \$23,287: besides having received, in dividends, an amount equal to the whole sum paid on calls of stock, with interest thereon, at 7 per cent. per annum, from the date of each payment.

There is no case of a public work on this continent which has yielded profits equal to this, or come near it, except the Erie canal, which passes through the same valley, and draws its revenue from the same sources.

These are the results of a railroad on the great central thoroughfare, from the western lakes to the Hudson. The Erie canal, stretching the whole distance from Lake Erie to tide water, gave a net revenue for the last year, equal to the interest at 6 per cent on a capital of nearly forty two millions of dollars. This canal originally cost a little more than seven millions of dollars; there has been expended for construction, on its enlargement, sixteen millions, making a total outlay of about twenty-three millions of dollars. Assuming that about one third of the expenditure on the enlargement is

unavailable, it would show that the Erie canal yields a net annual surplus of about fifteen per cent on its cost. The net surplus of 1836, the year in which the railroad was put in operation, and before any progress had been made in the enlargement, was more than 18 per cent on the original cost of the Erie canal.

As the canal and the proposed road will occupy the same side of the river, a large local business is anticipated from the numerous villages to which the former has given birth. In case of accident to the canal, freight could be readily transferred to the railroad, as could all freight caught in the ice at the close of the season.

It is estimated that at least \$500,000 can be raised on the line of the proposed road. The balance is to be provided by other subscriptions, to be obtained, we presume, chiefly in this city, and by the issue of bonds.

The report of the directors, prepared by their president, Hon. A. C. Flagg, and also that of the chief engineer, E. H. Brodhead, Esq., are able and interesting documents. Mr. Flagg's long and intimate connection with the public works of our State, renders everything coming from his pen worthy of attention.

Increase of Banking Capital in Massachusetts.

In addition to the free banking law, the Legislature of Massachusetts, at its late session, made the following additions to the banking capital of that state:—

NEW BANK CHARTERS GRANTED IN MASSACHUSETTS.

Name.	Location.	Capital.
Hadley Falls Bank.....	Holyoke.....	\$100,000
Westfield Bank.....	Westfield.....	100,000
Cambridge Market Bank.....	Cambridge.....	100,000
Faneuil Hall Bank.....	Boston.....	500,000
Blackstone Bank.....	Boston.....	250,000
Essex Bank.....	Haverhill.....	100,000
Mechanics Bank.....	Worcester.....	150,000

CAPITALS INCREASED.

Boston.

Exchange Bank.....	\$500,000
Shoe and Leather Dealers.....	250,000
Granite.....	250,000
Cochituate.....	100,000
Tradesmens, Chelsea.....	50,000
Prescott, Lowell.....	50,000
Quinsigamond, Worcester.....	50,000
Merchants, N. Bedford.....	200,000
Commercial, ".....	200,000
Marine ".....	200,000
Adams Bank.....	50,000
Worcester Bank.....	50,000
Traders Bank.....	200,000
Freemans.....	50,000
Bank of Commerce.....	750,000
Boylston.....	50,000
Lancaster Bank.....	25,000
Fall River Bank.....	50,000
Warren, Danvers.....	60,000
Lee Bank.....	50,000
Barnstable Bank.....	100,000
Agricultural, Pittsfield.....	50,000
Laighton, Lynn.....	50,000
Bay State, Lawrence.....	200,000
Milford Bank.....	50,000
Rollstone, Fitchburg.....	100,000

Flood on the Wabash.

Our exchanges from every part of the Wabash country speak of the heavy rains which have fallen lately. The Wabash is at flood height, and immense destruction of property has ensued. Our last reports were of a continued rise. The Wabash canal has suffered greatly. One aqueduct is gone, 15 miles east of Huntington, and another 6 miles east of the same place. Another is injured between Peru and Huntington, and there is a break between Logansport and Toledo. The Wabash

river is very high, threatening the destruction of the aqueducts and bridges at Logansport.

Illinois Canal.

The two trustees of the Illinois canal fund, David Leavitt and Wm. H. Swift, have been re-elected. At the annual sale of canal lands, the prices obtained showed a considerable advance over the last sale, being an average of about 15 per cent.—The amount realised exceeds two hundred thousand dollars, which added to the increased receipts on the canal, will enable the trustees to pay the semi-annual interest on the loan, due in October, and 21 per cent of the principal.

American Sea Steamers.

We copy from the Tribune the following list of American sea steamers—their tonnage, routes, and present location or destination. It offers a striking picture of the degree of development to which this important branch of our commercial marine has attained:

ATLANTIC STEAMERS.

Between New York and Liverpool.

COLLINS' LINE.

Atlantic.....	West.....	2,771 tons.
Arctic.....	Luce.....	3,000 "
Baltic.....	Comstock.....	3,000 "
Pacific.....	Nye.....	3,000 "

Between New York and Havre.

M. LIVINGSTON.

Franklin.....	Wotton.....	2,300 tons.
Humboldt.....	Limes.....	2,500 "

Between New York and Bremen, (via Southampton.)

MOLLER, SAND & RIERA.

Washington.....	Floyd.....	1,700 tons.
Hermann.....	Crabtree.....	1,800 "

Between Philadelphia and Liverpool.

J. G. WILLIAMS, 188 Front st., New York, Agent.		
Lafayette.....	Goddard.....	1,200 tons.

Between New York and New Orleans.

SPOFFORD, TILESTON & CO.

Union.....	Budd.....	1,400 tons.
Winfield Scott.....	Couillard.....	1,300 tons.

Between New York and Charleston.

SPOFFORD, TILESTON & CO.

Southerner.....	Dickinson.....	795 tons.
Marion.....	Berry.....	900 "

Between New York and Savannah.

S. L. MITCHELL.

Alabama.....	Ludlow.....	1,500 tons.
Florida.....	Lyon.....	1,500 "

Between Philadelphia and Charleston.

Albatross.....	Noble.....	645 tons.
Ospray.....	Murden.....	700 "

Between Charleston and Havana, (via Key West.)

Isabel.....	Rollins.....	1,115 tons.
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Between New Orleans and Vera Cruz.

Alabama.....	Foster.....	676 tons.
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Between New Orleans and Galveston.

Louisiana.....	Lawless.....	1,100 tons.
Galveston.....	Place.....	550 "
Pampero.....	Hunter.....	379 "

Between New York and Cragres.

Ohio.....	Schenck.....	2,462 tons.
Georgia.....	Porter.....	2,591 "
Empire City.....	Wilson.....	1,751 "
Crescent City.....	Tanner.....	1,800 "
Cherokee.....	Windle.....	1,250 "
Brother Jonathan.....	Stoddard.....	1,400 "
El Dorado.....	Wright.....	1,000 "
Prometheus.....	Johnson.....	1,400 "
North America.....	Blethen.....	1,500 "
Philadelphia.....	Pearson.....	897 "

Between New Orleans and Chagres.

Mexico.....	Talbot.....	1,200 "
Falcon.....	Hartstein.....	1,000 "

PACIFIC STEAMERS.*Between San Francisco and Panama.*

On the 1st and 15th of each month.

Oregon.....	Pearson.....	1,050 tons.
California.....	Budd.....	1,100 "
Northerner.....	Randall.....	1,000 "
Republic.....	Hudson.....	1,200 "
Tennessee.....	Totten.....	1,250 "
Panama.....	Watkins.....	1,100 "
Columbus.....	Hitchcock.....	600 "
New Orleans.....	Wood.....	761 "
Antelope.....	Hickley.....	650 "
Fremont.....	Ottinger.....	576 "
Isthmus.....	Whiting.....	380 "
Constitution.....	Bissell.....	530 "
Carolina.....	Whiting.....	545 "
Ohio.....	Ray.....	225 "

Between San Francisco and Oregon.

Gold Hunter.....	Hall.....	400 "
Sea Gull.....	Eyre.....	267 "
Columbia.....	Le Roy.....	700 "
Com. Preble.....	Ballard.....	280 "

Between San Francisco, Gold Bluff and Trinity Bay.

Chesapeake.....	Hunt.....	392 tons.
Gen. Warren.....	Smith.....	309 "
Goliath.....	Thomas.....	334 "
Eudora.....	Barkman.....	400 "

Between San Francisco and Sacramento City.

New World.....	Hutchings.....	600 tons.
Confidence.....	Gannett.....	370 "
West Point.....	Kelsey.....	225 "
Senator.....	Van Pelt.....	750 "
Independent.....	Cook.....	700 "
Monumental City.....	Morris.....	1,000 "
Sea Bird.....	Tucker.....	480 "
Union.....	Marks.....	560 "
Com. Stockton.....	Baker.....	500 "
New York.....	Averill.....	800 "
Washington.....	Bonney.....	1,000 "
W. J. Pease.....	Jessup.....	314 "
Pacific.....	Bailey.....	1,000 "
Fanny.....	McCerran.....	680 "
Pioneer.....	Eldridge.....	2,000 "
Wils. G. Hunt.....	Spall.....	297 "
Chesapeake.....	Hunt.....	400 "
Gen. Warren.....	Smith.....	400 "

Virginia.

Greensville and Roanoke Railroad.—By the report of the proceedings of the 17th annual meeting of the stockholders of the Greensville and Roanoke railroad company, held on the 16th ult., we learn that H. D. Bird was unanimously re-elected President, and A. G. Mellwaine, John Bragg, B. H. May, Robert Leslie, and Edmund Wilkins, Directors. The meeting give it as their opinion that it is of the utmost importance that the stockholders of their company should subscribe to the stock of the Raleigh and Gaston railroad company.

Mr. Bird, the President, on behalf of the directors of the Greensville and Roanoke road, reports for the fiscal year ending on the 30th of April, 1851, the receipts \$37,461, and the expenses \$22,829—making the net income \$14,631. This, with the addition of the surplus on hand, made the sum applicable to dividends \$16,421. Out of this a dividend of seven and a half per cent has been declared, leaving a surplus in hand of \$1,421. The falling off in freights during the year was \$4,211, but the gain in passengers \$1,908—making the net falling off in receipts from the previous year \$2,302. This decline is mainly attributable to the short crop of tobacco. Mr. Bird states that the Petersburg commissioners are still soliciting subscriptions for the purpose of re-building the Raleigh and Gaston road, but owing to the numerous heavy demands that have of late been made upon the people of Petersburg for other works, the subscription list fills up slowly. Mr. Bird strongly urges the stockholders of the Greensville and Roanoke road, who have not as yet subscribed to the stock in the new company, to come forward now and do so. Besides securing the prosperity of their

own road, he thinks that they will be also making a profitable investment.

The capital of the Greensville and Roanoke road is \$200,000. The debt has been all paid off, and the cost of the road reduced to the amount of the capital. The committee of examination report the road to be in good order, and recommend that measures be taken to have the track laid down with T rails, which they think will establish the prosperity of the road on a permanent basis.—*South Side Democrat.*

The following are claimed to be the distances on the Baltimore and Ohio railroad and the Mannasses Gap railroad respectively, from Alexandria and Baltimore.

Baltimore to Cumberland.....179 miles.
Cumberland to Tygart's Valley bridge.....101 "

Distance.....280 "
Alexandria to Strasburg.....93 miles.
Strasburg to Paddy Town.....60 "
Paddy Town to Tygart's Valley bridge.....81 "

Distance.....234 "

It will be thus seen that the distance to a common point of junction is 46 miles in favor of Alexandria.

At the annual meeting of the stockholders of the Detroit and Lake Superior Smelting and Mining company of Michigan, held in Detroit on Monday, May the 27th, the following persons were elected officers for the ensuing year:

S. McKnight, President.

Directors—C. A. Trowbridge, Robt. J. Graverout, Andrew Harvie, H. N. Walker, George R. Griswold.

Massachusetts.

Grand Junction Railroad.—At the annual meeting of the stockholders of this corporation, held at No. 1 Commercial wharf, on Friday afternoon, the list of directors was elected: Samuel S. Lewis, David Henshaw, Charles Paine, Ichabod Goodwin, and John W. Fenno. A report from the engineer was read, which stated that the road would probably be completed by July. At a subsequent meeting of the directors, S. S. Lewis was chosen President, D. Brigham, Jr., Treasurer, and J. P. Robinson Clerk.

Pennsylvania.

Sunbury and Erie Railroad.—The Philadelphia papers state that the ceremony of breaking ground on the line of this important railroad was performed on the 20th ult, near Farransville, Clinton Co., Pa., by the President of the road, in the presence of Judge Giles, of Elk, and Gen. Flemming, of Clinton, Directors, and a number of other gentlemen. A contract was made immediately for grading a portion of the work.

New York.

Rome and Cape Vincent Railroad.—The road from Rome to Cape Vincent was opened on Tuesday to Pierrepont Manor, 58 miles from Rome.—The Utica Gazette says:

The road was commenced in 1849. From Rome to the extreme terminus of the road, Cape Vincent, is 96 miles, running through a thickly settled country, which is quite productive, and embracing a population of some 120,000. From Rome to Pierrepont, the present terminus, is 53 miles. The road runs 26½ miles through Oneida county, 22 through the eastern part of Oswego, and about 5 or 6 into Jefferson county. The continuation will carry it about 43 miles, and will form a connecting link between the great commercial emporium of this State, and the dominions of the Queen, thus bringing the 700,000 inhabitants of Canada West, through the medium of Kingston, into most desirable business and social connection with the States.

The original hopes of the projectors of the road are fully sustained by the great success of the small portion already opened. As an item of its business, we will state that 200,000 feet of lumber are daily transported over it, and one establishment at Cassoag, in Oswego county, send to market over it daily 1000 barrels. The intention of the directors is that at or about the time of the completion of the road to Watertown, which will be near the end of August, the further portion to Cape Vincent shall also be finished. For the promotion of this result, the iron for that end, amounting to about 3,000 tons, will be delivered at Quebec, Chaumont Bay and Sackett's Harbor. About 750 tons were landed at the latter port day before yesterday. It is furnished at forty dollars per ton.

Maryland.

We copy from the Cumberland Civilian the following items in reference to the movements in that quarter:—

Railroad Extension.—The work on the extension of the Mount Savage railroad to Frostburg, will be commenced about the first of June, and will be vigorously prosecuted to completion.

Steam on the Canal.—The steam tow boat Virginia left this place on Tuesday evening last at five o'clock, having her three barges in tow, each laden with eighty-five tons of coal from the mines of the Frostburg coal company. She goes directly to New York by the Chesapeake and Ohio, the Chesapeake and Delaware and the Delaware and Raritan Canals.

The amount of coal shipped by the Canal this week was 2,136 tons, and by the Baltimore and Ohio railroad, 3,071 tons.

Ohio.

Cleveland and Pittsburgh Railroad.—The business on the Cleveland and Pittsburgh railroad, since it has been in operation, has much more than met the expectations of the most sanguine. Ten weeks of business have just closed, and in that time there has passed over the road 13,263 passengers. The freight business amounts, in the same length of time, to over \$7,000.

This, when it is considered that the road is in operation but thirty-eight miles, is probably without a parallel.

The business of the road is steadily and rapidly increasing, and promises a handsome return to those that have engaged in the enterprise.

The work south is fast progressing. The grading is nearly all completed, and about eight miles of track is laid south of Ravenna, and the gang are putting down a half mile of iron per day.—*Portage County Whig.*

Scioto and Hocking Valley Railroad.—The following gentlemen have been chosen directors of the above road the present year, viz:—

C. A. M. Damarin; J. V. Robinson; J. L. McVey; P. Kinney, Scioto County; Francis Campbell, Ross County; and Israel Dille, Licking County.

Louisiana.

Extension of the Carrollton Railroad to the Lake.—For some time past the Carrollton railroad company have been steadily engaged in pushing forward an extension of their line from Carrollton to Lake Pontchartrain, and the road has at length been cut through to the point where it is intended to strike the lake shore. The gradings of the line are nearly complete, and the work is at the present time progressing fast. A few days ago a number of men were set to work, under the active superintendence of Mr. J. Hampson, to lay down the rails. They commenced at the Carrollton railroad depot, and between one hundred and two hundred yards of the track was laid on Saturday evening. The road is intended to pass through Levee street, in the town of Carrollton, and to run parallel with the river as far as Upper Line street, from which place it will branch off to the lake, and strike the shore at a point about six hundred yards from the hotel at the end of the Shell Road, making the whole distance about five miles. When completed, which will be in the course of a few months, the road will be of great service to Carrollton, as well as to the upper portions of Jefferson city and Lafayette, and every credit is due to the company, for the steady manner in which it

has carried out the work. The grade of the road is sufficiently high to protect it from injury by crevasses, which may occur above Carrollton, and when the embankment is finished to the Metairie Ridge, it will be impossible for it to be injured from the overflowing of the river, or from breaks in the Levee.—*Crescent City.*

New Hampshire.

Concord Railroad.—The annual meeting of the Concord railroad corporation, was holden at Nashville on Tuesday last. Isaac Spalding, Josiah Stickney, Charles H. Peaslee, Robert Read, Uriel Crocker, Emmons Raymond, and Robert McGaw, were chosen directors for the ensuing year. At a subsequent meeting held by the directors, Isaac Spalding was chosen President; N. P. Lovering Treasurer; and John H. George, Clerk. It appears from the report that the total receipts for the year was \$307,862 72. The expenditures were \$170,896 32. Balance of receipts over expenditures, \$136,966 40. The receipt of the Manchester and Lawrence railroad—now leased by the Concord—for the last six months, was \$37,679 72.

Boston, Concord and Montreal Railroad.

The annual meeting of the Boston, Concord and Montreal Railroad, says the Boston Courier, was held at Wentworth on the 27th. The board of last year were re-elected without opposition. It was voted unanimously to complete the road to Wells River, and \$600,000 six per cent. preferred stock was voted for that purpose. Subscriptions are to be opened immediately for \$200,000 of this stock, and for each share taken the subscriber has the right to exchange one of the existing shares for a preferred share. Subscriptions will be received from any person, but the right is reserved to each stockholder to claim his proportion. With this sum and the other \$200,000 of the stock, it is estimated the remainder of the road can be built. The old shares are to receive annual interest, in stock, as heretofore, until the completion of the road, and the dividends on the preferred shares are payable in May and November in each year.

The effect of this arrangement is advantageous to the old stock, and the bonus given by the conversion must secure the subscription of the \$200,000 at once. The cost of the entire road, as stated at the meeting, including \$150,000 of stockholders' interest, will be \$2,250,000, represented by about \$1,150,000 on old stock, and \$1,100,000 preferred stock and bonds; and the net income, when completed, is estimated at least \$150,000, which is more than the interest on the entire cost. The road is expected to be completed during the next year.

South Carolina.

Kings Mountain Railroad.—The object of this road is to connect Yorkville, the county town of York District, with the Charlotte and South Carolina railroad at Chester Court House, by a line of 22 miles. The grading of this road is nearly completed, and will soon be in readiness for the iron, which has been purchased, together with a portion of the machinery. The route is a very favorable one, and the whole cost of the road, equipped, will not exceed \$10,000 to the mile. It is built by a few wealthy citizens of York and the vicinity, for the purpose of connecting themselves with the great lines of railroad reaching to Charleston. The want of suitable facilities for sending their produce to a market, has been felt to be a serious evil in the northwestern portion of South Carolina. This will soon be removed by the various roads now in progress in the interior. The Kings Mountain railroad will supply to the portion of South Caro-

lina that it traverses, and to the western part of North Carolina, what has long been wanting to the proper development of that interesting and fertile portion of the country, and will attract to itself a large trade. As for its appropriate business, it is without a rival. It will render Yorkville a depot for the trade of a large section of country.

Ohio.

Central Railroad.—Very rapid progress is making in the preparation of this road for the iron, the laying of which is to commence in July next, probably on the 4th, between Zanesville and Newark. The completion of this link will bring the pioneer city into direct railroad communication with Sandusky and Cleveland. The whole of this road is being pushed with great vigor, and there is a strong probability that it will be completed by the time the Baltimore and Ohio railroad reaches Wheeling, so as to form, in connection with the two, a continuous line from Baltimore to the western part of Ohio, and to Cincinnati.

Nashua and Worcester Railroad.

At a recent meeting of the stockholders in this road, the following persons were chosen directors for the present year, viz: Daniel Abbot of Nashua, Thomas B. Wales of Boston, Jesse Bowers of Nashua, Wm. Boardman of Nashville, Wm. Amory of Boston.

Ashuelot Railroad.

From the report made at the last meeting of the Ashuelot railroad company, it appears that the length of the main track is twenty-three and three-quarters miles; length of sidings, one and one-half miles; weight of rail per yard, fifty-eight pounds; maximum grade, thirty-four and one quarter feet; maximum grade in length, 225 rods; average grade per mile, eighteen feet. Total rise in road, 108 feet; total fall, 321 feet; shortest radius of curvature, 910 feet; total length of curve in road, seven and three-quarters miles; total length of straight line, fourteen miles; aggregate length of wooden truss bridges, 1,223 feet; number of public ways crossed at grade, nineteen; number of stations five. The whole cost of the road, as near as can be ascertained, will not vary much from \$510,000.

New York.

Railroad from Canandaigua to Niagara Falls.—The route of this road has been surveyed, and we learn that a report of the same will be published in a few days. The distance to the Suspension Bridge at Niagara Falls is reputed to be 92 miles from Canandaigua, over 80 per cent. of the distance is composed of straight lines, with grades at no point as high as forty feet, and an average grade of only 17 feet per mile. It is also stated that the last thirty miles or so of the route, is perfectly straight and perfectly level. As soon as we receive a copy of the report, we shall give a more detailed notice of the survey.

East Tennessee and Virginia Railroad.

The directors of this company are about to put 45 miles more of road under contract, commencing at the Virginia State line, and extending to Rhea-ville, in Greene county. The lettings are to take place in October.

This will leave 40 miles only of the road not under contract, viz: from Knoxville to the section of 40 miles recently let to Mr. Furgerson, 15 miles; and 25 miles necessary to connect Furgerson's division with the one above named. The whole line of the road is about 125 miles. It is the intention of the directors to have the work of the above road

advance *pari passu* with that on the Virginia and Tennessee road. This road will open an outlet on the north. On the south a connection will be formed with the East Tennessee and Georgia road. As the East Tennessee and Virginia is the connecting link between the two, it cannot be brought into profitable use till these are completed.

When all the above roads shall be opened, a continuous line of railway will be formed, connecting the extremes of our country, and running through a section probably the most attractive for its natural scenery, and for its mineral and agricultural resources, that can be found for an equal distance throughout our widely extended domain.

Pennsylvania.

Sanbury and Erie Railroad.—The Philadelphia American states that the ceremony of breaking ground on the line of this important railroad, was performed on the 20th instant, near Farransville, Clinton County, Pa., by the president of the road, in the presence of Judge Giles, of Elk, and Gen. Flemming, of Clinton, directors, and a number of other gentlemen. A contract was made immediately for grading a portion of the work.

Railroad to the Pacific.

The New Haven Palladium publishes an interesting letter from Forest Shepherd, Esq., written at Sacramento City, and chiefly descriptive of the topography and geological wonders of California. He says that it is now ascertained almost beyond doubt, that a Railroad can be constructed from the Mississippi to the Pacific, without crossing any mountains, or without meeting more impediment from snow than would a road from Albany to Boston. He gives the following sketch of the route:

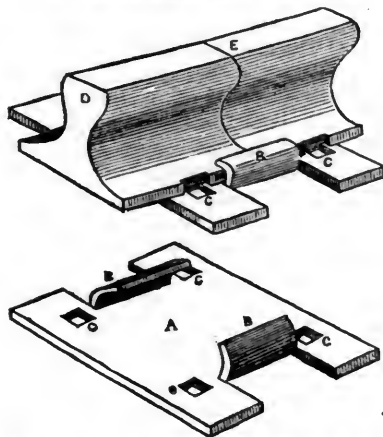
This route is from the head or southern portion of Tulare valley, through Walker's pass, thence to the Mojave river, thence north-eastward to high grounds on the tributaries of the Rio Colorado, thence crossing said river above the great Canon, thence east to Pilot Mountain near Santa Fee, passing Pilot Mountain on the north side, thence to Santa Fee and the Mississippi at Apple Creek below St. Louis, where there is a good landing and open navigation to New Orleans through the winter, and of course a road on the bank of the Mississippi to St. Louis. This route will be 600 or 800 miles nearer than any other, has wood and water nearly the whole distance, and abundance of stone and coal at Santa Fee. The above route will accommodate both north and south, New Mexico and California, and ocean steamers will soon render a trip from San Francisco to Astoria as light a matter as at present from Buffalo to Chicago or Mackinaw. The route further north is very objectionable on account of the snow on the table lands on the head waters of Feather river. I have travelled over snow, apparently undrifted, varying from twelve to twenty feet in depth, in the month of June.

Missouri.

Railroad from St. Charles to Alton.—The St. Louis Intelligencer states that efforts are making to build a railroad from St. Charles to Alton. The distance is only about 16 miles, and the route will be through a rich country, highly favorable to the construction of the road. The citizens of Alton, and those who are interested in the Alton and Springfield road, have given much encouragement to the enterprise, and will probably take stock liberally.

The Intelligencer says the road will be built, unless immediate steps are taken to build one from St. Louis to St. Charles, and urges the importance of the latter to the interest of St. Louis. The distance between the last point is about 20 miles, and the road it is estimated would cost \$400,000.

The American Railroad Chair Manufacturing Co.



ARE prepared to make **WROUGHT IRON RAIL ROAD CHAIRS**, of various sizes, at short notice.

By use of the **WROUGHT IRON CHAIR**, the necessity of the wedge is entirely done away—the lips of the chair being set, by means of a sledge or hammer, close and firmly to the flange of the rail.

The less thickness of metal necessary in the **Wrought Iron Chair** gives much greater power and force to the spikes when driven—and consequently a much less liability to the spreading of the rails by reason of the spikes drawing or becoming bent.

The less weight necessary in the **Wrought Iron Chair**, will enable us to furnish them at a cost much below that of **CAST IRON CHAIRS**.

DESCRIPTION OF THE ABOVE CUTS.

Figure 1 is a perspective view of the rail secured in the chair, and fig. 2 is a perspective view of the chair itself. D, E, are sections of two rails placed together, and secured at the joint on the chair by the jaws B, B. The chair is bolted down by spikes C, C. In fig. 2, the chair is represented as made of a single block or plate A of wrought iron.

The chair is set in its proper place on the track, spiked down, and the ends of the two rails brought together within the jaws as represented in fig. 1.

For further information address,

N. C. TROWERIDGE, Secretary,
Poughkeepsie, N. Y.

June 1, 1851.

Patent Excelsior Spring for Railroad Cars, Locomotives, etc.

THESE Springs, composed of Steel and Wood as described in this Journal last week, are now being manufactured and sold by the Excelsior Spring Co.—under a Patent granted on 20th May.

This is undoubtedly the best Spring of the day—it is very simple—easy of application—light—cannot get out of order—and it is without any exception the most adjustable spring now made—for it will spring 50 or 5,000 pounds with the same ease.

The cost of the springs is very much less than that of any other.

The Excelsior Spring Co., determined that every spring shall be of the best quality, have established a Factory, where each spring is made directly under the eye of Mr. Bissell, the inventor—and before a spring is allowed to leave the factory it is subjected to a much severer test than it ever can be when at work. Each Spring is guaranteed to perform the required work.

Any person infringing on this patent will be prosecuted.

Office of EXCELSIOR SPRING COMPANY.
33 Broadway, New York.

June 7, 1851.

Railway Iron.

3000 TONS, 50, 57, and 60 lb. Rails, made of best English Iron and under particular specifications.

Rails imported on commission or at a fixed price, delivered at a port in England, or at any port in the United States. Apply to

DAVIS, BROOKS & CO.,

June 5, 1851. 39 Beaver st., New York.

TO CONTRACTORS.

Engineer's Office, S. S. R. Road Co.
Petersburg, Va., May 27, 1851.

PROPOSALS will be received at the Engineer's office, South Side Railroad, at Petersburg, Va., until the 31st of July next, for the construction of Appomattox Bridge, to be erected near Farmville.

The Bridge will be about 3000 feet long and 80 feet high; to consist of a wooden superstructure resting on abutments and piers.

The piers will be of brick or stone, to be determined after receiving the proposals.

Good brick earth can be obtained near the site of the Bridge.

The proposals may be made for the structure complete, or for the various items of work and materials, viz.: Masonry, furnishing Bricks or Timber; workmanship of laying Bricks and workmanship of superstructure.

Security will be required for the fulfilments of the contracts, and it will be necessary that each proposal be accompanied with a letter from a responsible person or persons, stating that they will become security.

C. O. SANFORD,
Ch. Engineer, S. Side R. Road.

AMERICAN RAILROAD JOURNAL.

Saturday, June 7, 1851.

Stock and Money Market.

After a long period of comparative quiet, a strong speculative feeling has taken hold upon the market, as will be seen in the rapid rise in some of the leading fancies. This movement, to a great extent, results from the operations of speculators, and is irrespective of the real value of the stocks, in which we see the greatest advance, and interests outsiders, only as indicating an abundance of money. Money is now abundant, and there seems to be no difference of opinion of its remaining so during the season; this will enable our works in progress to take a long stride before any reverse can come. We are now under full sail, and but poorly prepared for a storm; but if our leading enterprizes can make port before the tempest breaks, we can then ride it out without injury. The present year will send us far ahead. None of our principal new works are crippled for means, but in every part of the country we witness the greatest activity and progress. The rapid increase of receipts upon all our roads has a strong tendency to strengthen public confidence in this kind of property.

Railroad bonds of the first class are more in demand at from 85 to 90 cents; but as there is every kind of security constantly pressing upon the market, prices of course vary to meet the difference in quality. The recent sales of the Seaboard and Roanoke were at a pretty high figure, but it must be borne in mind that the road is owned by a party of capitalists, and they of course will not pay any more than the market price for money. The stockholders in the road undoubtedly took a large portion of the bonds. This sale, therefore, is no standard for the bonds of other companies.

It will be seen by a list, which we give in another column, of roads in progress in this State, that the west is not the only theatre of active operations. By fall, 1000 miles of new road will be under contract in this State alone.

The rail market in England is dull at last quotations, and is likely to remain so for some time to come.

The recent sale of the bonds of the Seaboard and Roanoke attracted a good deal of attention. The amount bid for was nearly twice as much as was

needed, and the range of bids was smaller than usual, the lowest being 84.80 and the highest 90.20. The successful bids are as follows:—

15 bonds, C. C. Alger.....	90.20
2—J. H. Carter	90.06
20—Denistoun Wood & Co.....	90.00
5—J. H. Carter.....	90.00
20—F. S. Curfuth.....	90.00
5—E. Crehore.....	90.00
20—David Henshaw.....	90.00
5—J. W. Ward.....	90.00
15—Wm. Jessup & Son.....	90.00
1—Chubb, Schenk & Co.....	89.77
25—Clark, Dodge & Co.....	89.75
10—E. C. McIntosh.....	89.65
2—J. H. Carter.....	89.56
15—J. F. A. Sanford.....	89.55
2—J. H. Carter.....	89.50
15—Denistoun, Wood & Co.....	89.45
15—Wm. Jessup & Sons.....	89.10
15—Denistoun, Wood & Co.....	88.60
5—DeLaunay, Iselin & Clarke.....	89.10
2—J. H. Carter.....	89.06
25—Clark, Dodge & Co.....	89.00
4—J. H. Carter.....	89.00
10—Cooper & Hewitt.....	88.75
25—S. J. Beals.....	88.56
20—J. A. Sanford.....	88.65
10—E. C. McIntosh.....	88.50
2—J. H. Carter.....	88.50
10—Cooper & Hewitt.....	88.20
5—DeLaunay, Iselin & Clarke.....	88.10
8—J. H. Carter.....	88.00
2—P. Speyer & Co.....	88.00
2—P. Speyer & Co.....	87.75
13—Ward & Co.....	87.51

New York and New Haven Railroad.—The earnings of the New York and New Haven road in May show a continuation of the large traffic which has flowed over that road during the year. The receipts are:—

Passengers.....	\$51,971 70
Freight.....	8,000 00

Total	\$59,971 70
Paid Harlem road for 46,497 passengers	4,102 68

Net receipts.....	\$55,869 02
May, 1850.....	38,470 55

Increase in 1850 (nearly 50 per cent.)..\$17,398 47

The increase in the Harlem railroad receipts are considerable larger than was anticipated.

The figures are.....	\$58,045 54
May, 1850.....	44,446 80

Increase (over 30 per cent.).....\$13,598 74
The increase in five months is nearly..\$52,000

The earnings of the Michigan Southern railroad for May were \$24,274 72, against \$10,954 78 for the corresponding month of the last year. The earnings for the first five months of this year compare with those of the same months of 1850 as follows:—

	1850.	1851.
January	\$ 2,510 80	\$16,869 64
February.....	4,524 98	16,506 88
March	2,809 83	11,743 78
April	6,557 69	21,059 58
May.....	10,954 78	24,274 72
Total.....	\$27,358 08	\$90,454 60
		27,358 08

Increase for five months.....\$63,096 52
equal to about 230 pr. ct.

The total earnings of the road for the year 1850 were \$140,000, of which about 5-7ths accrued within the last five months of the year. Should the above ratio of increase continue during the year, the total earnings for 1851 will exceed \$460,000.

The following comparative statement shows the imports and exports from Canada to the United States, for the two years of 1849 and 1850:

Imports from U.S.....	£1,242,855	£1,648,715
Exports to ".....	857,442	1,237,789
	£385,413	£410,926
		385,413

Total increase.....£796,339

The entire imports of Canada for 1849 was £3,002,599, in 1850 £4,245,517; about one-third of the whole import was from the United States. The trade of Canada with this country is yearly increasing, and becoming of yearly importance and consideration.

The earnings of the Madison and Indianapolis road for May show a continuance of the large increase in traffic which has characterised this season. The earnings are.....\$25,500
May, 1850.....19,300

Increase.....\$6,200
For five months 1851.....\$135,150
For five months 1850.....89,100

Increase (over 50 per cent.).....\$16,050

The coinage at the Philadelphia Mint in pieces, during May, is believed to have exceeded any ever before executed at the Mint within the same time. Of all the smaller gold coins, a large amount has been accumulated beyond the demands of the depositors.

No. of pieces.	Value.
86,747 Double Eagles.....	\$1,734,940
26,695 Eagles.....	266,950
43,000 Half Eagles.....	215,000
224,676 Quarter Eagles.....	561,690
422,682 Gold Dollars.....	422,682
803,800.....	\$3,201,262
1,254,600 Three cent pieces.....	37,638
969,900 cents.....	9,699

Total.....\$3,248,599
Total Gold Bullion deposited for coinage from 1st to 31 May, 1851, inclusive:
From California.....\$3,205,600
From other sources.....65,600

Total.....3,271,200
Silver bullion deposited in same time..14,800

SALES OF STOCK IN NEW YORK.

	May 29. Sales.	June 5. Sales.
U. S '67 Loan.....	117½	116½
Erie R.R.....	88	88½
Harlem R.R.....	76½	77
Stonington.....	43½	44
L.I. R.R.....	22½	21½
Norwich & Wor....	64½	65½
Del. & Hudson.....	121½	121½
Reading.....	59	53½
Morris Canal.....	16½	16½
Erie income.....	97	97½
" " Bonds.....	103	103½
Canton.....	79	80
Farmers Loan.....	69	69½

SALES OF STOCKS IN BOSTON.

	May 28.	June 4.
Old Colony Railroad.....	67	68
Boston and Maine R.R.....	106	106½
Eastern Railroad.....	102	102½
Fitchburg Railroad.....	113	113½
Michigan Central Railroad.....	103	104
Northern Railroad.....	70½	71
Vermont Central Railroad.....	37	36½
Vermont and Mass. R.R.....	29½	29½
Western Railroad.....	106	108
Ogdensburg Railroad.....	39½	39
Rutland Railroad.....	57½	58
Boston and Worcester Railroad.....	106	106½
Rutland Railroad Bonds.....	97	97
Ogdensburg Railroad Bonds.....	97½	97½
Vermont Central R.R. Bonds.....	91½	91½
Boston and Providence R.R.....	91	92
Philadelphia, Wilm'gton & Balt.....	29½	30½
Concord R.R.....	53½	55

Railroads in New York.

The following is we believe a correct list of the railroads in New York in operation and progress, together with the length of their respective lines.

	Railroads in operation.	Railroads in progress.	Contem- plat- ed.
Albany and Schenectady.....	17	....	....
Albany and Weststockbridge.....	38½	....	....
Albany and Buffalo.....	31½	....	....
Buffalo and Niagara Falls.....	22	....	....
Cayuga and Susquehanna.....	35	....	....
Chemung.....	17½	....	....
Hudson and Berkshire.....	31½	....	....
Hudson River.....	75	68½	....
Lewiston.....	3	....	....
Long Island.....	98	....	....
New York and Erie.....	467	....	....
New York and Harlem.....	80	50	....
New York and New Haven.....	13½	....	....
Northern.....	118	....	....
Oswego and Syracuse.....	35	....	....
Rensselaer and Saratoga.....	25½	....	....
Rochester and Syracuse.....	104	....	....
Saratoga and Washington.....	39½	....	....
Saratoga and Schenectady.....	22	....	....
Schenectady and Troy.....	20½	....	....
Skaneateles and Jordan.....	5	....	....
Syracuse and Utica.....	53	....	....
Tioga.....	15	....	....
Tonawanda.....	43½	....	....
Troy and Greenbush.....	6	....	....
Utica and Schenectady.....	78	....	....
Watertown and Rome.....	58	39	....
*Albany and Northern.....	30	....	....
Albany and Susquehanna.....	130	....	....
Buffalo and State Line.....	67	....	....
Buffalo and New York.....	58	....	....
Buffalo and Conhocton Valley.....	130	....	....
Canandaigua and Corning.....	46	....	....
*Plattsburgh and Montreal.....	25	....	....
Rochester and Niagara Falls.....	74	....	....
Rutland and Washington.....	15	....	....
Syracuse and Rochester.....	80	....	....
Sackett's Harbor and Ellisburgh.....	23	....	....
Troy and Boston.....	39-9	....	....
Troy and Rutland.....	18	....	....
Canandaigua and Corning.....	92	....	....
*Catskill and Schenectady.....	40	....	....
Mohawk Valley.....	78	....	....
Syracuse and Binghamton.....	70	....	....
Sackett's Harbor and Saratoga.....	150	....	....
	1,548	894	430
	2,572		

* Estimated length.

All the above companies, with the exception, we believe, of the Syracuse and Binghamton railroad, the Canandaigua and Niagara Falls, and the Sackett's Harbor and Saratoga, are regularly organized; and all, with the above exception, either actively engaged in the work of construction, or in taking steps preliminary to commencing work.

In addition to those enumerated, other schemes will undoubtedly soon come before the public. If the Catskill road should be built, this would unquestionably lead to the construction of a road to connect that with the Erie road at some point in Orange county; thus forming a line of railroad on the left bank of the Hudson. A road is also in contemplation from some place on Lake Ontario to the central line either at Geneva or Canandaigua. A road is also projected from the Rome and Watertown road to Oswego. The Watertown road must be soon pushed on to meet the Northern road at Ogdensburg. A road will probably be soon built on the west bank of Lake Champlain, to connect Plattsburgh with Whitehall. These

will add some 300 miles to the above estimate.—New York bids fair to maintain her superiority in the extent of her railroads, as in every thing else. She is certainly superior to all her sister States in the facilities for transportation and travel with which she has furnished her people.

New York.

Buffalo and Rochester Railroad.—The annual meeting of the stockholders of this company took place at Rochester on Monday, and the following gentlemen were elected directors for the ensuing year:

Joseph Field, Dean Richmond, Henry Martin, Francis H. Towes, Frederick Whittlesey, Daniel W. Tomlinson, Asa Sprague, Lewis Brooks, Heman J. Redfield, George H. Mumford, Aaron Rumsey, Lemuel Dana, and William F. Weld.

At a subsequent meeting of the board, Joseph Field was re-elected President, and Dean Richmond Vice-President.

Utica and Schenectady Railroad Company.—At the annual election held on the 2d inst., the following gentlemen were elected directors for the ensuing year:

Erastus Corning, Gardner G. Howland, Nicholas Devereux, Nathaniel S. Benton, Alonzo C. Paige, John Townsend, James Hooker, Thomas W. Olcott, Marcus T. Reynolds, J. Phillips Phoenix, E. T. T. Martin, Livingston Spraker, John Ellis.

At a subsequent meeting of the board, Erastus Corning was unanimously re-elected President, and Gardner G. Howland, Vice-President of the company.

Syracuse and Utica Railroad.—At the annual election for directors of this company, held at the office of the company in Syracuse, on Tuesday, the following gentlemen were chosen:—

John Wilkinson, Charles Stelbins, Oliver Teall, David Wager, Holmes Hutchinson, James Watson Williams, Hamilton White, Elias W. Leavenworth, Joel Rathbone, John Stryker, Samuel French, James Hooker, and Joseph Battell.

Wisconsin.

Rock River Valley and Union R. R.—This road, though it has attracted but little public attention, is making rapid progress, and bids fair soon to take a prominent place amongst the railroads of this country. The portion of line now under contract, extends from Fon du Lac to Janesville, and will be 86 miles long; this is all under contract. The rails have been purchased, and parties are now at the east for the purpose of procuring machinery, etc. Twenty-two miles, commencing at Fon Du Lac, will be opened in the spring, and the remainder of the line completed in less than two years from that time.

From Janesville to Chicago, it is proposed to build an independent line, and not unite with the Chicago and Galena railroad. For this a charter has been obtained in both States. This division of the road will be about 90 miles. From Janesville, a branch is to be made to Madison, the capital of the State, 40 miles, and will probably be extended to the Wisconsin River, some 40 miles further, making the whole length of this road, with its branches, 241 miles. The road is in strong hands, and will be urged forward with all possible vigor. Abundant means are provided for that portion of the road under contract, and there is no doubt that sufficient can also be obtained for the other parts of the line named, as soon as they can be prepared for a letting.

In addition to the branches described, the above company possess the right under their charter to build a branch to Lake Superior. The building of this line tho' not occupying immediate attention of the company, is an event which cannot be long

deferred. The outlet of the whole Lake Superior region must be through Wisconsin, and the growing importance of the country bordering the great Lake, will soon render a railroad indispensable, and justify its construction. Both in mineral wealth, and in fertility of soil, the southern shore of Lake Superior is unrivalled, and a tide of emigration is now setting in that direction that will soon make it a populous territory. All that portion of Wisconsin north of the Wisconsin and Fox Rivers, is covered with a dense forest and must be the source of supply of lumber to all the territory of southern Wisconsin and northern Illinois. In the transportation of this article alone, a road from Lake Superior, south, would find a profitable business.

Lake Winnebago, the present northern terminus of the above road, is the recipient of a number of large rivers, among the most important of which is Wolfe River, which is navigable for steamboats for nearly one hundred miles into the interior. The lumber from tributaries to this lake, will, on the completion of the above road, be taken to Fon Du Lac, and from thence forwarded by railroad to various parts of the state. Lake Winnebago is only 160 feet above Lake Michigan, and canals are now in progress around the rapids between the two, and steamboats will soon be able to pass from one to the other. Fon Du Lac will then become the "head of navigation," and the commercial depot for the central portions of Wisconsin.

It is very difficult for eastern people, until they have been over the ground, to form an idea of the ease and rapidity with which roads can be built in such a state as Wisconsin, and they have hardly any idea of the extensive system of railroads projected and in progress in the western states. From Fon Du Lac to Janesville, no rock cutting is encountered, and the grade in no case exceeds 26 feet to the mile. The grading, which with us is the most expensive item in railroad construction, is one of the least there; and where there is means enough on the line of any western road, to prepare the road bed for the iron, there is but little difficulty, in the present state of the money market, in borrowing a sufficient sum to buy the rails and stock the road. These works therefore are enabled to progress in the western states, with a rapidity perfectly astonishing to those whose experience is entirely confined to eastern roads.

The gauge of the above road will be six feet. This, in connection with the Erie gauge, will be very likely, in time, to change the gauge of the intervening road.

Maine.

From Portland to the Kennebec river, there are two rival roads; one, the Kennebec and Portland, running through Brunswick, and striking this river near Bowdoinham, and following it to Augusta, the capital of the State; and the other, the Androscoggin and Kennebec, using 27 miles of the track of the Atlantic and St. Lawrence, and running by way of Lewiston, and striking the Kennebec river at Waterville, about 18 miles above Augusta.—The latter town is 61 miles from Portland, the former 82. From Waterville to Bangor the distance is 55 miles, from Augusta 67. As the two roads are of a different gauge, of course a great deal of interest is felt as to which line shall be extended to the Penobscot; for it is certain that one or the other must be pushed forward to that point. A double interest is at stake; for if the upper or Waterville line is selected, the whole travel east is

thrown upon the Androscoggin and Kennebec and the Atlantic and St. Lawrence railroads, and a large amount of trade is carried to Portland. On the other hand, the Kennebec and Portland railroad company, and the Kennebec towns, for similar reasons, are anxious to push forward the latter work. The latter interests have also been taking measures to push a road from Augusta, past Waterville, to Skowhegan, the principal town of Somerset county, for the purpose of counteracting the influence of the Androscoggin and Kennebec railroad.

A meeting of the friends of the Kennebec and Portland railroad was held at Augusta on the 15th inst., for the purpose of considering the proposed extension to Bangor, of which we have spoken. It was there proposed to unite the two projects of the road to Skowhegan, and that to Bangor, upon a common line, for a distance of 12 or 16 miles from Augusta. This could be done without materially increasing the distance upon either line, and would to the same extent, reduce the distance to be built to reach Bangor. Even if the line from Waterville should be built, a road could strike that line at Unity, 31 miles from Augusta, so that the length of line necessary to reach that point, after leaving the Somerset road, would be reduced to a very small compass. The route to make this connection, is a remarkably favorable one, and is estimated to cost only \$10,385 per mile, without including, we presume, a bridge over the Kennebec river. This road would run through the towns of Vassalboro, China and Albion, which are known to be equal to the best in Maine, the inhabitants of which could readily build the above road, at its estimated cost. Assuming, therefore, that the estimates are tolerably correct, we look upon the above line as very likely to be built, either for the purpose of pushing it from Unity to Bangor, or for the purpose of uniting with the upper route at the former place, should that line succeed. Another inducement to the above road, is the fact that a branch would at once be carried to Belfast, the principal town of Waldo county, and the centre of a large business. This branch would be only 20 miles long, and would be readily built by the people of Belfast.

That portion of Maine east of the Kennebec River, is getting to be pretty well supplied with railway accommodations. The great theatre of actual movement for some time to come is to be confined to the territory between that and the Penobscot River.

Notice to Contractors.

Columbus, Piqua and Indiana Railroad.

SEALED PROPOSALS will be received at the Engineer's Office of the Columbus, Piqua and Indiana Railroad Company, at Urbana, on the 8th day of July, 1851, for the Grubbing, Grading and Masonry of that portion of the line extending from St. Paris, in Champaign county, to Columbus, a distance of fifty-six miles. Plans and specifications of the work may be seen from the 1st to the 8th of July, at the office. The Directors reserve the right to retain bids for twenty days after the 8th, before declaring the work.

The names in full of all the parties should be given in the proposals.

A. G. CONOVER, Engineer.

Piqua, May 20, 1851.

Spikes, Spikes, Spikes.

ANY person wishing a simple and effective Spike Machine, or a number of them, may be supplied by addressing J. W. FLACK, Troy, N. Y. or, MOORE HARDAWAY, Richmond, Va. March 6. 1850.

Notice to Contractors.

Pennsylvania Railroad.

PROPOSALS will be received from the 9th to the 24th of June next, at Johnstown and Summit, for the Grading and Masonry of that part of the Mountain Division of the Pennsylvania Railroad between Altona, in Blair county, and Pringle's Point, a few miles below Jefferson, in Cambria—a distance of 25 miles.

The road within this distance will cross the Allegheny mountains, encountering some of the heaviest grading offered in this country. In addition to a number of extensive cuttings, embankments and culverts, there will be one tunnel 1200 yards in length at the summit of the mountain, and another of 200 yards through Pringle's Point.

Terms cash, monthly. For further information apply to EDWARD MILLER, Esq., Associate Engineer, Blairsville, Indiana Co., or to STRICKLAND KNEASS, P. A. Engineer, Altona, Blair county.

J. EDGAR THOMSON,
Chief Engineer.

Engineer Department P. R. R. Co.,
Philadelphia, May 1st, 1851.

To Contractors.

OFFICE PACIFIC RAILROAD CO.,
St. Louis, Mo., May 16, 1851.

THE Graduation, Masonry, and the Laying of the Superstructure of the first Division of the Pacific Railroad, comprising about 45 miles from the city of St. Louis, westward, will be ready for contract on the 20th of June next.

Proposals will be received at the Engineer's Office, St. Louis, from the 20th to the 30th of June, where plans and specifications will be shown. The line will be ready for inspection on and after the 20th of June.

The line will be divided into sections of about one mile each, but offerers can include as many of them in one bid as may suit their convenience.

The company will not bind itself to accept the lowest offer, unless in all other respects satisfactory, but reserves the power to dispose of the work in such manner as may appear most advantageous to the interests of the company.

The Division will embrace about one million three hundred thousand (1,300,000) cubic yards of graduation, and about thirty three thousand (33,000) cubic yards of masonry.

THOMAS ALLEN, President.

JAMES. P. KIRKWOOD, Chief Engineer.

Notice to Contractors.

Ohio and Pennsylvania Railroad.

PROPOSALS will be received for the Grading and Bridging of the Western portion of the Ohio and Pennsylvania Railroad, extending from Wooster, by Loudonville and Mansfield, to the Cleveland, Columbus, and Cincinnati Railroad, at Crestline near Galion, a distance of fifty-three miles.

They will be received at Wooster until the evening of Tuesday the 10th of June, and at Mansfield until the evening of Wednesday the 11th of June next, and will be addressed to the undersigned President of the Company. Plans and profiles of the work east of Loudonville will be exhibited at Wooster, and of the work west of Loudonville at Mansfield, for one week before the letting.

Further information and forms of proposals may be obtained on application to Solomon W. Roberts, Chief Engineer, or Jesse R. Straughan, Resident Engineer of the Western Division. A preference will be given to bidders who will agree to take a per centage of their pay in the stock of the Company.

WM. ROBINSON, Jr., President.

Pittsburgh, May 27th, 1851.

Railroad Iron.

THE "Montour Iron Company" is prepared to execute orders for Rails of the usual patterns and weights, and of any required length not exceeding 30 feet per rail. Apply to

THOS. CHAMBERS, President,
66 Broadway, N. Y.,

Or to the Agents,
CHOUTEAU, MERLE & SANFORD,
No. 51 New st., New York.

September, 1850.

To Engineers and Ship Builders.

THE Advertiser is desirous of a situation in a respectable concern, he has acquired a practical knowledge of his business in the establishment of R. Napier, Esq., Glasgow, has since for several years had the management of the Works of an extensive Steam Packet Co., for whom he designed and built some Iron Screw Ships, whose capabilities and performances give the highest satisfaction. While acquainted with all the most approved modes of construction of marine engines, he is prepared to submit original designs.—In modelling and draughting he has had much and successful experience. Can produce the highest testimonials as to character and abilities from the first engineer on the Clyde.

Address ENGINEER, box 2315 lower Postoffice.

Lovegrove's Patent Cast Iron Water and Gas Pipes.

THE Subscriber, the Inventor and Patentee of the Centrifugal mode of giving form to metallic substances while in a molten state, is preparing to make Cast Iron Water and Gas Pipes, of any dimensions, at prices much lower than they can be made in the old manner, and the pipes warranted to stand a pressure of three hundred pounds to the square inch, and to be soft enough to drill. Steam Engines and all kinds of machinery. Cast Iron Doors and Frames, and Mill Castings of every description, made to order.

THOMAS J. LOVEGROVE,

Machinist and Founder,

West Falls Avenue, below Pratt st., Baltimore.

To Railroad Companies, etc.



The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

I also invite attention to an improved PATENT SPRING LOCK, for SLIDING Doors to Freight and Baggage Cars, now in use upon the Pennsylvania Central, Greenville and Columbia, S.C., Reading, Pa., and other Railroads.

Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH,

46 South 8th St. Philadelphia.

May 9, 1851.

SUPERIOR BLACK WRITING & COPYING INK.

Jones' Empire Ink.

87 Nassau st., Sun Building, New York city.

Net prices to the trade—

Quarts, per dozen,	\$1 50	6 oz. per dozen,	\$0 50
Pints, " "	1 00	4 " " "	0 37½
8 ounces, " "	0 62½	2 " " "	0 25

On draught per Gallon, 20 cents.

This is the best Ink manufactured. It flows freely, is a good copying ink, and will not mould, corrode, precipitate or decay. Orders for export, or home consumption, carefully and promptly attended to by

21tf

THEODORE LENT.

Railroad Iron.

THE Subscribers, Agents for the Manufacturers, are prepared to contract for the delivery of Railroad iron at any port in the United States or Canada, or at a shipping port in Wales.

WAINWRIGHT & TAPPAN,
29 Central Wharf.

Boston, June 1, 1851.

To Railroad Companies.

SALISBURY REFINED IRON.

THE Undersigned, having enlarged and perfected his Works, is now prepared to furnish Locomotive Tire of a better quality than have heretofore been used. Railroad Companies who may wish it, will be furnished with a set for trial, not to be paid for until they are satisfied of their superior quality over any other. Also made at short notice, and in the best manner, Locomotive Cranks, Engine and Car Axles, and other Locomotive Forgings.

All work ordered from me will be made of Salisbury Iron, and done in the best manner.

Address HORATIO AMES,
Falls Village, Conn.

May 1, 1851.

LOWMOOR

AND

U. S. BEST FINCH IRON. To Iron Merchants.

JOHN FINCH & SONS, Iron Merchants, Liverpool, now are, and for more than twenty years past have been, sole Agents for the LOWMOOR IRON COMPANY, for the United States and Canada, for the sale of their well known Railway Tire Bars, and Axles, Piston Rods, Boiler Plates, Angle, Rivet, and all other kinds of Lowmoor Iron; also, sole Agents for the sale of the superior St. Iordshire Iron stamped "FINCH CROWN" and "U. S. BEST FINCH," and Merchants and Wholesale Dealers in all other kinds of British Iron.

We hereby inform our friends and the public that we have this day appointed Mr. WM. BAILEY LANG, of Boston, as our only representative to receive orders and to transact our general business in the United States.

For JOHN FINCH & SONS,
JOHN FINCH Sen.

Boston, April 11, 1851.

LOWMOOR and other Bent, Welded and Blocked RAILWAY TIRES, ready for use, E. FINCH'S Patent Dovetailed and other kinds of WROUGHT IRON RAILWAY WHEELS, with, or without the finished Axles, for Locomotives and for Passenger and Merchandise Cars, also Wrought Iron Railway Chairs, Railway Spikes, etc.

To the Managers of Railways, Engineers and others: Gentlemen:—We, FINCH & WILLEY, Engineers, Liverpool, Manufacturers of the above articles, respectfully inform you that we have this day appointed Mr. WM. BAILEY LANG, of Boston, as our sole Agent for the sale of said articles, and the transaction of our business in the United States of America, and for whom we solicit your kind attention and patronage.

For FINCH & WILLEY,
JOHN FINCH, Sen.

Boston, April 11, 1851.

Having accepted the above Agencies, I beg leave to solicit your orders, which shall at all times receive my prompt and careful attention. Please address all communications either to MESSRS. JOHN FINCH & SONS or MESSRS. FINCH & WILLEY, Liverpool; or to me, at my Steel Warehouse, No. 9 Liberty Square, Boston.

Yours very respectfully,
WM. BAILEY LANG.

Boston, April 11, 1851.

The following are testimonials of the quality of FINCH & WILLEY'S WROUGHT IRON RAILWAY WHEELS from the Yorkshire and Lancashire Railway Co., one of the largest in Great Britain, and from the London and North Western Railway Co., the largest Railway Company in the world.

LONDON AND NORTH WESTERN RAILWAY,
(Northern Division.)

WAGON DEPARTMENT, ORDSALL LANE,
Manchester, January 4, 1851.

Gentlemen:—I have very great pleasure in bearing my testimony to the excellent quality of your Wrought Iron Railway Wheels.

This Company have many of them now in use on their lines, and during my experience, as their Superintendent, which is now upwards of 9 years standing, I have not known any of them to fail during that time.

I am, Gentlemen, yours, truly,

OWEN OWENS.

MESSRS. FINCH & WILLEY,
Windsor Foundry. }

LANCASHIRE AND YORKSHIRE RAILWAY,
Wagon Department, Jan. 3, 1851. }

Messrs. Finch & Willey,

Gentlemen: In reply to your request writing me to give my opinion of the 700 sets of Wrought Iron Wheels you furnished this company during the years 1847 and 1848, I have much pleasure in stating that we have not had a single instance of your Wheels failing in any respect, and I consider them equal if not superior to any Wheels we have on this line of railway. The Tires being LOWMOOR iron, 1½ inch thick, I have no doubt they will run under ordinary goods' wagons 12 years without any repairs more than the tires turning up.

I am Gentlemen,

Yours, truly, WM. EMMETT.

NOTE.—4 Wheels and 2 Axles are one set, consequently this order contained 200 WHEELS and 1400 AXLES; value over \$100,000.

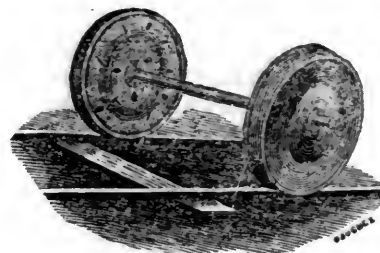
Boston Locomotive Works,

—Late Hinkley & Drury—

No. 380 Harrison Avenue,
BOSTON.

Locomotive and Stationary Steam Engines; Boilers; Iron, Brass, Copper and Composition Castings; Coppersmith's Work, and all kinds of Railroad Machinery furnished at short notice.

ALSO



Van Kuran's Improved Railroad Wheel,

Patented May 1, 1849. Manufactured under the personal superintendence of the Patentee, as above.

Orders for any quantity of wheels executed with dispatch, and wheels and axles fitted in the very best manner and at the lowest rates. Address

DANIEL F. CHILD, Treasurer, Boston.



Providence Tool Co.,

MANUFACTURERS OF

Plane Irons, Tooth Irons, Soft Moulding and Rabbet Irons, Cornice Irons, Plow Bits, and Planing Machine Knives:

NUTS, WASHERS AND BOLTS.

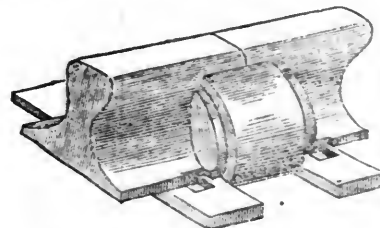
—ALSO—

PLATE HINGES AND PICK AXES.

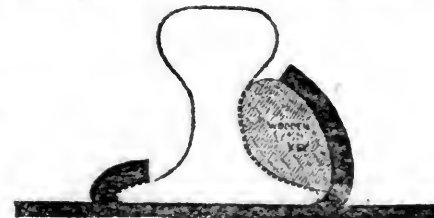
They are prepared to execute orders for all descriptions of Cold Punching and Job Work.

WM. FIELD, Agent. RUFUS WATERMAN, Treas.
PROVIDENCE, R. I.

Railroad Iron, SPIKES, AND WROUGHT IRON CHAIRS.



THE Undersigned, Agent for Manufacturers, is authorized to contract for Welsh Railroad Iron of the best quality, and deliverable at any port on favorable terms, also Spikes and Wrought Iron Chairs, made from the best iron, and of any pattern and weight. The new Wrought Iron Chair, with the introduction of a "Key," as per the annexed plan, will be found a great improvement on the old pattern.



Boiler Plates of superior quality, perfect regularity in the squaring and thickness, and made with great care.

Samples can be seen at the office, No. 20 Beaver st.
CHARLES ILLIUS.

RAILROAD CAR MANUFACTORY
TRACY & FALES,
GROVE WORKS, HARTFORD, CONN.
 Passage, Freight and all descriptions of
RAILROAD CARS,
 AS WELL AS
LOCOMOTIVE TENDERS,
 Made to order promptly.

The above is the Largest Car Factory in the Union. In quality of Material, and in Workmanship, Beauty and Good Taste, as well as Strength and Durability, we are determined our work shall be unsurpassed.

JOHN R. TRACY. THOS. J. FALES.

CHILLED TIRES FOR
LOCOMOTIVE ENGINES.
To Railroad Companies.

THE UNDERSIGNED, Assignee of Letters Patent, respectfully invites the attention of Railroad Companies to the CHILLED TIRES for LOCOMOTIVE ENGINES, which he offers for sale.

These Tires were first introduced by Messrs. Perkins & McMahon, upon the Baltimore and Ohio Railroad, in 1843, where, after a long and severe trial, they were generally adopted, on both passenger and freight engines, and now have entirely superseded Wrought Tires on that road, on which are many engines of the heaviest class, which ascend grades of *eighty-five feet per mile*, taking with them *one hundred and twelve tons*, exclusive of cars. This performance shows in some measure the adhesive character and strength of the Tire.

During a service of seven years, these Tires have very much exceeded in durability those of wrought iron, while their first cost, and expense of repairs, is more than *fifty per cent. less*. They also retain more equally their diameter and proper form of tread, which is a point of much value in engines with coupled wheels.

It is believed these Tires are peculiarly well adapted to freight engines, as the objection to coupling the wheels of locomotives is the increased friction, arising principally from the unequal wear of wrought tires; and hence most of the freight engines where wrought tires are used, have but four wheels as drivers, with frequently a weight of sixteen tons, or more, upon them, which may be of no disadvantage to the engine, although its effect upon the track is like a car with sixteen tons upon four wheels, and it is presumed no one would permit cars so heavily loaded to pass over their road.

As Chilled Tires wear more uniformly than those of wrought iron, there can be no doubt when these are used, that the weight necessary for adhesion may be distributed upon more driving wheels, without any material disadvantage to the engine, and thus placing less weight upon a single point, would relieve the track, and secure, to a great extent, the object sought to be gained by the plan so frequently proposed, of using light engines, which would bring with it the necessity of increasing the number of trains and train hands.

The complete success of Chilled Tires upon the Baltimore and Ohio road for the last seven years, and upon other roads for a more subsequent period, is a strong proof of their practical character, while their cheapness and durability, it is believed, recommend their trial by every railroad company.

It may be thought by some that the whole wheel for strength, would be preferable to wheels with tires, but experience shows the latter to be a much stronger and more durable wheel, on account of its freedom from tension, which is never the case with a whole wheel. That TENSION has much to do with the breaking of wheels and tires, may be inferred from the fact, that a set of chilled tires, five feet diameter, on a first class passenger engine, have been in constant service during the past winter, on one of our Eastern roads, and have withstood the severities of the season, where whole wheels and wrought tires have broken. And it may be proper to remark, that wherever chilled tires have been introduced, whole wheels as drivers are invariably abandoned, they being far more expensive to maintain, as there is a crank to form as often as a wheel is renewed, which is not the case on the renewal of a tire.

The peculiar manner of fastening these tires to the wheel without shrink, applies equally well to wrought tires, and is of much importance where they are used, as it secures them against the TENSION or STRAIN they receive by the present plan of shrinking them to the wheels, which undoubtedly is the cause of wrought tires breaking so frequently, particularly in cold weather, which produces a greater contraction of the tire, thereby increasing the strain. This plan makes the tire perfectly secure upon the wheel, and is attended with less expense, as will be seen by the following testimonials, which are respectfully submitted.

Lowell, March, 1851.

L. B. TYNG.

TESTIMONIALS.

Baltimore and Ohio R. R. Office, }
 Jan. 2, 1850.

Mr. L. B. TYNG, Lowell, Mass.—Sir: Your favor of the 26th ult., is before me, asking my opinion of the Chilled Cast Iron Tires, of Messrs. Perkins & McMahon, patentees. I do not hesitate to speak favorably of them, nor to say that I would give them the preference over wrought iron tires, whenever the adhesive tenacity of the latter to the rails is not all called for, there being somewhat less adhesion to the chilled wheel.

This can, however, scarcely be called a practical point, as nearly all of the Passenger Engines now in use have a surplus of adhesion, and nearly all Freight Engines being provided with the sand box, for emergencies arising from sharp curves, heavy grades or wet rails.

The Chilled Tire is very much cheaper in first cost, will last longer, and offers a facility for putting it on the wheel, rendering comparison with the wrought iron tire an absurdity—it not being necessary even to take the wheels from the machine for the purpose.—Many of them are in successful use on this road, and I consider its curves and other peculiarities the most severe of all existing tests. One set of five feet in diameter, has run 50,000 miles under one of our Passenger Engines, and will to all appearance, run as many more; and, in the mean time, they have not cost a dollar for repairs or adjustment.

It may be suggested that they might not stand a Northern frost. This is possible; but I believe otherwise, as the weather here is occasionally as severe as in Boston, and if I had charge of a northern road, after the experience I have had here, I would make their trial one of my very first acts.

Respectfully your Ob't Serv't,
 WM. PARKER, General Supt., etc.

January 29, 1851.

Philadelphia, Wilm. and Balt. R. R. Office,
 Wilmington, Del.

Mr. L. B. TYNG—Sir: We have used the solid Cast Iron Chilled Wheel, and Cast Iron Chilled Tire, for engine drivers, on this road since 1842. When wrought iron tires under new engines, purchased from time to time, wear out, I invariably replace them with the Chilled Tire of Messrs. Perkins & McMahon, patentees.

These Tires will last, on the average, three times as long as wrought tires; seldom requiring renewals under three years, and lasting much longer usually. We have a set which has been in constant use for five years, and still in fair order. The adhesion supplied by the Chilled Tires, I find in practice with engines of the same model and weight, to be equal to that given by wrought tires. This is certainly a fact, though not an acknowledged one, in general. Those who think otherwise, will in time change their opinions.

I am of opinion that the Chilled Tire is as safe as the wrought, at any temperature. In eight years use, we have broken but one tire out of more than fifty, and that by a violent concussion on the occasion of a run off.

The use of the Chilled Tire, and the ease and rapidity with which it may be replaced, would certainly enable a road to do the same amount of work with fewer engines—since but little time would be lost in laying up an engine for new tires, or for turning down old ones, as must be done when wrought tires are used.

I am yours respectfully,
 I. R. TRIMBLE,
 Engineer and General Supt.

Office Eastern R. R., Salem, Dec. 23, 1850.

L. B. TYNG, Esq.—Sir: Your favor of Nov. 30th, inquiring respecting the Chilled Cast Iron Tires, came duly to hand, and in answer, I will say, that this road have in use one set cast and fitted to the wheel, by Messrs. Bush & Lobdell, upon a twenty ton first class Passenger Engine, which has run in eight months, 26,639 miles, and to all appearance, are about as good as when they first commenced running.

In regard to the comparative expense of the cast or wrought iron tires, I do not hesitate to say that the difference would be vastly in favor of the former.

I have ordered a second set, and they will be put on to the engine immediately. Respectfully,
 JOHN KINSMAN, Supt. E. R. R.

Chilled Tires for the various sized wheels, or wheels with either chilled or wrought tires fitted up upon this plan, may be had of the following persons:

ALDRICH, TYNG & Co, Lowell, Mass.
 SMITH & PERKINS, Alexandria, Va.

Rights for using Tires upon the above plan, may be had on reasonable terms, of L. B. TYNG, Lowell, N. York.

Railroad Iron.

THE UNDERSIGNED, HAVING made arrangements abroad, are prepared to contract for the delivery of Foreign rails, of approved brands upon the most favorable terms.

They will also make contracts for American rails, made at their Trenton works, from Andover Iron, in whole or in part, as may be agreed upon.

They are prepared to furnish Telegraph, Spring and Market Wire; Braziers and Wire Rods; Rivets and Merchant Bars to order, all made exclusively from Andover Iron. The attention of parties who require iron of the very best quality for special purposes, is respectfully invited.

COOPER & HEWITT,
 17 Burling Slip, New York.

February 15, 1850.

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
 No. 24 Commercial St. Boston.

August, 16, 1849.

6m33

Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron.

THOMAS B. SANDS & CO.,
 73 New street,
 New York.

February 3, 1849.

Glendon Refined Iron.

Round Iron, Band Iron, Hoop Iron,
 Square " Flat " Scroll "
 Axles, Locomotive Tyres,
 Manufactured at the Glendon Mills, East Boston, for
 sale by GEORGE GARDNER & CO.,
 5 Liberty Square, Boston, Mass.

Sept. 15, 1849.

3m37

ENGINEERS.

Atkinson, T. C.,

Mining and Civil Engineer,
 Orange and Alexandria Railroad, Alexandria, Va.

Clement, Wm. H.,

Little Miami Railroad, Cincinnati, Ohio.

Cozzens, W. H.,

Engineer and Surveyor, St. Louis, Mo.

Alfred W. Craven,

Chief Engineer Croton Aqueduct, New York.

Floyd-Jones, Charles,

Alton and Sangamon Railroad, Alton, Illinois.

Gay, Edward F.,

Columbia and Philadelphia Railroad, Philadelphia Pa.

Gilbert, Wm. B.,

Rutland and Burlington Railroad, Rutland, Vt.

Gzowski, Mr.,

St. Lawrence & Atlantic Railroad, Montreal, Canada.

Grant, James H.,

Nashville and Chattanooga R. R., Nashville, Tenn.

S. W. Hill,

Mining Engineer and Surveyor, Eagle River,
 Lake Superior.

Holcomb, F. P.

Southwestern Railroad, Macon, Ga.

Latrobe, B. H.,

Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,

Buffalo and Conhocton Valley Railroad, Bath, N. Y.

Morris, Elwood,

Schuylkill Navigation, Schuylkill Haven, Pa.

Nott, Samuel,

Lawrence and Manchester Railroad, Boston,

Osborne, Richard B.,

Civil Engineer, Philadelphia.

Prichard, M. B.,
East Tennessee and Georgia R. R., Cleveland, Tenn.

W. Milnor Roberts,
Bellefontaine and Indiana Railroad, Marion, Ohio.

Roberts, Solomon W.,
Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Sanford, C. O.,
South Side Railroad, Virginia.

Schlatter, Charles L.,
Northern Railroad (Ogdensburg), Malone, N. Y.

Steele, J. Dutton,
Pottstown, Pa.

Trautwine, John C.,
Civil Engineer and Architect, Philadelphia.

Tinkham, A. W.,
United States Fort, Bucksport, Me.

Troost, Lewis,
Alabama and Tennessee Railroad, Selma, Ala.

Whipple, S.,
Civil Engineer and Bridge Builder, Utica, N. Y.

HOTELS.

**DAVIS'S
ALHAMBRA HALL,**
No. 136 Pratt street,
BALTIMORE.

Exchange Hotel,
Adjoining Eastern Railroad Depot,
BUFFALO, N. Y.
BY.....**FISS & SPERRY,**
Late of Delevan House, Albany.

MANSION,
Corner of Main and Exchange Streets,
P. DORSHIMER. BUFFALO.

Barnum's City Hotel,
MONUMENT SQUARE, BALTIMORE.
This Extensive Establishment, erected expressly
for a Hotel, with every regard to comfort and convenience,
is situated in the centre and most fashionable
part of the city, and but a few minutes' walk from the
Railroad Depots and Steamboat Landings.
The House has lately undergone a thorough repair,
embracing many valuable improvements, and will accommodate 250 Guests. **BARNUM & CO.**

American Hotel,
Pratt street, opposite the Railroad Depot,
BALTIMORE.
HENRY M. SMITH.....Proprietor.
Late of the Exchange & St. Charles Hotels, Pittsburg

Washington Hotel,
BY **JOHN GILMAN,**
\$1 Per Day.
No. 206 Pratt street, (near the Depot),
BALTIMORE.

**GUY'S
United States Hotel,**
(Opposite Pratt street Railroad Depot),
BALTIMORE.
JOHN GUY. WILLIAM GUY.

DUNLAP'S HOTEL,
On the European Plan,
NO. 135 FULTON STREET,
Between Broadway and Nassau St.,
NEW YORK.

JONES' HOTEL,
NO. 152 CHESTNUT STREET,
PHILADELPHIA.
Bridges & West, Proprietors.

Fountain Hotel,
LIGHT STREET, BALTIMORE,
MURSTON.....Proprietor.

BUSINESS CARDS.

Walter R. Johnson,
CIVIL AND MINING ENGINEER AND ATTORNEY
for Patents, Office and Laboratory, F St.,
opposite the Patent office, Washington, D. C.

Lithography.
JOHN P. HALL & CO.,
161 Main st., Buffalo, (Commercial Advertiser Build.)
Are prepared to execute all kinds of Lithography
in good style and at reasonable rates. Particular
attention will be paid to Engraving Railroad Maps, Engineer's
Plans and drafts, etc., and orders in this line are respectfully solicited.

Cumberland, (Md.) Coals for Steaming, etc.
ORDERS RECEIVED FOR AND FILLED
by
J. COWLES, 27 Wall St., N. Y.

J. & L. Tuckerman,
IRON COMMISSION MERCHANTS,
AND MANUFACTURERS OF
ULSTER BAR & POUGHKEEPSIE PIG IRON,
69 WEST STREET,
NEW YORK

Henry I. Ibbotson,
IMPORTER of Sheffield and Birmingham Goods.
Also, Agent for the Manufacture of Telegraph Wire.
218 PEARL ST., NEW YORK.

Charles T. Jackson, M. D.,
STATE ASSAYER, late Geologist to Maine, Rhode Island, New Hampshire, and the United States,
offers his services to his friends and the public in making
any Chemical, Mineralogical or Geological researches that may be required for the improvement of
Agriculture and the Manufacturing Arts. Particular
attention will be paid to the exploration of mines and to assaying of ores of the metals.
State Assayer's office, 31 Somerset st.
Boston Sept. 3, 1850.

STEEL AND FILES.
R. S. Stenton,
20 CLIFF STREET, NEW YORK,
AGENT FOR
J. & RILEY CARR,
BAILEY-LANE WORKS, SHEFFIELD,
Manufacturers of Cast, Shear, German, Blister, and
Spring Steel,
Of all descriptions, Warranted Good.
FILES.
Manufacturers of Machinists' Warranted Best Cast
Steel Files, expressly for working upon Iron and Steel,
made very heavy for recutting.
A full Stock of Steel and Files at all times on hand. 6m4

Dudley B. Fuller & Co.,
IRON COMMISSION MERCHANTS,
No. 139 GREENWICH STREET,
NEW YORK.

Manning & Lee,
GENERAL COMMISSION MERCHANTS,
NO. 51 EXCHANGE PLACE,
BALTIMORE.
Agents for Avalon Railroad Iron and Nail Works.
Maryland Mining Company's Cumberland Coal 'CED'
—'Potomac' and other good brands of Pig Iron.

Samuel Kimber & Co.,
COMMISSION MERCHANTS
WILLOW ST. WHARVES, PHILADELPHIA.
AGENTS for the sale of Charcoal and Anthracite
Pig Iron, Hammered Railroad Car and Locomotive
Axles, Force Pumps of the most approved construction
for Railroad Water Stations and Hydraulic
Rams, etc., etc.
July, 27, 1849.

James Herron, Civil Engineer,
OF THE UNITED STATES NAVY YARD,
PENSACOLA, FLORIDA.,
PATENTEE OF THE
HERRON RAILWAY TRACK.
Models of this Track, on the most improved plan,
may be seen at the Engineer's office of the New York
and Erie Railroad.

PLUSHES

FOR
Railway Cars & Omnibuses.
F. S. & S. A. MARTINE,
112 WILLIAM ST., NEAR JOHN.

ARE now receiving a large and complete assortment of Plain and Figured PLUSHES, of their own importation, which will be sold at the lowest market price, viz: Crimson, Maroon, Scarlet, Green, Blue, Purple, etc.
ALSO—CURLED HAIR, the best manufactured in market.

To Railroad Companies, Machinists, Car Manufacturers, etc., etc.

CHARLES T. GILBERT,
NO. 80 BROAD ST., NEW YORK,

IS prepared to contract for furnishing at manufacturer's prices—
Railroad iron,
Locomotive Engines,
Passenger and Freight Cars,
Car Wheels and Axles,
Chairs and Spikes.

Orders are invited; and all inquiries in relation to any of the above articles will receive immediate attention

Manufacture of Patent Wire ROPE AND CABLES,

For Inclined Planes, Suspension Bridges, Standing Rigging, Mines, Cranes, Derrick, Tillers, &c., by
JOHN A. ROEBLING, Civil Engineer,
TRENTON, N. J.

FORGING.

Ranstead, Dearborn & Co.,
MANUFACTURERS OF
LOCOMOTIVE CRANKS AND CAR AXLES,
ALSO
WROUGHT IRON SHAFTING,
And All Kinds of Hammered Shapes.
Office 25 Foster's Wharf, Boston.

Samuel D. Willmott,
MERCHANT, AND MANUFACTURER OF
CAST STEEL WARRANTED SAWS,
—AND FILES—
IMPORTER OF THE
GENUINE WICKESLY GRINDSTONES
NO. 8 LIBERTY STREET,
NEW YORK.

Railroad Instruments.

THEODOLITES, TRANSIT COMPASSES,
and Levels, with Fraunhofer's Munich Glasses,
Surveyor's Compasses, Chains, Drawing Instruments, Barometers, etc., all of the best quality and workmanship, for sale at unusually low prices, by
E. & G. W. BLUNT,
No. 179 Water St., cor. Burling Slip.
New York, May 19, 1849.

IRON.

Iron.

Pig Iron, Anthracite and Charcoal; Boiler and Flue Iron, Spring and Blistered Steel, Nail Rods, Best Refined Bar Iron, Railroad Iron, Car Axles, Nails, Stove Castings, Cast Iron Pipes of all sizes, Railway Chairs of approved patterns for sale by
COLEMAN, KELTON & CAMPBELL,
109 N. Water St., Philadelphia.

Iron Store.

THE Subscribers, having the selling agency of the following named Rolling Mills, viz: Norristown, Rough and Ready, Kensington, Triadelphia, Pottsgrove and Thorndale, can supply Railroad Companies, Merchants and others, at the wholesale mill prices for bars of all sizes, sheets cut to order as large as 58 in. diameter; Railroad Iron, domestic and foreign; Locomotive tire welded to given size; Chairs and Spikes; Iron for shafting, locomotive and general machinery purposes; Cast, Shear, Blister and Spring Steel; Boiler rivets; Copper; Pig iron, etc., etc.

MORRIS, JONES & CO.,
Iron Merchants,
Schuylkill 7th and Market Sts., Philadelphia.
August 16, 1849. 1y33

Bowling Iron. Stamped B.O.

Railway Tire Bars Rivet Iron
Locomotive and other Axles Locomotive Frame do
Boiler Plates Bars,
and every other description of this superior Iron.

The subscribers, agents for the sale of Bowling Iron, are prepared to execute orders for importation, especially for railway and machinery uses, with despatch from the manufacturers.

RAYMOND & FULLERTON, 45 Cliff st.

**Ibbotson, Brothers & Co's
CELEBRATED CAST STEEL**

AND

Best Cast Steel Royal Improved Files, well known as better adapted for Engineers' and Machinists' purposes than any now in use in the United States.

Every description of Square, Octagon, Flat and Round Cast Steel, Sheet, Shovel and Railway Spring Steel, etc., and Steel to order for any purposes—manufactured at their works in Sheffield—and universally known by the old stamp "Globe."

HENRY I. IBBOTSON, Agent,
218 Pearl st., New York.

**Smith & Tyson,
IRON COMMISSION MERCHANTS,
BALTIMORE.**

REFINED Juniata Charcoal Billet Iron for Wire. Do. for Bridging, of great strength.
Flat Rock, Boiler and Flue Iron, rolled to pattern.
Elba, Wheel Iron of great strength and superior chiling properties. Elba Forge Iron, American Shot Iron, Cut Nails, Spikes and Brads, Nail and Spike rods, Railroad Spikes of superior quality, Wrought Chair plates of any pattern, punched or plain.

**WILLIAM JESSOP & SONS'
CELEBRATED CAST-STEEL.**

The subscribers have on hand, and are constantly receiving from their manufactory,

PARK WORKS, SHEFFIELD,

Double Refined Cast Steel—square, flat and octagon. Best warranted Cast Steel—square, flat and octagon. Best double and single Shear Steel—warranted. Machinery Steel—round.

Best and 2d gy. Sheet Steel—for saws and other purposes.

German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.

Genuine "Sykes" L Blister Steel.

Best English Blister Steel, etc., etc.

All of which are offered for sale on the most favorable terms by

WM. JESSOP & SONS,
91 John street, New York.

Also by their Agents—

Curtis & Hand, 47 Commerce street, Philadelphia.

Alex'r Fullerton & Co., 119 Milk street, Boston.

Stickney & Beatty, South Charles street, Baltimore.
May 6, 1848.

Railroad Iron.

B. O. Railway Tires, Railway Wheels,
Scotch Pig Iron, Tin Plates and Banca Tin,
Muntz Patent Metal Sheathing,
Baltimore Copper.

Contracts for Rails made on behalf of the manufacturers, for delivery at any ports in the United States, at fixed prices.

Bowling Tires and Tire Bars and Scotch Pigs imported to order.

Muntz's Ship-sheathing, and a general stock of Tin Plates and Banca Tin in store, and for sale by

RAYMOND & FULLERTON, 45 Cliff st.

IRONDALE PIG METAL, MANUFACTURED
and for sale by the Bloomsburg Railroad Iron Co.

LINDLEY FISHER, Treasurer,
75 N. Water St., Philadelphia.

Car Wheel Iron.

THE celebrated cold blast "Conowingo" Pig Iron, for Railroad Wheels, Chilled Rolls, etc., for sale by

E. PRATT & BROTHER,
Baltimore, Md.

Railroad Iron.

3,000 TONS C. L. MAKE 63½ lbs. per yard, now landing and to arrive.

Also contracts made for future delivery of above superior make English Iron.

300 Tons Banks Best Iron, Round, Square and Flat,
200 " English Bar " " " "

10 " 9-16 Square Iron for Railroad Spikes.

For sale in lots to suit purchasers by

DAVID W. WETMORE.
New York, March 26, 1850. 3m

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

**JOHNSON, CAMMELL & Co's
Celebrated Cast Steel,**

AND

ENGINEERING AND MACHINE FILES, which for quality and adaptation to mechanical uses, have been proved superior to any in the United States. Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cyclops Steel Works Sheffield.

JOHNSON, CAMMELL & CO.,
24 Cliff St., New York.

November 23 1849.

Bowling Tire Bars.

40 Best Flange Bars 5½x2 inches, 11 feet long.
40 " " 5½x2 " 7 feet 8 in. long.
40 " Flat " 6x2 " 11 feet long.
40 " " 6x2 " 7 feet 8 in. long.

Now in store and for sale by

RAYMOND & FULLERTON,
45 Cliff street.

**Wheel, Forge and Foundry
Iron.**

LOCUST GROVE Wheel Iron of great strength and superior chilling property.

Balt. Charcoal Forge Iron, from Patuxent, Curtis Creek and Gunpowder furnaces.

Elkridge Foundry Iron, of superior strength and softness. Anthracite and Charcoal Iron from Pennsylvania and Virginia. Gas and Water Pipes, Lamp Posts from Elkridge furnace.

LEMMON & GLENN,
62 Buchanan's Wharf, Baltimore.

£m9

Railroad Iron.

1650 Tons, weighing about 61 lbs. per yard, 40 tons, weighing about 52 lbs. per yard, and 825 tons, weighing about 53½ lbs. per yard, of the latest and most approved patterns of T rail, for sale by

BOORMAN, JOHNSTON & CO.,
119 Greenwich street.

New York, Aug. 26, 1850.

N.B.—B. J. & Co are also prepared to take contracts for English rails, delivered in any of the Atlantic ports of the United States.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract to deliver Rails of superior quality, and of any size or pattern, to any ports of discharge in the United States.

COLLINS, VOSE & CO.,
74 South St.

New York, June 1, 1850.

Tredegar Iron Works.

ROLLING MILL FOUNDRY AND MACHINE SHOPS. The undersigned continues to manufacture at his Works in this city (from best charcoal metal) Bar Iron of every description, embracing—Rounds and Squares, from ½ to 5 inches diameter. Flats, from ½ to 7 inches, all thicknesses.

Bands and Scrolls, all sizes. Boiler plate and Plough Iron. Railroad and Locomotive Axles and Tires. Locomotive Frames, Spikes and Plates. Hoops, Ovals, Half Ovals, Half Rounds, Angle, T, L, and indeed every description of Iron usually manufactured, all of which he warrants to be equal to any made in this country. He also manufactures at his Foundry and Machine Shops all descriptions of Railroad Work, say, Locomotives, Railroad Wheels and Axles complete and ready for the road, Railroad Chairs, etc. Also, Marine and Stationary Engines all sizes, Sugar mills and Engines, Horse mills, and every kind of Machinery usually required for the operations of the country. He has paid particular attention to getting up machinery, etc., for Gold Mine operations, and those in want of such work might find it to their advantage to give him a call.

J. R. ANDERSON.

Richmond, Va., Sept. 10, 1850.

CUT NAILS OF BEST QUALITY, BAR IRON (including Flat Rails) manufactured and for sale by

FISHER, MORGAN & CO.,
75 N. Water St., Philadelphia.

Car Wheel Iron.

100 Tons "Columbia" No. 2 Cold Blast Charcoal Iron.

300 Tons "Salisbury" No. 1, do. do.
For sale by CHARLES T. GILBERT,
No. 80 Broad st.

New York, Sept. 21, 1850.

Railroad Spikes.

THE subscribers are prepared to make and execute contracts for Railroad Spikes of a superior quality, manufactured by the New Jersey Iron Company, at Boonton.

DUDLEY B. FULLER & CO.,
139 Greenwich st. corner of Cedar.

**S. S. Keyser & Co.,
IRON WAREHOUSE,**

Corner of South and Pratt Streets,
BALTIMORE, MD.

Selling Agents for the Rough and Ready Bar Iron and Elk-Boiler and Flue Iron Rolling Mills, Sarah and Taylor Furnaces, and Wrightsville Hollow Ware Foundry, and Dealers in Bar and Sheet Iron, and Cast, Sheer, German, Blister, Spring and Electroplated Steel, etc., etc.

Railroad Spikes, Boiler Rivets, etc.

THE Subscribers, Agents for the sale of James S. Spencer's, Jr., Railroad and Boat Spikes, Boiler Rivets, and Wrought Iron Chairs for Railroads, made at his Works near this city, will execute all orders with promptness, despatch, and of the best quality.

ALSO IMPORTERS of English refined and Merchant bar Iron; Extra refined Car and Locomotive Axles (from 3½ to 6½ inches in diameter); B. O. Locomotive Tire (welded by Baldwin). Also, supply Boiler and Flue Iron cut to pattern or otherwise.—Spring, Shear, and Cast Steel, etc., etc.

T. & E. GEORGE.

Philadelphia, November 14, 1850.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract for the delivery of English, Welsh and Scotch Rails, of any pattern and weight, also for every description of English, Welsh, Scotch, and Swedish Iron, Railway Chairs and Spikes, Rivets, Bolts, Nuts, Washers, Chain Cables, Anchors, Tin Plates, German Spelter, Iron Castings, and every description of Machinery.

WILLIAM BIRD & CO.,
Iron and Tin Plate Merchants,
44 Wall st., New York.

And at 5 Martin's Lane, City, London,
and 140 Buchanan st. Glasgow.

July 27th, 1850.

**Railroad Spikes, Wrought
Chairs and Fastenings.**

THE subscribers continue to manufacture, with increased facilities, Hook and Flat Head Railroad Spikes and Chairs. The points being FINISHED BY HAND, have a long taper, and sharp point, and are much superior to those made entirely by machinery.

We are also prepared to furnish Wrought Chairs, Clamps and Fastenings of every description, either punched or plain. The best quality of refined iron is used in the above articles, and our prices will be made as favorable as any in the country.

The patent Clinch Spike will be found an improvement to secure the rail at the joints.—They drive in the manner shown and are not liable to work loose.

All communications, addressed to the undersigned, will meet with prompt attention.

SMITH & TYSON,
No. 25 South Charles st., Baltimore Md.

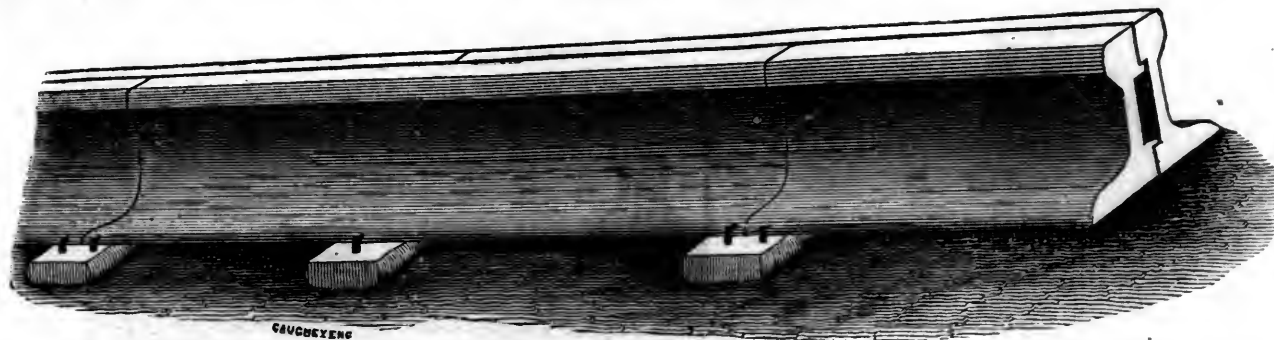
TO RAILROAD COMPANIES, CAR MANUFACTURERS, etc.

THE Undersigned hereby gives public notice, that the Commissioner of Patents, pursuant to his decision in relation thereto, on the 8th day of October, 1850, issued to him a Patent for the sole right to manufacture, and exclusive use of the INDIA RUBBER CAR SPRING, on account of priority of invention of said Spring.

New York, Oct. 23, 1850.

F. M. RAY,

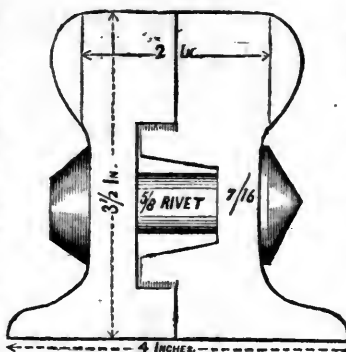
PATENT COMPOUND RAIL.



THE UNDERSIGNED NOW OFFER TO THE Railroad Public a new Compound Railroad Bar, which possesses, as they believe, a decided superiority over every kind now in use. The Cuts annexed will give a good idea of the form of the Rail, and the mode of combination.

This Rail has now been in use on the New York and Erie and the Utica and Schenectady Railroads for nearly two years, and has proved itself to be a *durable and continuous* rail, realizing the advantages of a theoretically perfect rail, over the one in common use. We invite the attention of Railroad Companies to a careful examination of the merits of the form now offered.

The advantages of this Rail are: first, it effects a saving of from 25 to 50 per cent. in the wear and tear of the machinery; secondly, it saves to a vastly greater extent in the repairs of track; thirdly, it secures a much higher rate of speed with the same power; and what is of still



greater importance, it offers complete protection against most of the accidents to which companies are liable. For these reasons, it is believed to be not only the best, but the cheapest rail that can be used. In enumerating its advantages, the proprietors only repeat the statements of competent persons, who have had the best opportunities of judging of its merits.

This improved Rail is now being manufactured at the Works of the Mount Savage Iron Co. in Maryland. Any communications or enquiries addressed to either of the undersigned will receive prompt attention.

J. F. WINSLOW, President,
Troy, N. Y.
ERASTUS CORNING, Albany.
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore.

April 8, 1851.

Faggotted Car and Engine Axles

FORGED by RANSTEAD, DEARBORN & Co., Boston, Mass. These Axles enjoy the highest reputation for excellence, and are all warranted.

Iron Trade of Pennsylvania.

DOCUMENTS and Statistics relating to the Manufacture of Iron in the State of Pennsylvania—giving a history of the manufacture from its commencement to this date, illustrated by diagrams. Also tables giving the address and capacity of every establishment in the State. Prepared by direction of the late convention of the trade held in Philadelphia. For sale by

LINDSAY & BLACKISTON, Philadelphia.

FIELDING LUCUS, Jr., Baltimore.

HENRY G. NICHOLS, 79 Water st., N. Y.

or at this office—price \$1 00.

It will be sent by mail to any order enclosing the money, and post paid.

Ulster Iron.

THE ULSTER IRON WORKS, Saugerties, N. Y., continue in full operation. Orders for round, square, flat, band, hoop and scroll iron, will be received and promptly executed by

J. & L. TUCKERMAN,
69 West St., New York.

India-rubber for Railroad Cos.

RUBBER SPRINGS—*Bearing and Buffer—Fuller's Patent—Hose from 1 to 12" diameter.* Suction Hose. Steam Packing—*from 1-16 to 2 in thick.* Rubber and Gutta Percha Bands. These articles are all warranted to give satisfaction, made under Tyer & Helm's patent, issued January, 1849. No lead used in the composition. Will stand much higher heat than that called "Goodyear's," and is in all respects better than any in use. Proprietors of rail roads do not be overcharged by pretenders.

HORACE H. DAY,
Warehouse 23 Courtlandt street

New York, May 21, 1849.

Railroad Iron.

2000 TONS T RAILS, of desirable pattern, arrived, and to arrive, for sale by

RAYMOND & FULLERTON,
6121 45 Cliff st.

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. J. F. WINSLOW, President

Troy, N. Y.
ERASTUS CORNING, Albany
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md

November 6, 1848.

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phoenix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehanna river; which two establishments are now turning out upwards of 1600 tons of finished rails per month.

Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.

REEVES, BUCK & CO.
45 North Water St. Philadelphia;

March 15, 1849

LAP—WELDED WROUGHT IRON TUBES.

FOR

TUBULAR BOILERS, FROM ONE AND A QUARTER TO SEVEN INCHES IN DIAMETER.

THE ONLY Tubes of the same quality and manufacture as those so extensively used in England Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER & SON, Patentees,
23 Platt street, New York.

AMERICAN PIG IRON.

"POUGHKEEPSIE" brand, Dutchess Co., N. Y.
"GLENDON" brand, Lehigh county, Pa.
Orders for the above two well known brands will be received, and promptly executed, by

J. & L. TUCKERMAN,
69 West St., New York.

American Cast Steel.

THE ADIRONDAC STEEL MANUFACTURING CO. is now producing, from American iron, at their works at Jersey City, N. J., Cast Steel of extraordinary quality, and is prepared to supply orders for the same at prices below that of the imported article of like quality. Consumers will find it to their interest to give this a trial. Orders for all sizes of hammered cast steel, directed as above, will meet with prompt attention.
May 28, 1849.

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for rail roads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.

JOHN F. WINSLOW, Agent.
Albany Iron and Nail Works, Troy, N. Y.
The above Spikes may be had at factory prices, of Erastus Corning & Co. Albany; Merrill & Co., New York; E. Pratt & Brother, Baltimore, Md.

Stickney & Beatty, DEALERS IN IRON AND IRON MANUFACTURERS.

AGENTS for the Baltimore City Rolling Mill, (Works of Messrs. Ellicott) also agents for the sale of the Laurel, Locust Grove and Gunpowder (Balt.) Forge Pig Irons; Hupp's Cold Blast Columbia Wheel Iron, Fort and anti-Eatam Pig Irons. Caledonia, Columbia and Capon Cold Blast Boiler Rooms, warranted; Wm. Jessop & Son's Steel; Old Colony and anti-Eatam Nails; Bar Iron, Boiler Plates, Hoop, Sheet, Oval, Half Oval, Horse Shoe and other Iron. Exchange Place, Baltimore.

Railroad Iron.

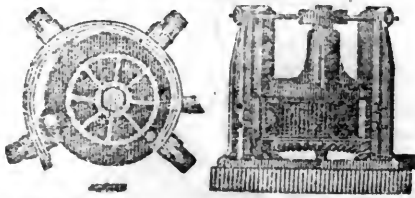
2000 Tons, weighing 53 pounds per lineal yard, of the most approved pattern of T rails, in store and to arrive, for sale by

COLLINS, VOSE & CO.
74 South St.

New York, June 1, 1850.

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phoenixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll sounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y. P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery for making Spikes, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

CHILLED RAILROAD WHEELS.—THE UNDERSIGNED are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

Brown's Old Established SCALE WARE HOUSE,

NO. 234 WATER ST., NEW YORK.

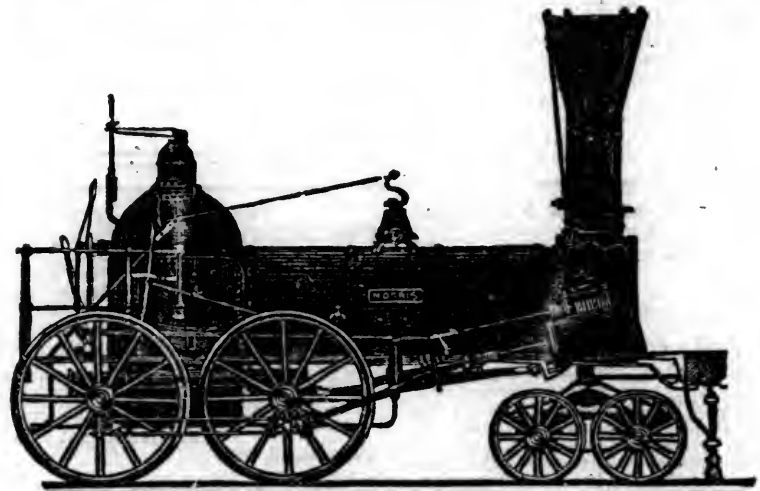
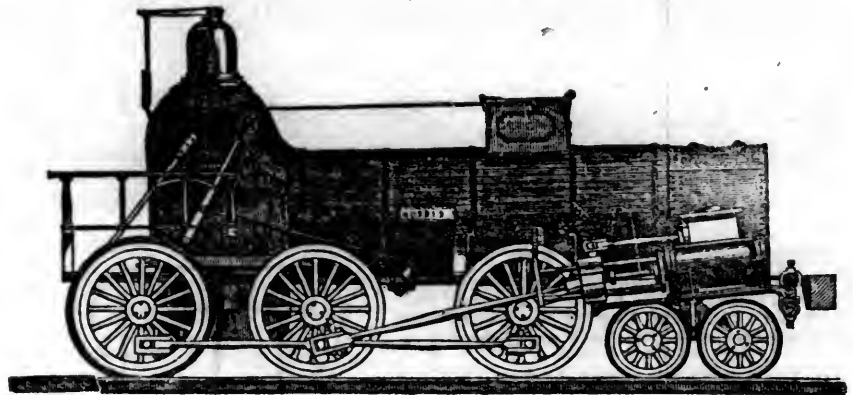
THE Subscriber, Practical Manufacturer of Scales of every description, respectfully asks the attention of Railroad Companies to his Improved Wrought Iron Railroad Track and Depot Scales which for strength, durability, accuracy, convenience in weighing, and beauty of workmanship, are not surpassed by any others in this country.

He is aware that this is rather a bold assertion for him to make, yet he can say with confidence that they have but to be tried to give them precedence over all others.

J. L. BROWN.

Bank Scales made to order, and all Scales of his make Warranted in every particular.

Referer given required

NORRIS' LOCOMOTIVE WORKS.
BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,

THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size. Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tyres are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS.

PATENT MACHINE MADE HORSE-SHOES.

The Troy Iron and Nail Factory have always on hand a general assortment of Horse Shoes, made from Refined American Iron.

Four sizes being made, it will be well for those ordering to remember that the size of the shoe increases as the numbers—No. 1 being the smallest.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

Etna Safety Fuse.

THIS superior article for igniting the charge in wet or dry blasting, made with DUPONT'S best powder, is kept for sale at the office and depot of

REYNOLDS & BROTHER,

SOLE Manufacturers,

No. 85 Liberty St.

NEW YORK.

And in the principal cities and towns in the U. States.

The Premium of the AMERICAN INSTITUTE was awarded to the Etna Safety Fuse at the late Fair held in this city.

November 3, 1843.

ly

UNION WORKS,

North street, opposite the Railroad Depot,
BALTIMORE.

Poole & Hunt,

Manufacturers of Steam Engines and Mill Gearing, Machinists' Tools, and all kinds of heavy and light Machinery.

Also put up Arrangements of Wrought Iron Pipes for heating buildings and conveying steam or water. Castings of every kind furnished at short notice.

Every exertion will be made to insure the satisfaction of customers.

Patent Machine Picket Fence

SIX DIFFERENT STYLES of this fence are now made by patent machinery; and is by far the most economical fence for Railroads, Farms, Yards, etc., ever yet offered to the public, costing only from 4 to 30 cents per foot, according to pattern; and is so put up as to be shipped at a trifling expense. Full particulars will be furnished, by addressing the subscriber, to whom all orders should be sent.

N. STRATTON, Troy, N. Y.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 136 NASSAU ST., NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.

SECOND QUARTO SERIES, VOL. VII., No. 24]

SATURDAY, JUNE 14, 1851.

[WHOLE No. 791, VOL. XXIV.

ASSISTANT EDITORS,

J. T. HODGE, *For Mining and Metallurgy.*

GEN. CHAS. T. JAMES, *For Manufactures and the Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTE & Co., 136 NASSAU ST.

Saturday, June 14, 1851.

Ohio.

Belpre and Cincinnati Railroad.—The ceremony of commencing work upon this important line of railroad, was celebrated by a grand barbecue, at Chillicothe, on the 2nd instant. The occasion called together from eight to ten thousand people. The multitude organized, by the choice of the following persons to act as officers, viz.:—

Judge John Foster, President; Hon. W. Creighton, George Renick, sen., Esq., Dr. John Coates, John Sample, T. Woodmansee and Simon Ratcliff, Esquires, Hon. John Crouse, Col. White Morgan, and James McCoy, Esq., Vice-Presidents; and M. A. Patterson, George Armstrong, A. Bookwalter and James Ingham, Secretaries.

The meeting was addressed by a number of gentlemen, in a strain suited to the importance of the event. From the speech of Wm. P. Cutler, Esq., President of the company, who spoke at some length, and gave a detailed account of the present

condition and prospect of the road, we make the following extracts:—

The great superiority of this route, for all southwestern trade and travel, is readily seen, from the following statement of distances:—

From Cincinnati, by way of Columbus and Wheeling, to Baltimore..... 651 miles.
From Cincinnati, by way of Marietta and Middle Island..... 582 "

Difference in favor of Belpre and Cincinnati road..... 69 "

From Cincinnati to Philadelphia, by way of Pittsburgh..... 683 "

From Cincinnati to Philadelphia, by way of Marietta and Hempfield road. 673 "

Difference in favor of B. & C. road.... 10 "

From Cincinnati to Philadelphia, via Columbus and Hempfield route..... 677 "

Difference in favor of B. & C. road.... 4 "

Placing it within our power to control the business to Baltimore, and to enter with decided advantage, the competition with other routes for New York and Philadelphia.

Our advantage over the Lake route and New York and Erie road, from Cincinnati to New York, will be 109 miles.

The immediate purpose of the company is to connect Cincinnati with the Ohio river, a distance of 188 miles. This will be secured, by using, for the present, a portion of the Little Miami road, at least as far as Milford—leaving 175 miles for construction.

The line will pass very centrally, through twenty-six of the southern counties of Ohio, and will offer them the nearest seaboard market for their produce. The following companies have obtained charters, for connecting with us, under most of which it may be expected that roads will be built at no distant day:—

1st.—Muskingum Valley Railroad Company..... 60 miles.
2d.—Franklin, Pickaway & Ross Co..... 44 "
3d.—Dayton, Xenia & Belpre Co..... 52 "
4th.—Ripley & Leesburg Co..... 65 "
5th.—Scioto & Hocking Valley Co..... 125 "
6th.—Iron Company..... 20 "
7th.—Gallipolis, Jackson & Chillicothe co. 55 "
8th.—Pomeroy & Athens Co..... 20 "

Making 441 miles of tributaries;—to which might be added the extension of our line, as authorized by our charter, to connect with the Hempfield road, at Wheeling, a distance of 80 miles.

Having thus stated the general characteristics of the work, the important enquiries will be pressed by every prudent man;—*have you the money to build with?* and, *will it pay when built?*

It is well to premise, by saying *distinctly*, that we do not indulge in the vain and ruinous fancy, that the road is to be built *without money*, or, exclu-

sively, or even mainly, with *other people's money*. We expect that *your own money* must just be laid down in the enterprise, as a basis for its credit, and a guaranty that it will be prudently managed, in construction, and carefully looked after when completed. It is a well established commercial rule—as unyielding as the laws of the Medes and Persians—that any railroad company, asking credit upon their own bonds, must show an amount, *actually expended in the road, equal to that which is asked for*. Any attempt to evade this rule must result in a ruinous usury.

To construct the 175 miles necessary to form a connexion with Cincinnati, at \$20,000 per mile, will require \$3,500,000, one half of which, \$1,750,000, we expect to secure in subscription to the capital stock of the company, and rely upon the following sources:—

Ross County Subscription.....	\$100,000
Individual Stock Subscribed.....	160,000
Sub. of 25 per cent by Contractors, on work done.....	80,000
Athens County Subscription.....	100,000
Subscriptions West of Greenfield.....	100,000

Total on hand.....	\$540,000
Additional west of Greenfield, of which \$50,000 is guaranteed.....	150,000
Ross Co. subscription to be voted on the 31st May.....	200,000
Vinton County, authorized to vote.....	100,000
Athens do. do. do.....	100,000
Towns on the route, do. do.....	80,000
Washington Company, \$150,000 is already authorized.....	350,000
From Cincinnati and individuals.....	300,000

Total, from above sources, being $\frac{1}{2}$ entire cost.....\$1,820,000

With this array of means, from sources so reliable, the board of directors are encouraged to press forward their work, not doubting that credit, upon fair terms, can be obtained for the balance required.

A brief statement of anticipated profits must suffice;—as I desire to encroach as little as possible upon the more valuable time of gentlemen from abroad, who are to address you to-day.

We rely for a profitable business, first upon the trade and travel of one of the finest agricultural districts in the country, or the world, through which the road will pass.

2nd. Upon the immense transportation which will be secured to the road, from a thorough development of the mineral resources of counties east of the Scioto—inevitably resulting from the construction of this great thoroughfare. This item of business is peculiar to the route—indeed, can hardly be claimed, to any great extent, by any other western road.

The twenty-six counties, through nearly every one of which either the main line or tributaries will

pass, present the following summary of resources, as taken from authentic reports:—

Pop. in 1850, 687,428, more than one-third of State.
 Horses, " 164,670
 Cattle " 282,674
 Hogs " 617,090
 B.wheat " 9,032,000
 Bu. Corn " 24,458,000

Total value in 1850, \$170,915,611—equal to one-third of State, without Cincinnati.

As an illustration of the advantages of the road to farmers, it may be stated that an addition of ten cents to the value of each bushel of wheat and corn, would make \$3,349,000, enough to build the road in one year. Add one cent to the value of each bushel of these articles, would give \$331,900, equal to ten per cent. per annum, on the cost of construction. Add \$1.50 each to the value of cattle and hogs, and it will build the road in three years.

The leading articles of breadstuffs and provisions, annually sent to eastern cities from Cincinnati, is equal to 153,000 tons, sufficient of itself to justify the construction of a road to the seaboard for its accommodation. The amount now paid only for freighting these articles, is not less than 2,000,000 per annum. The ability of a railroad, to compete for a handsome share of this business, may be inferred from the fact, that the present cost of transporting flour to New York, from Cincinnati, Chillicothe or Marietta, is not less than \$1.25 per barrel. At the rate of 25 cents per barrel for every 200 miles—a prevailing rate upon eastern roads—it can be carried, by our line, from Cincinnati to New York for less than a dollar, and to Baltimore for less than 75 cents. From the unrivalled fertility of the agricultural district, (yielding one half the corn crop of the State) to which a seaboard market will thus be opened, as well as the advantages in distance clearly offered to the traveller, it must be quite manifest that the entire trade and travel of the southwest will be secured to the road.

The second item of income is looked for from the passage of the road through the finest mineral (coal iron, &c.) region in the United States. This is claimed for it, not only on account of the extent and quality of the deposits, but from the fact that its proximity to the most abundant supply of provisions, as well as market for its own products, with security from foreign competition, equal, at present prices of iron, to thirty per cent. ad valorem duty, renders it the most inviting field for mining and manufacturing enterprise, that can be offered in the whole country.

The following estimate of the amount of business, which may be fairly claimed for this road upon its completion to the Ohio river, is not beyond the resources of the country to supply, viz:—

Transportation of agricultural produce, live animals, &c., equivalent to \$100,000 the entire length of road, at \$2.50 average	\$475,000
150,000 tons coal, iron, stone, lumber, &c., westward to Cincinnati and other markets, at \$1.50 average	225,000
100,000 tons same class freights eastward to Ohio river, distance average 40 miles ..	80,000
Receipt for passengers	500,000
	\$1,280,000
Deduct one-half for working expenses	640,000

Net income

\$640,000

equal to 17 per cent. upon the cost, at \$20,000 per mile.

With such prospects, not only of commanding the requisite funds for the speedy construction of the road, but of a most profitable return, I trust that the strong sympathies of southern Ohio, which have hitherto clustered around this enterprise, will still be continued for its support—that as the "People's Line," it will be borne forward upon their strong shoulders, to a rapid completion. I hope that when you leave this place you will adjourn—adjourn to meet again (unless an earlier day is fixed) on the 4th of July, 1851, FOR A RIDE IN THE CARS FROM CINCINNATI TO THE OHIO RIVER.

The assemblage was further addressed by Professor E. D. Mansfield, and George E. Pugh, of

Cincinnati, and Hon. J. L. Taylor, of Chillicothe, but our limits do not allow us to give any portion of their remarks.

This great line of railroad is now fairly under weigh; we have only to look at a map to be struck with its vast importance. It will constitute the southern link of the great through line of railroad east and west. The company is now in possession of ample means to push forward the whole line with vigor, and we confidently expect to see the whole road opened in three years from the 4th of July next.

The Change in Locomotion.—Ohio in 1812, and Ohio in 1851.

There is not, in all the physical changes of the world produced by Human Power, so great a change as this day records in the Locomotive facilities of the people of Cincinnati. We say of "Cincinnati," for reasons which will appear in our story. To-day the Erie railroad is opened from Dunkirk to New York. It records a triumph in the progress of physical civilization, of which we know no parallel. Let us see what this change is. We observe then, that by using due diligence, in reference to the connexion of cars, boats, &c., a traveller who embarks at Cincinnati may reach New York in forty one hours. Thus, the departure and arrivals will be very near as follows:—

Leave Cincinnati	5 h. 20 m. A. M.
" Cleveland	7 h. P. M.
" Dunkirk	7 h. A. M.
Arrive at New York	11 h. P. M.

This is allowing 1 h. 40 m., at Cleveland; 1 h. at Dunkirk, and 1 h. longer than the express train on the Erie railroad,—making an allowance of 3 h. 40 m. beyond what is claimed as to speed of the lines; but, on the other hand, allowing for a regular connexion, less than two days will be at any rate, the trip to New York. Such is the event of the day.

Now, let us go back and take a glance at a Cincinnati gentleman leaving this (then country town) in 1812, to see his relatives in New York. No stage then run this side of Carlisle, (Pennsylvania)—and no steamboat on the river, and a keel boat, (the best water conveyance of that day) might get you to Wheeling in three or four weeks! No stage, no steamboat, no rail car,—there remains no resource for the gentleman to take his wife and children, but to buy his horses and some sort of wheel carriage, hire his driver, and get along as he can. He does so, and his first outlay is something like \$500 for his horses and carriage. Then he hires a driver at \$15 a month, and expenses paid. Then he must lay in an assortment of tools, consisting of axe, hammer, screw-driver, ropes, halters, and tar bucket, with some nails and screws. After this is done, a pair of pistols, a supply of ammunition, and two or three blankets must be provided. In the wardrobe trunks must be included several pair of sheets, if there is any expectation of sleeping any where!

We may suppose the party now to set out, with some hopes of ultimately seeing New York,—a journey full equivalent to one now to the Sandwich Islands. Many are the obstacles they meet with, but we will recite but two or three by way of samples. The old road leads by Williamsburg to Chillicothe, and Lancaster to Wheeling. They get along tolerably well to beyond Williamsburg, where they plunge into the Whiteoak Swamp. Then for twenty miles the road is an uninterrupted railway,—the rails laid the wrong way, and composed of large logs. Thump!—thump. Bang!—bang! "Oh! my back!"

In very despair, wife and children get out, and crawl over the logs, till the last remnants of shoes and stockings are visible through the mud plastering! At length a solitary light gleams in the swamp—and the party arrive, tired, hungry, wet, and cross, at the only log house within fifteen miles. But, when there, there is some consolation in the hearty welcome which awaits you, and the cheerful company of travellers arrived before you, and the loaded table, which is covered with venison, wild turkey, corned beef, hot coffee and fruit; in fine such a feast as princes might desire to look

upon, but which princes cannot get, because they have not the keen appetite, which was its sauce.

We need not recount scenes like these, which day after day were repeated, till the party arrived amidst the German settlements of East Pennsylvania. We will suppose them arrived, at Jersey city. Do you think they will drive into a steam ferry in two minutes? No, sir. Sail ferries were not yet abolished. The party are to go over in a half crazy, squally kind of a craft, called a Perianger—a schooner with slab sides. The party are to have their horses and carriage put in by main force, and then to be got over as they can, in a high wind, tossing about this petty vessel!

The journey takes a month, and the reader may imagine, under such circumstances, how much of time and money are consumed before the family returns to their home in Ohio. Behold the contrast! Forty hours and twenty dollars take you to New York!

We hesitate not to say, that the danger of a journey to California is less, and the ease of it much greater than was a journey from Cincinnati to New York forty years since. Civilization is now doing her work over this entire continent. Happy are they who receive her smiles and enjoy her gift! But, happier yet will they be, if when passed from the rude era of the Pioneer to that of a superior civilization, they shall retain something of the virtue and simplicity, the hardihood and integrity, which gave that Pioneer the power to become the founder of an empire.—Cincinnati Gazette.

Extinction of Fires in Mines.

A great success has been achieved in England by Mr. Goldworthy Gurney, in the extinction of a burning colliery about seven miles from Sterling. The fire has been raging for about thirty years over an area of twenty-six acres. This accident occurs frequently in the coal mines, and is of course immensely destructive to property. In the present instance a value of nearly \$1,000,000 was endangered, and two years since, \$7,000 was lost by a fire breaking out in a coal-pit in Ayrshire, which has not yet been subdued, and extends over fourteen acres, burning and destroying the wood on the surface. It is now undergoing extinction by Mr. Gurney's process.

In the present case a sum of \$80,000 was spent in surrounding the fire with a puddle-wall to prevent its extending to other works. This took five years in building, and was completed nineteen years ago. The proprietor, the Earl of Mansfield, has expended about £200 a year in keeping it up and supporting over-lookers. Men, learned in the matter, have agreed in the utter impossibility of extinguishing the fire, until Mr. Gurney broached his theory of pouring in *choke damp*. It was apparently so impossible that the idea only commended itself to the most scientific.

Mr. Gurney, at the invitation of the Earl of Mansfield, went down and inspected the mine. The difficulty to be apprehended in the treatment was that the vast magazine of heat would continue, and cause the re-kindling of the mine upon the re-introduction of the fresh air. But towards the end of March Mr. Gurney commenced with two assistants. The machinery for conducting the experiment consisted of a high-pressure steam boiler, about sixty feet of inch gas-pipe, and a small cone for the high-pressure steam-jet at the end of it, which jet was placed at the proper striking distance from a cylinder of sheet iron one foot in diameter, and about nine feet long. The cylinder was the passage between a coke furnace and the downcast shaft, through which the air was driven by the force of the steam-jet, and, by a simple contrivance, they were able to blow in either the air passed through the furnace, or fresh, at pleasure.

There were some obstacles in the shaft, and Mr. Gurney's assistants descended, Mr. Gurney blowing them in fresh air from above, and there they cleared away two old iron doors into the waste, and knocked a hole through an old puddle-wall, and then, hearing a good deal of rumbling and rushing, as if the roof were falling, they thought it more prudent to retreat, as they had effected their object of opening a passage for the gasses into the burning waste.

The obstacles having been cleared away and a free passage obtained, the shaft was covered with

No debt shall hereafter be contracted by the legislature, unless such debt shall be authorised by a law providing for the collection of an annual tax or taxes sufficient to pay the interest on such debt as it falls due, and also to discharge the principal thereof within fifteen years from the time of contracting the same; and the taxes laid for this purpose shall not be repealed or applied to any other object until the said debt and the interest thereon shall be fully discharged, and the amount of debts so contracted and remaining unpaid shall never exceed one hundred thousand dollars. The credit

of the State shall not, in any manner, be given or loaned to or in aid of any individual, association or corporation, nor shall the General Assembly have the power, in any mode, to involve the State in the construction of works of internal improvement, or in any enterprise which shall involve the faith or credit of the State, or make any appropriations therefor. And they shall not use or appropriate the proceeds of the internal improvement companies, or of the State tax now levied, or which may hereafter be levied, to pay off the public debt, to any other purpose, until the interest and debt are fully paid, or the sinking fund shall be equal to the amount of the outstanding debt; but the legislature may, without laying a tax, borrow an amount never to exceed fifty thousand dollars, to meet temporary deficiencies in the treasury, and may contract debts to any amount that may be necessary for the defence of the State.

Public Debt of Canada.

The following is a correct statement of the public debt of the Canadas, as it stood on the 31st of January last:

The debt amounted to.....\$18,049,875
The annual interest payable thereon to 877,674

Of the debt, \$14,813,700 are payable in England, also the interest thereon; \$3,206,175 are payable in Canada.

\$7,300,000 were borrowed at 4 per cent.; \$5,931,860 at 5 per cent.; \$4,818,015 at 6 per cent.

There are, in addition to the above debt, \$732,000 borrowed for various purposes, chiefly on the credit of Canada, and for which its government is responsible, making together a debt of \$18,782,565, on which \$921,635 of annual interest is payable. The Province also guarantees 5 per cent. dividends to the stockholders on certain railways.

The Cars upon the West Bank of the Kentucky.

On Saturday last, just at 12 o'clock, the first passenger train of cars from Louisville arrived upon the bank of the river opposite Frankfort. The sight of the iron horse, by which he announced his arrival, sent a thrill of joy through the hearts of those energetic and public spirited citizens who have so long labored for the completion of the road, and seemed to quicken the pulses of nearly all our business men. We hail it as an important era in the history of Frankfort and of Kentucky.—*Commonwealth.*

The Tehuantepec Route.

Major Barnard, of the U. S. Army, who, with others, has been engaged in surveying a route for a railroad across the Isthmus of Tehuantepec, from the Atlantic to the Pacific, writes to J. P. Benjamin, Esq., Chairman of the New Orleans Committee who have the subject in charge, that the route is entirely practicable for a railroad, with grades not exceeding 40 or 50 feet to the mile. He says:

Taking the whole extent of the road into consideration, the ground is remarkably easy, and timber, stone, etc., are at hand in abundance; and the right of way, (so serious an item in the United States), will have cost little or nothing. No estimate can be made at present, but I think that I am safe in saying that the means appropriated by the committee are ample. In relation to the lands connected with this grant, I think it safe to say a finer tract cannot be found in the world.

An immense number of invaluable productions (comprehending all, or almost all, the valuable productions of tropical climates) can be raised here with the greatest facility, while the forests abound with natural productions of great value. Throw in an enterprising population here, and the Isthmus would become the garden spot of the world.

In relation to opening a travelling route, I think it only necessary to establish steamers connecting with the two coasts, a small steamer or steamers on the river, and the horse or mule transportation across would soon be supplied. Passengers can be got across the Isthmus with such means in six or seven days from Minatitlan to the Pacific. There are people on the Isthmus ready to establish the land communication the moment the steamers commence running, so that this part of the business will give the company no trouble. In conclusion, there can be no exaggeration in saying that this is

THE route, and the one which will supersede all others; and, leaving out of consideration the value of the route, the value of the lands, and the local wealth to be produced would almost pay for the building of the railroad, and be an immense contribution to the commerce of New Orleans. I believe moreover, that no statement or estimate you have seen made as yet realises the full value of this route and grant; it can scarcely be appreciated. I would say, too, that the people on the Isthmus are all friendly to the enterprise, and that large subscriptions of stock can be obtained by an authorised agent. I should mention that rich beds of iron ore exist here, and that indications of silver are apparent.

North Carolina.

North Carolina Railroad.—The Board of Directors of the North Carolina railroad company have ordered the engineers to put the whole under contract before the 9th of July. It appears by the report of the engineer that the road has been surveyed and located, from the point of its connection with the Wilmington and Raleigh railroad—which will be a mile and an eighth south of Goldsboro, in Wayne county—to Charlotte, in Mecklenburg county. It will be 223 miles in length, and cost, with locomotives and cars, \$3,405,132. The location is by way of Raleigh, from whence it goes by way of Hillsboro, Greensboro, and Lexington, to Salisbury, and from Salisbury to Charlotte, by the Concord route, passing within a mile of that village. At Charlotte it connects with the Charlotte and South Carolina railroad.

Raleigh and Gaston Road.—We understand that the prospects for raising the stock necessary for securing the charter, are much more favorable than they have been. Large and enthusiastic meetings have been held during the past week in Warren-ton, Louisburg and Forestville, and arrangements made for obtaining subscriptions, which seem likely to be attended with success. The subscription now stands as follows:

Petersburg, pledged for.....	\$100,000
Amount taken.....	\$80,000
Granville, pledged for.....	50,000
Amount taken.....	30,000
Warren, pledged for.....	50,000
Amount taken.....	10,000
Franklin, pledged for.....	25,000
Amount taken.....	15,000
Wake, pledged for.....	75,000
Amount taken.....	55,000

Connecticut.

The Connecticut House of Representatives have passed an act incorporating a road to run from the terminus of the Norwich and Worcester railroad, in the city of Norwich, through the towns of Bozrah, Montville, Salem, East Haddam, Lyme and Saybrook, to a point on the New Haven and New London railroad, in the town of Westbrook.

New York and New Haven Railroad.

We are glad to notice that the proprietors of the New York and New Haven railroad are causing another track to be laid along the line of the road. The distance between Bridgeport and Fairfield, and from the Housatonic river to Bridgeport, is already supplied with a double track, and the portion from this city to the river is now contracted for by Messrs. King & Miller, and is to be commenced immediately. A section of some six or eight miles is now completely graded between Mamaroneck and New Rochelle, and the work of grading between Stamford and Darien, for the laying of the additional track, was commenced last week by Messrs. Hoyt & Bishop. When the various sections now under contract are completed, about two thirds of the distance between this city and New

York will be laid with a double track—and it is believed that the entire road, in the course of the next two years, will be furnished with the additional track.

Another improvement upon this road, which will materially add to the comfort of passengers, is the placing of *oyster shells* upon the track, on different portions of the road. This is said to be the most effectual remedy against dust, and so far as it has been tried has proved successful.

Virginia and Tennessee Railroad.

The Lynchburgh Virginian says that two thousand men are at present employed on the Lynchburgh and Tennessee railroad, and the first sixty-four miles are expected to be opened during the present year. The second division, from Salem to Wytheville, is nearly all under contract, to be finished by the close of 1852. The third division, ending at the Tennessee line, will be put under contract in the fall, and is expected to be in operation before the end of 1853.

Buffalo and Brantford Railroad.

This company has been organised for the purpose of building a railroad from Buffalo to intersect with the Great Western of Canada. Hon. James Wadsworth has been chosen President, and A. D. Patchin and James Wadsworth, of Buffalo, Alexander Douglass, of Waterloo, and A. Hutchinson and Mr. Crotehit, of Brantford Directors.—The route is about 85 miles in length.

Massachusetts.

Ware River Railroad.—A preliminary meeting was held in Barre on Monday, the 2d inst., to take measures for organising the "Ware River railroad corporation." There was a good attendance of the friends of the road, and quite an animated spirit manifested. Hon. Orrin Sage, of Ware, was chosen chairman of the meeting, and S. A. Whitney secretary. Various committees were chosen, for preparing bye laws, procuring subscription books, obtaining subscriptions of stock, etc. Adjourned to meet in the same place on Wednesday, the 18th instant.

Indiana.

Peru and Indianapolis Railroad.—We have received a copy of the recent exhibit of the financial condition of the above company, which is engaged in the construction of a road from Indianapolis to Peru, on the Wabash canal, a distance of 72½ miles. The first division to Noblesville, a distance of 22½ miles, has been completed at a cost of \$144,504 61, not including machinery. The estimated total cost of the road to Peru is \$445,463 35, or \$6,144 32 per mile. The total means of the company, including \$13,000 received on its convertible bonds, are \$215,866, leaving \$71,361 39 applicable to the division from Noblesville of 50 miles, which is estimated to cost \$317,016 82. It is stated that contractors on this part of the line will take a portion of their pay in stock, so that only \$200,000 will have to be raised to complete the road.

The cost of this road is far below that of any railroad in the United States. This is owing in part to the use of a flat bar, and partly to the extremely favorable character of the route. A new kind of wooden superstructure is used on this road. It secures a continuous bearing, and obviates many of the objections to the use of the light bar. We have seen a model of the superstructure used here, which strikes us as admirably adapted to roads in the west, where iron is expensive, and wood abundant.

The above road intersects with the Wabash canal 164 miles from Toledo, and will form the best route of any road projected in Indiana for product seeking an eastern market. We copy so much from the exhibit as speaks of the business prospects of the road.

New York is the great commercial emporium of the United States. From the capital of our State, the Indianapolis and Bellefontaine railroad is the shortest projected line of road connecting with the lake in the line to New York, and hence the produce of central Indiana, seeking an eastern market, must find its way over that line to the lake other considerations balancing. But what are the facts in the case? From Indianapolis to the lake, by way of the Bellefontaine road, is 240 miles.—From Indianapolis to Peru is 73 miles, and from Peru, by way of the canal to the lake, is 164: making the distance from Indianapolis to the lake, by way of Peru, 237 miles. The cost of transporting a bushel of wheat from Peru to the lake on the canal is 11 cents, and from Indianapolis to Peru on the road, at the same rate as charged on the Madison line, it would be 7 cents; making 18 cents.—From Indianapolis to the lake, over the Bellefontaine road, at the same rate as charged over the Madison line, the freight would amount to 24 cts.; making a difference of six cents per bushel in favor of the Peru line. Running up the Bellefontaine line from Indianapolis, 30 miles, and annexing it to the Peru line, as an arm or branch of that road, the expense of transportation is equalized, and at such points the trade will inevitably divide. If then, upon the Peru line, is necessarily drawn the produce business of the country 30 miles from Indianapolis, on the line of a thoroughfare direct for the eastern market, the produce of the State, within the same distance of the capital in all other directions, must, with equal or greater certainty, fall upon that line also.

The superficial area of this circle around the capital, tributary to the Peru line, during canal navigation, is 2,827 square miles. The territory not included within this circle, and between it and Peru for 15 miles on either side, (and with equal certainty tributary to the Peru line) embraces 1200 square miles, which make 4027 square miles.—Suppose, for the calculation, that but 80 acres to the 640, or to the square mile of the above is cultivated. Suppose further, for the purpose of convenient calculation, that the different productions are thrown into wheat, and that it yields but 12 bushels per acre, six bushels of which only are thrown upon the Peru line during the six months of canal navigation—the other for home consumption and shipment over the Madison line to the river, south. We have then 1,932,960 bushels, at, as an average, say, of 5 cents per bushel for transportation; making the sum of.....\$96,648 00
If the outward passenger business but equal one half of the six months' outward freight, say..... 48,324 00
And if the whole of the other business, both ways for the full year, in both freight and passengers, but equal the above sums, we have as total receipts, 189,044 00
Deduct for ordinary repairs, and the expense of the running department, 40 per cent of the proceeds, and we have as net proceeds.....173,966 40
which is per annum, exceeding 39 per ct. of \$445,463 35—the cost of the road.

This per cent, resulting from calculations based upon existing facts, and the inevitable and unerring laws of trade, appear, at first blush, wild and inconceivably beyond the limit of anything reasonable in a comparison with similar improvements elsewhere. It will be observed, however, that the amount of business estimated is not large, nor the proceeds great, and that as a per cent upon the cost even of the Madison line, it must fall below their dividends. For cheapness, the road is unprecedented.

The above estimate of receipts and profits is undoubtedly extravagant, for the reason, that public sentiment will allow no company to make such an exorbitant profit, which must always be kept within reasonable and satisfactory limits; but we have

no doubt that the above road will yield an ample return upon its cost, one that should satisfy the most avaricious. With the small amount wanted by the company on credit, we see no reason why the only remaining division should not be pushed rapidly forward. The route is most favorable.—The company would find no difficulty in the present state of the market of readily negotiating its bonds for any balance that may be wanting.

The officers of this company are:

Directors—John Burk, W. W. Wright, Marion county; J. D. Stephenson, S. Dale, E. Cottingham, Elihu Pickett, Hamilton county; Wm. Dickson, Tipton county; C. D. Murray, John Bohan, Peter Hersleb, Howard county; J. M. Defrees, Ira Mendenhall, W. J. Holman.

President—John Burk.

Secretary—J. T. Cox.

Treasurer—E. Cottingham.

Engineer—W. J. Holman.

South Carolina Railroad.

We learn from the Charleston Courier that the Carolina railroad company commenced to run double passenger trains on the 1st inst.

1. The accommodation train will leave Charleston at 8 a.m., and arrive at Augusta at 3½ p.m.—Returning, it will leave Augusta at 6 a.m., and reach Charleston at 2 p.m.

2. The fast train will leave Charleston at 11½ a.m., and reach Augusta at 5½ p.m. Returning, it will leave Augusta at 10 a.m., and arrive at Charleston at 4 p.m.

The Georgia road also commenced, on the same day, to run two trains as follows, viz:

1. A day train leaving Atlanta and Augusta at 6 a.m., and arriving at 5 p.m.

2. A night train leaving Augusta and Atlanta at 5 p.m., and arriving at Augusta at 4½, and Atlanta at 5 a.m.

Railroad Subscriptions.

The county of Bourbon, Kentucky, has subscribed \$150,000 to the Maysville and Lexington railroad, and \$100,000 to the Covington and Lexington railroad. The authorities of the town of Parkersburgh, Va., have determined to take \$50,000 in the stock of the North Western railroad company.

Tolls on the Wabash and Erie Canal.

The collector of tolls on the Wabash and Erie canal, at Toledo, under date of May 31, gives the following important information to forwarders:

The rate for railroad iron and car wheels has been fixed for the Wabash and Erie canal at 2½ mills per mile, for 1000 lbs., and for railroad spike and locomotive engines at 4 mills per mile for 1000 lbs. in the State of Ohio to the State line.

Cleveland, Ohio.

The Cleveland Herald contains an interesting article, the object of which is to show the advantages which that city possesses to constitute her a great manufacturing town. Coal of the best quality for steam and manufacturing purposes, can be delivered there in any quantity for \$2 per ton. The Herald claims that no other town on the lakes is equally favorably situated in respect to abundance and cheapness of fuel, which is now the chief and indispensable agent that man employs in the preparation of the raw material to the uses of life.—Around the upper lakes are probably the most valuable deposits of copper and iron that can be found in this country. As there is no coal about Lake Superior, it will soon be cheaper to transport the ores, particularly those of copper, to the fuel, than

to carry the fuel to the ores. Cleveland, too, is on the route which these metals must take, to find a market; an important fact in her favor. The Herald is of opinion that Cleveland will soon become the point where the copper ores of Lake Superior will be brought for reduction, and anticipates an important addition to her business from this source.

Cleveland we have no doubt is rapidly to become a great manufacturing, as well as a commercial city. She has every element of a great growth, possessing vast commercial, and in the abundance and cheapness of coal, vast manufacturing capabilities. She is so situated that she must always enjoy an immense country trade. Placed at the northern terminus of the Ohio canal, she is now becoming the focus of a number of extensive and important lines of railroad, radiating in every direction. The completion of these will secure to her everything she needs in the shape of commercial and business facilities, and we expect to see her increase during the next ten years, in a much more rapid ratio than has been her increase during the last ten. She will soon contend with Cincinnati for the great prize—the trade and business of the State.

Columbus, Urbana and Piqua and Indiana Railroad.

Col. Medary, one of the directors of the company constructing this road, during his recent visit here, spoke in the most confident terms of the early completion of this great work, from the capital of Ohio to the Indiana line, to intersect the Indianapolis and Bellefontaine railroad. Should this line, as contemplated, be made a continuous route, from the capital of Ohio to our city, so that travellers could take the cars at each capital, on a through route, and the road be run in six or seven hours, as it can be, it would certainly do an immense thorough passenger business, while its local business would be equal to any other road in the west, the country through which it passes being unsurpassed in fertility.—*Indiana Statesman.*

Dayton and Indianapolis Railroad.

The survey from the State line to Indianapolis has been completed; the contractors are now at work as far east as Centerville, and the whole line will soon be let.

By the 1st of January next the cars will be running from Terre Haute to Indianapolis, and in one year more we hope to see the open link between Indianapolis and Dayton closed up, which will give a continuous line of railway to the lakes, or to Philadelphia by way of Pittsburgh. It will then only remain for the people of Illinois and Missouri to construct the road across the former State, to unite Boston, New York and Philadelphia with St. Louis by railway.—*Indiana Statesman.*

New York.

Hudson River Railroad.—On the 10th inst. another section of the Hudson River railroad was opened for the conveyance of freight and passengers. The section extends from Albany to Oak Hill, nearly opposite Catskill, a distance of thirty seven miles. Steamboating, therefore, is reduced to the number of miles there are between Poughkeepsie and Oak Hill.

Louisville and Nashville Railroad.

The Louisville Journal of the 16th inst. says:—“The board of aldermen, at its session yesterday, passed an ordinance for subscribing \$1,000,000 to the Nashville and Louisville railroad company—\$500,000 to be paid by taxation, and the bonds of

the city; having thirty years to run, to be given for the balance."

Portland, Saco and Portsmouth Railroad.

The annual meeting of the Portland, Saco and Portsmouth railroad, took place at North Berwick, on the 2d instant. The annual report was read, from which it appeared that the road, after defraying the current expenses, repairing, and paying the usual dividends, has earned a surplus of \$15,000.

The directors chosen for the ensuing year are, Ichabod Goodwin, Portsmouth; Daniel A. Neal, Salem; Josiah Calef, Saco; John Howe, Brookline; Charles E. Barrett, Portland; John D. Lang, Vassalboro, and Thomas West, Haverhill.

At a meeting of the directors, Ichabod Goodwin, was chosen President, Charles E. Barrett, Clerk, and James Sweetser, Treasurer.

Ogdensburgh Railroad.

At the annual meeting of the stockholders of the Ogdensburgh and Champlain railroad, held at Rouse's Point on Monday the 2d inst., the following persons were chosen directors for the ensuing year:—

T. P. Chandler, J. W. Edmands, R. G. Shaw, B. T. Reed, of Boston, Mass.; Isaac Spalding, of Nashua, N. H.; Charles Paine, of Northfield, Vt. G. V. Hoyle, of Champlain, N. Y.; Hiram Horton, of Malone, N. Y.; John Leslie Russell, of Canton, N. Y.; George N. Seymour; H. Van Rensselaer, of Ogdensburgh, N. Y.; James H. Titus; Samuel J. Beals, of New York.

The directors are the same as last year, with the exception of S. J. Beals, of New York, in the place of Mr. Reddington, of Waddington, St. Lawrence county, deceased. T. P. Chandler was elected president of the road, and C. L. Schatter, superintendent.

Illinois Central Railroad.

The following is the programme determined upon by Col. Mason, for conducting the survey of the Illinois central railroad and branches. The whole work has been divided into seven sections, with a chief over each. The main stem from Cairo to Peru comprises the 1st, 2d, and 5th sections; the Chicago branch the 3d and 4th sections, and the Galena branch the 6th and 7th.

The following is the order:—1st section, A. T. Ormsby, Chief—headquarters, Cairo; 2d section A. T. Galloway, Chief—headquarters, Decatur; 3d section, L. W. Ashley, Chief—headquarters, Homer; 4th section, N. B. Porter, Chief—headquarters, Chicago; 5th section, H. Plank, Chief—headquarters, Bloomington; 6th section, T. B. Blackstone, Chief—headquarters, LaSalle; 7th section, B. B. Provoost, Chief—headquarters, Dixon.

New York.

Buffalo and New York City Railroad.—The *Attica Atlas*, speaking of the Buffalo and New York city railroad, formerly Attica and Hornellsville, says:—"Books were opened at Warsaw for subscriptions to the increased stock for extending the road to Buffalo, and \$41,000 were taken. The engineers and surveyors are now at work locating the line from Attica westward. Arrangements are being made for subscriptions to the balance of the stock, and the road will probably be all under contract by the 1st of July, and finished through to Buffalo by the 1st of January next." Commencing at Attica, the road passes through the towns of Alexander and Bethany, in Genesee county; Middlebury, Warsaw, Gainesville, Castile and Genesee Falls, in Wyoming; Portage and Nunda, in Livingston; Grove and Burns in Allegany, to Hornellsville. It is 58½ miles in length, and has an average grade of

45 feet to the mile. The road crosses the Genesee river less than half a mile below the village of Portage, at right angles—there being straight lines on both sides.

Albany and Schenectady Railroad Company.—The following gentlemen yesterday elected directors of this company for the ensuing year:—

Directors.—E. C. McIntosh, G. Y. Lansing, R. H. King, Lyman Chapin, H. Pumpelly, Augustus James, John T. Norton, R. H. Winslow, and Thos. Tilestone.

E. C. McIntosh was unanimously elected President, in place of John T. Norton, resigned.

G. Y. Lansing, Vice-President.

E. C. McIntosh, G. Y. Lansing, and R. H. King, Finance Committee.

The project of the Hamburg and Erie railroad is being urged on the attention of that part of the country interested, and a meeting has been held at Warren, Pa., at which strong resolutions were passed in favor of a road from Pittsburgh to Olean, on the New York and Erie railroad, along the valley of the Alleghany. A resolution was passed to open the books of subscription.

Hudson River Railroad.—The following gentlemen were yesterday unanimously re-elected directors of the Hudson River railroad company, for the year commencing June 9, 1851:—

James Boorman, Edward Jones, Gardner G. Howland, Japhet Bishop, Elisha Peck, Gouverneur Kemble, Cold Spring; Moses H. Grinnell, Wm. C. Redfield, Edwin D. Morgan, Drake Mills; Erastus Corning, Albany; James Hooker, Poughkeepsie; Hugh McClellan, Hudson.

At a subsequent meeting of the board the following officers were re-appointed:—

James Boorman, President; Edward Jones, Vice-President; George B. Butler, Secretary and Legal Agent; John M. Hopkins, Treasurer; Wm. C. Young, Chief Engineer; Oliver H. Lee, Superintendent. All other officers were re-appointed.

Rochester, Lockport and Niagara Falls Railroad Company.—The following persons were elected directors of this company for the ensuing year, at the annual election held on the 5th instant:—

Joseph B. Varnum, Freeman Clarke, Azariah Boody, Elias B. Holmes, Watts Sherman, Silas O. Smith, Roswell S. Burroughs, Edmund Whitehouse, Alexis Ward.

Joseph B. Varnum was re-elected President, and Alexis Ward re-elected Vice-President. The standing committee the same as the past year.

Watertown and Rome Railroad.—An election of directors of the Watertown and Rome railroad company, took place on Monday. The following named gentlemen were elected:—

William C. Pierrepont, Norris M. Woodruff, Orville V. Brainard, Samuel Buckley, Clarke Rice, William Lord, Smith Bartlett, Robert B. Dextater, John C. Cooper, Horace Dunbar, Calvert Comstock, Willis Phelps, Charles G. Harger.

Saratoga and Schenectady Railroad.—At a meeting of the stockholders of this road, held at Saratoga Springs on the 5th inst., the following gentlemen were chosen directors for the ensuing year:—

George R. Davis, John Cramer, Sylvester Norton, George M. Tibbits, E. F. Bullard, John P. Nazro, Wm. H. Warren, Le Grand B. Cannon, Thomas White.

Oswego and Syracuse Railroad.—The annual election of directors of the Oswego and Syracuse railroad, was held at the office of the company on Monday the 2d instant. The following gentlemen were chosen:—

Holmes Hutchinson, T. S. Faxton and Alfred Munson, of Utica; R. H. King, of Albany; Sylvester Doolittle, F. T. Carrington, Joel Turrell, Luther Wright, and William J. Pardee, of Oswego; E. B. Wicks, T. T. Davis, Allen Munroe, and John Wilkinson, of Syracuse.

At a subsequent meeting, on the same day, Holmes Hutchinson was unanimously elected President of the company for the ensuing year.

Rochester and Syracuse Railroad.—The annual meeting of the stockholders of this company was held at Canandaigua on Wednesday, when the following directors were chosen:—

Henry B. Gibson, Joseph B. Varnum, James J. Van Allen, John Wilkinson, John H. Chedell, Nathaniel Thayer, Wm. F. Weld, Horace White, Jacob Gould, Joseph Fellows, Charles Seymour, Lewis Brooks, Robert H. Ives. Henry B. Gibson was re-elected President.

Ohio.

Junction Railroad.—At a meeting of the stockholders of this company, held at Flyria, on the 2d inst., the following persons were elected directors for the ensuing year, viz.:—Ebenezer Lane, Geo. W. Reynolds, Willard V. Way, Ahira Cobb, Herman Ely, Jr., Nahum B. Gates, Freeland T. Barney, Christopher C. Keech, Earl Bill, Cornelius S. Russell, R. B. Dennis, D. P. Rhodes, and Elijah Dewitt. E. Lane was chosen President, and E. Dewitt, Treasurer.

The estimated cost of construction from Ohio city to Sandusky, is \$580,000. From Sandusky to the Maumee River at Perrysburgh is \$180,000. These estimates are for a permanent structure of the first class.

The resources now in hand are estimated at \$630,800, which, with the stock the contractors agree to receive, is more than sufficient. An offer to supply timber for bridges, for stock at par, was made at Elyria, and arrangements already exist for the equipment of the road whenever the work is ready. The prospects, therefore seem to justify the expectation of a certain and early completion of the road.—*Sandusky Register*.

New Jersey.

New Jersey Railroad.—The following gentlemen have been unanimously elected directors of the New Jersey Railroad and Transportation company for the ensuing year: John S. Darcy, Dudley S. Gregory, John P. Jackson, Adam Lee, John Acken, Stephen Whitney, J. Phillips Phoenix, Abraham G. Thompson, Henry R. Benson.

The stockholders passed resolutions in favor of encouraging a lateral railroad to Belleville and Bloomfield, and of expediting the mail lines from New York to Philadelphia via New Brunswick.

Pennsylvania.

Sunbury and Erie Railroad.—At an adjourned meeting of the stockholders of the Sunbury and Erie railroad company, held at the building of the Reading railroad company, No. 73 South 4th st., Philadelphia, on Saturday, the 24th of May, the following gentlemen were elected officers of the company:

President—Daniel L. Miller, Jr., of Philadelphia. Managers—John J. Ridgway, Joseph B. Myers, John J. Kane, Francis N. Buck, Wm. D. Kelly, Samuel J. Reeves, Wm. B. Reed, all of Philadelphia; Robt. L. Fleming, of Clinton county; Wm. A. Irvine, of Warren county; James L. Gillis, of Elk county; James Niles and John Galbraith, of Erie county.

In addition to the choice of officers, the following resolutions were adopted by the meeting:

Resolved, That the stockholders do hereby accept a further Supplement to an Act entitled "An Act to incorporate the Sunbury and Erie and Pittsburgh and Susquehanna railroad company," passed by the legislature of Pennsylvania, February 12th, 1846, in relation to the time of commencing the road, and its location, etc.; and also,

Resolved, That the stockholders do hereby accept "A further Supplement to any Act, to incorporate the Sunbury and Erie and Pittsburgh and Susquehanna railroad company," passed by the legislature of Pennsylvania, March 14th, 1846, in relation to the election of a president and managers of this company; and do hereby approve of and confirm the call for the said election.

Ohio.

The Cincinnati Enquirer says there is every prospect that the whole line of the Cincinnati, Hamilton and Dayton railroad will be completed from that city to Hamilton in August next. The Dayton Journal predicts that the contractors on that portion of the line will not be behind the others, and believes that "when they are closing up the last section at Hamilton and Cincinnati a locomotive will be on the spot ready to pass into the city." We are also informed by the Journal that at a late meeting of the stockholders of this road, the following officers were elected:

President, S. S. L'Hommedieu; Secretary, A. M. Taylor; Directors, Wm. Burnett, J. C. Wright, Eden B. Reeder, of Cincinnati; John Woods, of Hamilton; J. D. Philips, of Dayton; Joseph B. Varnum, of New York.

R. M. Shoemaker, Esq., has been re-appointed engineer.

Steubenville and Indiana Railroad.—We are authorized to state, says the Steubenville Herald, that at the last meeting of the directors of the Steubenville and Indiana railroad company, the location of the road was determined.

Arrangements are now making to render immediately available, the subscriptions to the capital stock of the company, when we may expect the road to be pushed forward with as great rapidity as practicable. The route determined upon leaves Steubenville, and proceeds by the valley of Cross Creek, and through Ulrichsville to Coshocton.—We have been furnished with the following resolution of the board of directors, which to our mind indicates that this great work will not only be speedily commenced, but carried on with energy.

Resolved, That the chief engineer be directed with his corps, to prepare the road in suitable sections for letting contracts for graduation, masonry and bridging, from Steubenville to Coshocton, and that the work upon the same be prosecuted to completion as soon as practicable.

We congratulate our citizens, who feel so deeply interested in this undertaking, at the results which have followed their efforts. About 78 miles of road from Steubenville to Coshocton, will now shortly be put under contract, with a capital stock of near a million of dollars to drive the work on. And what is still more gratifying, is the reflection that the stock is subscribed along the line of the road.

Alabama.

A State Convention of the friends of railroad improvement was recently held at Mobile, at which the Hon. W. R. King (Vice President of the U. States) presided, assisted by James Battle, Esq., of Mobile, and Dr. P. P. Coleman, of Perry county, as Vice Presidents. F. B. Clark and W. J. Ledyard acted as Secretaries. The meeting was addressed by its President, and by P. Phillips, of Mobile, J. W. Lapsley, of Selma, President of the Alabama and Tennessee railroad, J. P. Parham and W. S. Burr, of Selma. The following preamble and resolutions were adopted:

The experience of this, as of all other countries, demonstrates that the best means of developing and advancing the agricultural, mineral or commercial wealth of a State, is through a well devised system

of internal improvements, bringing extreme and important points into close communion, and thus rendering the means of communication rapid, and the transit of travel and freight cheap.

The construction of such a system properly takes its rise in individual enterprise, but from its importance and general influences, properly recommends itself to the consideration, also, of the government. This convention, therefore, as expressive of its sentiments, adopts the following:

Resolved, That it is the duty of the State of Alabama, as it is clearly her interest, to lend a fostering aid and countenance to those great works of internal improvement which now engage the attention and action of her counties. But in so doing, we do not ask, neither do we desire, that the credit of the State be put in jeopardy, or any new debt created to the embarrassment of her finances.

Resolved, That as by the sixth section of the act of Congress preparatory to the admission of Alabama into the Union, it is declared that five per cent. of the proceeds of the lands within her borders was set apart for certain improvements, we consider that the State is bound by the obligations of good faith to administer such funds as have been received from the General Government by virtue of this stipulation, and to see that they are appropriated in conformity with the provisions of the law by which they were dedicated.

Resolved, That for the purpose of more effectually carrying out these views, a committee of ten be appointed by the chair, to prepare an address to the people of Alabama, and generally to attend to all matters connected with the objects of this convention.

The following gentlemen were appointed the committee to prepare an address to the people of Alabama:

Francis B. Clark, P. Phillips, Hon. E. Pickens, J. W. Lapsley, James L. Price, Joseph R. John, Hon. Jas. Abercrombie, J. M. Stanard, A. E. Mills, Nicholas Davis.

The following additional resolution was also adopted by the meeting:

Resolved, That in consideration of the vast commerce which finds its outlet on the Gulf of Mexico, and the heavy tax and loss which that commerce is subject to, in the navigation of the Cape, we deem the inquiry, whether these burdens should be avoided by the construction of a ship canal across the Isthmus of Florida, as worthy of the closest investigation, and we therefore recommend that immediate steps be taken to procure the most thorough investigation of the subject.

Canada.

Great Western Railroad.—The annual meeting for the choice of directors for this road took place at Hamilton on the 2d inst., which resulted in the choice of the following gentlemen: Robert W. Harris, Esq., Henry McKinstry, Esq., John Young, Esq., Geo. S. Tiffany, Esq., Richard Juson, Esq., Wm. P. Maclaren, Esq., of Hamilton; Erastus, Corning, Esq., Albany; Sir Allen N. MacNab, of Dundurn; Walter H. Dickson, Esq., M. P. P., of Niagara; John W. Forbes, Esq., of Boston; J. W. Brooks, Esq., of Detroit.

At a meeting of the directors subsequent to the above, Robert W. Harris and Wm. P. Maclaren, Esqrs., were respectively elected president and chairman of the company.

It will be seen that three distinguished American gentlemen are among the list of directors. Their election was a part of the arrangement by which a number of American companies directly interested in the completion of the above line, have taken \$1,000,000 in the stock of the Great Western railroad. The well known reputation of these gentlemen in the U. States, will afford full and satisfactory guarantee that the enterprise will be both profitable and well managed. It will receive vast strength from these names alone.

Since the meeting of the 14th of October last, the

following additional subscriptions have been made in the Canadas, viz:

County of Oxford.....	£25,000
Town of London.....	25,000
" Galt.....	25,000
County of Middlesex.....	28,000
	£100,000

The city of Hamilton had previously subscribed to the stock, to the amount of £100,000. With these subscriptions, says the report, and with those of private stockholders, "the board felt justified in gradually extending the works, and there is at the present time a force employed on the line, between this city and Woodstock, equal to three thousand men, besides the necessary engineers, agents, etc.; the sections between Woodstock and London are staked out, ready for work, and the contractors notified to commence the grading operations. The cuttings on this part of the line, however, are light, and can be made ready for the superstructure in a much shorter period of time than the heavy works on the east side of the Grand river."

As the Provincial guarantee is relied upon for one half the cost of the road, the stock of the company is limited to 40,000 shares. Of these, 10,000 are expected to be disposed of in England, and 10,000 by railroad companies in the United States. The balance in Canada. As soon as the company can realise the American and English subscriptions, the work is to be urged forward in a much more vigorous manner. The most difficult portions of the line are now in progress, and what remains to be put under contract can be completed as soon as the portion already commenced upon.

The receipts of the company for the past year have been £81,879, and the disbursements £58,871.

Massachusetts.

Danvers and Georgetown Railroad.—The first meeting of those interested in the construction of this road, was held at North Danvers last Tuesday afternoon, for the purpose of organizing under their charter. About forty gentlemen were present from the different towns on the route of the proposed road. The meeting was organized by the choice of Dr. Merriam, of Topsfield, as Chairman, and W. L. Weston, Esq., of Danvers, as Clerk. It was unanimously voted to accept the Act of Incorporation passed at the last session of the Legislature, and measures were taken which indicate that the road will be built, and that speedily.

We understand that there are no very bad grades on the route, and that the road can be built as cheaply and as easily as almost any road in the state.—The distance from the terminus of the Newburyport railroad, in Georgetown, to the proposed point of connection with the Essex railroad, in North Danvers, is estimated at 11½ miles.—*Salem Observer.*

Providence Railroad Company.—The annual meeting of this corporation was held on the 11th inst., at the depot, Pleasant street. Hon. C. H. Warren, President, read the report of the directors, from which it appeared that the gross earnings of the road for the year ending June 1, 1851, was \$383,816 67, and the expenses \$184,281 24, which amount includes interest on bonds. The net earnings for the year are \$199,535 63. The net earnings for the previous year were \$183,403 86, a gain for the last year of \$16,131 77.

The following gentlemen were unanimously elected directors for the ensuing year:—C. H. Warren, William Appleton, William Amory, Josiah Grinnell, George R. Russell, John Barstow, and Samuel J. Dana. The last named gentleman in place of William Dwight, who declined re-election.

New Hampshire.—On the 27th ult., a railroad meeting was held at Hillsborough bridge, and measures taken to procure a charter for a road from that place to Keene. The meeting was well attended, and a confidence expressed that this link to shorten the line to New York, from Concord, and all the north-eastern section of this state, should

made. A committee to obtain a charter at the present session of the Legislature was appointed.—*Keene (N. H.) Sentinel.*

AMERICAN RAILROAD JOURNAL.

Saturday, June 14, 1851.

To Contractors.

PROPOSALS are invited for laying the superstructure on the first 38 miles of the Manassas Gap Railroad, up to Farrowville;—the work to be commenced in August next. Plans and specifications may be seen at the office in Alexandria, after the 28th inst. Bids will be received up to the 5th of July.

ENGINEER'S OFFICE, ALEXANDRIA.

Superintendent of a Railroad.

THE Post of Superintendent of a Railroad is wanted by a middle aged man, who can give satisfactory evidence of his capacity, integrity and qualifications for such a situation. Letters addressed to A. B., care of the Editor of the Railroad Journal, New York, (to whom the above would refer), will receive immediate attention.

New York, June 11, 1851.

Stock and Money Market.

There has been a good deal of fluctuation in the stock market, growing out of speculative movements, since our last; but we have no particular change to note in the money market. Money continues abundant for all legitimate purposes; with a good prospect for the season. Exportations of gold continue large, without creating much alarm. The export since the first of January last is equal to nearly \$15,000,000, but so long as our receipts exceed our exports, the loss of the latter is no ground for regret or apprehension. Gold, like water, seeks a level in all commercial States; and we might as well attempt to heap up water, as to attempt to accumulate gold beyond the necessities of commerce.

We have no transactions in railroad securities to note since our last issue. Railroad bonds continue in moderate demand, and we apprehend that companies entitled to credit, will find but little difficulty in disposing of their securities at fair rates.—The traffic table of railroads show a very great increase of receipts, which will have a strong tendency to give increased confidence in this species of property.

Ogdensburg Railroad.—The business of the Ogdensburg railroad for May is unexpectedly large. The receipts were as follows:

Freight.....	\$27 548 93
Passengers.....	7,597 76
Company's property.....	1,141 00
Rents.....	344 52
Mail.....	425 00

Total.....	37,058 81
Receipts in April.....	27,000 00

The increase, it will be seen, is nearly \$10,000. The receipts since, and including January, have been \$94,000.

Michigan Central Railroad.—The following are the comparative receipts of the Michigan Central railroad for the month of May:

	1850.	1851.
Freight.....	\$24,847 31	\$42,153 82
Passengers.....	54,120 76	74,709 15
Miscellaneous.....	29 766 45	24 038 28

\$108,735 52 \$140,901 28

Buffalo and Niagara Falls Railroad.—The annexed statement shows the receipts of the Buffalo and Niagara Falls railroad for five corresponding months in 1850 and 1851:

	1850.	1851.
January.....	\$1,999 49	\$2,281 69
February.....	1,952 86	2,380 90
March.....	2,706 74	3,660 57
April.....	4,765 78	6,112 94
May.....	7,939 57	8,408 35

Excess in 1851.....\$19,364 44 \$22,844 45
Equal to about 18 per cent increase.

Norwich and Worcester Railroad.—The receipts for the above road for May show an increase of about \$1,200. The figures are—

	1851.	1850.
Through travel.....	\$2,693 64	\$1,509 76
Local travel.....	7,779 00	7,432 64
Freight.....	12,106 77	12,531 21
Mails, etc.....	1,139 67	1,108 67
	\$23,719 08	\$22,582 28

Columbia Railroad.—The following table shows the collections at the Philadelphia office of the Columbia railroad:

Amount as per last report.....	\$136,389 94
Amount to 31st May, 1851.....	42,079 36

Whole amount since Nov. 30, 1850....	178,469 30
Same time last year.....	152,038 09

Increase.....\$26,431 21

Rutland and Burlington Railroad.—Receipts in May, 1851.....\$25,039 62
Same month last year.....13,443 12

Increase nearly 90 per cent.....\$11,596 50

SALES OF STOCK IN NEW YORK.

	June 12. Sales.	June 5. Sales.
U. S '67 Loan.....	116½	116½
Erie R.R.....	86½	88½
Harlem R.R.....	76½	77
Stonington.....	43½	44
L.I. R.R.....	19½	21½
Norwich & Wor....	65	65½
Del. & Hudson....	121½	121½
Reading.....	57½	53½
Morris Canal.....	16½	16½
Erie income.....	96½	97½
" " Bonds.....	103	103½
Canton.....	71	80
Farmers Loan.....	69	69½

SALES OF STOCKS IN BOSTON.

	June 11.	June 4.
Old Colony Railroad.....	67½	68
Boston and Maine R.R.....	107½	106½
Eastern Railroad.....	101½	102½
Fitchburg Railroad.....	113½	113½
Michigan Central Railroad.....	104	104
Northern Railroad.....	71½	71
Vermont Central Railroad.....	36½	36½
Vermont and Mass. R.R.....	30	29½
Western Railroad.....	107½	108
Ogdensburg Railroad.....	39½	39
Rutland Railroad.....	57½	58
Boston and Worcester Railroad.....	106½	106½
Rutland Railroad Bonds.....	97	97
Ogdensburg Railroad Bonds.....	97½	97½
Vermont Central R.R. Bonds.....	91½	91½
Boston and Providence R.R.....	93	92
Philadelphia, Wilm'gton & Balt.....	30½	30½
Concord R.R.....	55	55

Virginia.

Danville Railroad.—It is gratifying to observe, that the construction of the Danville railroad is being prosecuted with great energy. Twenty-eight miles, upon the Richmond end of the line, we hear, have been laid in superior style; and we are also informed that the cars, it is thought, will reach Amelia Court-house, before the middle of August. Upon our end of the line, the work progresses with much spirit and energy, promising to give to all, confidence in the early completion of the road. Besides these, we observe that interest in its behalf

is shown by the press of the state, some evidences of which we give in another column.—*Baltimore Register.*

Panama Railroad.

We see by a circular of the Panama railroad company—which is in a style very characteristic of the general bearing of the company—that they are in the market for a loan of \$900,000, to enable them to push forward their road. In the outset, this project was treated by those interested, as a private enterprise, of so choice and inviting a character, that its stock was divided among a favored few, who evidently believed they had seized possession of the golden gate to California. So long as it maintained this feature we did not feel that we had any reason to comment upon the management of the company. Their money was their own, and they had a right to spend it in their own way. We have fully believed for some time past, that their affairs have been very badly conducted, and that the whole scheme must end in disaster and defeat; and now that they call upon the public, we feel under no obligation to withhold the free expression of our opinion.

The whole course of this company has been perfectly *sui generis*. In the construction of the road, they have pursued a policy which would ruin any company in this country, no matter how rich—that of building the road by "day's work"—making themselves the contracting parties. A company who should do this with us, where every opportunity for oversight existed, and where an abundance of good hands could at all times be obtained, would barely be able to get credit for a dollar. We have good reason for believing that the greatest mismanagement has prevailed, that the money expended has accomplished but a very little. If it had been otherwise, we presume that the company would have submitted an exhibit of their affairs, on asking for money. When other companies, whose schemes are immediately under our own eyes, make an appeal for aid, they invariably feel it necessary to make a full and public exhibition of their affairs, for the purpose of showing that they and their project are entitled to confidence. Any departure from this rule would be considered an insult to the understanding of our people. Such companies would not plead the general notoriety of their project, the experience and reputation of those entrusted with their management. Reputation is as often fictitious as real. Now the Panama company not only quits the beaten track sanctioned by experience, but does not deign even to let us see how their new experiment has succeeded. Where has gone the million of dollars already paid in? How much has been lost upon one contract, and wasted upon another? Where are the vouchers? How many cubic feet of earth have been removed? How many bridges and how much masonry have been built? Does not the omission to make a proper exhibit conclusively prove that such an exhibit would be fatal to their efforts to raise money?

In the absence of the properly authenticated evidence, as to the condition of the company's affairs, we must take the next best, the statements of those who have returned from the Isthmus, which are as unfavorable in almost every particular. The complaint of bad treatment, and bad management, is almost universal. The mortality among the company's employees, has been frightful. Those at the head of affairs appear to have been entirely unequal and unfitted to grapple with the difficulties before

them. The only thing in which they have succeeded perfectly, is in getting the ill will of almost every person with whom they have come in contact, through the insolent bearing of some of their subordinates, who have, unfortunately, been entrusted with important duties. The company has suffered on this account, to an extent of which they have but a faint idea.

The truth is, it would almost be a miracle if the road should succeed. Is it possible for a few men in an office in New York, without experience, without those personal sympathies, the possession of which are indispensable to the proper management and control of large bodies of men, with obstacles before them such as no similar scheme ever encountered, to successfully carry out a work that requires the exercise of the very highest qualities, and the personal supervision of the ablest men, by turning out upon the Isthmus large bodies of men, most of whom have no other object than to get their pay, and most of whom by the time they get upon the road are in no very friendly frame of mind towards their employers? For every article destroyed, and for every moment lost, the company is the direct sufferer. How is it possible but that everything should go wrong? Why did not the company summon to their aid an efficient body of contractors, who would take these responsibilities off from their shoulders, by standing between them and the operatives? Why, upon their small stock of experience, did they set up to be wiser than those whom experience had taught? The only answer which they will soon give, will be the echo to these queries.

The Panama company cannot build their road as they can a ship, by "main strength." In the latter case a given number of dollars will do the work, no matter how insolent and overbearing a port they may put in. A different policy will be required in the job before them. To carry out this successfully, will require something more than gold—success can only result from an union of money on the one side, and a hearty good will and a desire to advance the good of the company on the part of those employed.

Testimonial of Respect.

D. A. Neal, Esq., in behalf of the eastern stockholders of the Reading railroad, has presented to James Milholland, master machinist of that road, a beautiful silver tea set, in token of the ability, fidelity and energy with which he has discharged his official duties.

Sandusky and Mansfield Railroad.

Mr. Forbes, the President of this company, is crowding the work of re-laying the road between this city and Mansfield, with all possible energy, and intends to have it in complete repair, with heavy rail, during the present summer. An advertisement for materials will be found in this paper, to which the attention of contractors is directed.—*Sandusky Register.*

Ohio and Pennsylvania Railroad.

We learn from the Pittsburgh Gazette that Gen. Robinson, the president of this road, has negotiated, on favorable terms, the residue of the convertible mortgage bonds of the company, which remain to be issued. The sale is over \$500,000, and with the amount before sold, is sufficient to provide the iron rails, locomotives, cars, &c., &c., for the completion of the entire route. The heavy T rail 30 pounds to the yard, sufficient for the track to Massillon, 107 miles, was purchased last year, and is now on hand, and the purchase of 2,500 tons more

has just been made for the section 25 miles between Massillon and Wooster.

Crestline is the point where this road touches the Cleveland, Columbus and Cincinnati road, and the point also where the Bellefontaine and Indiana road commences.

The Ohio and Pennsylvania road will be pressed forward to completion without delay. From Pittsburgh to Beaver, 30 miles, the road will be completed and opened for travel in July next; to Wooster early in the spring; and the whole line of road from Pittsburgh to Crestline, a distance of 185 miles, will be completed and opened for traffic in the autumn of 1852.

Baltimore and Ohio Railroad.

The receipts of the road for the past month have been as follows:—

	For Passengers.	For Freight.
Main Stem	\$25,589 32	\$66,638 87
Washington Branch....	19,146 54	3,863 12
	\$44,735 86	\$70,501 99

Making an aggregate of \$92,228 19 on the Main Stem, and \$22,009 66 on the Washington branch—the total being \$115,237 85.

The above compared with the corresponding month of last year, shows a decrease of \$19,563 71 being \$13,788 96 on the Main Stem, and \$5,774 75 on the Washington Branch.

At a meeting of the board, this morning, Mr. Swann, the President, stated that in accordance with the promise of the Chief Engineer, the first division of the road, from Cumberland to the Piedmont station, would be completed and ready for use on the 4th of July. This was the pledge given by that officer, and he was happy to be able to say that it would be complied with. The President said that great credit was due to the Chief Engineer, for the untiring industry with which he had performed this part of the road to completion, comprising as it did several heavy works. The President said that he hoped and believed that the remaining part of the road would be opened with the same energy.—*Baltimore Patriot.*

Ohio.

The people of Medina county, Ohio, are making vigorous efforts to secure to themselves a railroad communication with Cleveland. To effect this object would require the construction of only 17 miles of new road, branching off from the Cleveland and Columbus railroad at Berea. A meeting in reference to this matter was held at Medina, which was addressed by W. H. Canfield, Esq., Messrs. J. F. Ainsworth, Charles Castle, S. Humphreyville, F. D. Kimball, Samuel Clark, Judge Hosmer, and others. Mr. Canfield stated that an arrangement might be made by which the C. C. & C. company would engage to furnish and lay iron for the track, construct the cars, depots, &c., on a credit sufficiently long to allow the avails of the road to meet the payment of the money thus advanced, and the interest accruing therefrom at six per cent.; that they would make a deduction in the present charges of freight from Berea to Cleveland, for whatever might be carried over the proposed road; that the citizens of Medina county, on the other hand, must procure the right of way, grade and fit the road for laying down the iron.

The estimated cost of the road from Medina to Berea, 17 miles, at \$10,000 per mile, is \$170,000. From this deduct the sum expected from the C. C. & C. company, for the payment of which the avails of the road might be pledged, \$90,000; leaving a balance of \$80,000 for the citizens of Medina coun-

ty to raise. A committee was appointed to raise means to procure a survey and estimate of the cost of grading the track, and if they find the project practicable, to take immediate steps to organize a company, obtain the pledge of stock and the right of way, and adopt such measures as they may deem advisable, to promote the early construction of the road. Messrs. W. H. Canfield, S. N. Sargeant, J. T. Ainsworth, L. D. Tolman, and Charles Castle, were appointed for this purpose.

Memphis and Charleston Railroad.

The President of this road, Governor J. C. Jones, visited Charleston recently, for the purpose of obtaining subscriptions to the capital stock of the above company. At a large meeting of the citizens of that town, called to consider the propriety of loaning its credit to the above work, the following resolution was adopted by a large majority:—

Resolved,—That the city council of Charleston are requested, so soon as they are informed that arrangements have been made satisfactory to the South Carolina railroad company for crossing the Savannah river at Augusta, to subscribe to the stock of the Memphis and Charleston railroad company, the sum of two hundred and fifty thousand dollars.

The above subscription, if made, completes the subscription to the stock of the above company.

German Railroads.—Their Length, Pro- fits, &c.

Some of the railroads in Germany are doing a most prosperous business. According to a statement before us, the Magdeburg and Leipzig road, a short road of 15 German miles, paid a dividend of 12½ per cent. The Magdeburg and Halberstadt paid 8 per cent.; the upper Silesian road 57-12ths; the Borm and Cologne 5 per cent.; Breslau and Freiburg 4 per cent.; the Berlin and Stettin 5½ per cent.; Berlin and Hamburg 4½ per cent.; Lower Silesian with branches, 3½ per cent.; Berlin and Antalt, 4 per cent.; Stettin and Stargard 3½ per cent. The smallest dividend paid was 2 per cent. on the Thuringian road.

The German railroads open to traffic, are as follows:—

Counties.	Miles.	Counties.	Miles.
Prussian lines.....	395	Bavarian.....	77
Austrian.....	200	Saxon.....	57
Hanoverian.....	54½	Baden.....	37
Hesse Cassel.....	37	Wurtemberg.....	27
Holstein.....	21	Mecklenburgh.....	24½
Brunswick.....	13	Hesse Darmstadt.....	11½

—and some other of trifling importance.

The total in length is 964 German or geographical miles, or in English (43-5ths German being one English,) four thousand four hundred and thirty miles, and two-fifths of a mile.

For the American Railroad Journal.

A Railroad Wager.—A Big Dinner.

On Friday, May 2nd, the graduation of that portion of the Indianapolis and Bellefontaine railroad through Randolph county, Indiana, touching the Ohio line, was let to responsible contractors; the grubbing and clearing having been previously finished. On the same day a meeting was organized at Winchester, which was addressed by Oliver H. Smith, President, and Austin W. Morris, Secretary of the company, and others. At the close of the addresses, the following, among numerous spirited resolutions, was passed:—

"Resolved,—That we hereby give notice to our friends in Ohio, (the Bellefontaine and Indiana railroad company especially) that we accept their proposition to have a barbecue at the state line upon the completion of both roads, in October, 1852, to be prepared jointly, and paid for by the company finishing last, with the full confidence that we will not pay for the dinner."

There is some food for agreeable reflection in demonstrations of this kind, as well as food in anticipation, for the body. To see the people of two

contiguous states, which are about uniting themselves in stronger bonds of fraternal feeling, by a great national line of railway, thus stirring up so lively an emulation, betokens good, not only to those immediately along the borders of the two roads mentioned, but to thousands of their fellow citizens east and west of them, who are anxiously watching their commendable exertions to open their respective portions of the greatest thoroughfare of the world.

Forming as they do, two most important links in that long chain which is destined within a very brief period to be continuous from the chief Atlantic cities to the Mississippi River, through Massachusetts, New York, Pennsylvania, Ohio, Indiana and Illinois, their early completion will be hailed with delight by every friend of noble undertakings.

The recent completion of one of the greatest works of any age, the New York and Erie railroad, presents a fresh incentive to the active spirits of the west, to persevere with untiring energy in their glorious enterprises. That great road, now reaching out the iron arms of the commercial emporium of the country to Dunkirk, on Lake Erie, and leaving only the easy route along the level grounds of the lake shore to make the connexion complete to Cleveland, and of course to Galion, at the eastern end of the Bellefontaine and Indiana railroad.

The year 1852 should not pass without a continuous railroad from New York city through Erie, Cleveland, Bellefontaine, and Indianapolis, to Terre Haute, on the western border of Indiana, a total distance of 966 miles; The prospect is fair that a continuous line will be opened through this route during the next year. From Terre Haute to Indianapolis, and from Indianapolis eastward as far as Muncie, embracing about 128 miles, in Indiana, will be in operation this fall. From Dunkirk to Erie, along the Lake shore, the grading is nearly done, and the rails are to be laid this season. A portion of the Lake shore line, from Cleveland eastward, is also to be finished, and probably a portion of the Bellefontaine and Indiana road, this fall. From Cleveland to Galion, 79 miles, it is already in operation, and doing a splendid business up to the free capacity of the equipment, and constantly increasing as rapidly as the company can augment the number of cars and locomotives. Every part of this long line not already finished, is under contract, and rapidly progressing. The chance, then, or a dinner at the state line, between Ohio and Indiana, in the fall of 1852, is most promising. Doubtless it will be a good one, as it certainly is likely to be marvellously well attended. That must indeed be a great table around which shall be assembled the representatives and friends of 966 miles of continuous railroad, to say nothing of the number that will naturally face in from other roads connecting at various points with the same great line. The day that shall witness the consummation of this important event will make its mark among the days of the world; and the event itself will stand out brightly as a shining proof of the power of well directed individual enterprise in a land of freedom.

The increased personal intercourse which the completion of this line must of necessity induce between distant members of our republic, presents a happy theme for the consideration of the statesman and philanthropist, while the blessings it will confer on the general commerce of our country, will be vast—almost beyond the bounds of any ordinary calculation.

TO CONTRACTORS.

Engineer's Office, S. S. R. Road Co.
Petersburg, Va., May 27, 1851.

PROPOSALS will be received at the Engineer's office, South Side Railroad, at Petersburg, Va., until the 31st of July next, for the construction of Appomattox Bridge, to be erected near Farmville.

The Bridge will be about 3000 feet long and 80 feet high; to consist of a wooden superstructure resting on abutments and piers.

The piers will be of brick or stone, to be determined after receiving the proposals.

Good brick earth can be obtained near the site of the Bridge.

The proposals may be made for the structure complete, or for the various items of work and materials, viz.: Masonry, furnishing Bricks or Timber; workmanship of laying Bricks and workmanship of superstructure.

Security will be required for the fulfilments of the contracts, and it will be necessary that each proposal be accompanied with a letter from a responsible person or persons, stating that they will become security.

C. O. SANFORD,
Ch. Engineer, S. Side R. Road.

To Contractors.

OFFICE PACIFIC RAILROAD CO.,
St. Louis, Mo., May 16, 1851.

THE Graduation, Masonry, and the Laying of the Superstructure of the first Division of the Pacific Railroad, comprising about 45 miles from the city of St. Louis, westward, will be ready for contract on the 20th of June next.

Proposals will be received at the Engineer's Office, St. Louis, from the 20th to the 30th of June, where plans and specifications will be shown. The line will be ready for inspection on and after the 20th of June.

The line will be divided into sections of about one mile each, but offerers can include as many of them in one bid as may suit their convenience.

The company will not bind itself to accept the lowest offer, unless in all other respects satisfactory, but reserves the power to dispose of the work in such manner as may appear most advantageous to the interests of the company.

The Division will embrace about one million three hundred thousand (1,300,000) cubic yards of graduation, and about thirty three thousand (33,000) cubic yards of masonry.

THOMAS ALLEN, President.
JAMES. P. KIRKWOOD, Chief Engineer.

Notice to Contractors.

Columbus, Piqua and Indiana Railroad.

SEALED PROPOSALS will be received at the Engineer's Office of the Columbus, Piqua and Indiana Railroad Company, at Urbana, on the 8th day of July, 1851, for the Grubbing, Grading and Masonry of that portion of the line extending from St. Paris, in Champaign county, to Columbus, a distance of fifty-six miles. Plans and specifications of the work may be seen from the 1st to the 8th of July, at the office. The Directors reserve the right to retain bids for twenty days after the 8th, before declaring the work.

The names in full of all the parties should be given in the proposals.

A. G. CONOVER, Engineer.
Piqua, May 20, 1851. 3122

Spikes, Spikes, Spikes.

ANY person wishing a simple and effective Spike Machine, or a number of them, may be supplied by addressing J. W. FLACK, Troy, N. Y. or, MOORE HARDAWAY, Richmond, Va. March 6, 1850.

Railroad Iron.

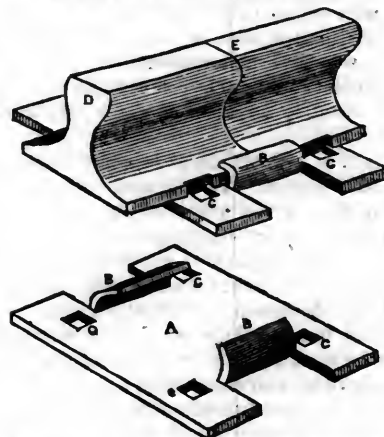
THE "Montour Iron Company" is prepared to execute orders for Rails of the usual patterns and weights, and of any required length not exceeding 30 feet per rail. Apply to

THOS. CHAMBERS, President,
66 Broadway, N. Y.,

Or to the Agents,
CHOUTEAU, MERLE & SANFORD,
NO. 51 New st., New York.

September, 1850.

The American Railroad Chair Manufacturing Co.



ARE prepared to make WROUGHT IRON RAIL ROAD CHAIRS, of various sizes, at short notice.

By use of the WROUGHT IRON CHAIR, the necessity of the wedge is entirely done away—the lips of the chair being set, by means of a sledge or hammer, close and firmly to the flange of the rail.

The less thickness of metal necessary in the Wrought Iron Chair gives much greater power and force to the spikes when driven—and consequently a much less liability to the spreading of the rails by reason of the spikes drawing or becoming bent.

The less weight necessary in the Wrought Iron Chair, will enable us to furnish them at a cost much below that of CAST IRON CHAIRS.

DESCRIPTION OF THE ABOVE CUTS.

Figure 1 is a perspective view of the rail secured in the chair, and fig. 2 is a perspective view of the chair itself. D, E, are sections of two rails placed together, and secured at the joint on the chair by the jaws B, B. The chair is bolted down by spikes C, C. In fig. 2, the chair is represented as made of a single block or plate A of wrought iron.

The chair is set in its proper place on the track, spiked down, and the ends of the two rails brought together within the jaws as represented in fig. 1.

For further information address,
N. C. TROWBRIDGE, Secretary,
Poughkeepsie, N. Y.

June 1, 1851.

Patent Excelsior Spring for Railroad Cars, Locomotives, etc.

THESE Springs, composed of Steel and Wood, as described in this Journal last week, are now being manufactured and sold by the Excelsior Spring Co.—under a Patent granted on 20th May.

This is undoubtedly the best Spring of the day—it is very simple—easy of application—light—cannot get out of order—and it is without any exception the most adjustable spring now made—for it will spring 50 or 5,000 pounds with the same ease.

The cost of the springs is very much less than that of any other.

The Excelsior Spring Co., determined that every spring shall be of the best quality, have established a Factory, where each spring is made directly under the eye of Mr. Bissell, the inventor—and before a spring is allowed to leave the factory it is subjected to a much severer test than it ever can be when at work. Each Spring is guaranteed to perform the required work.

Any person infringing on this patent will be prosecuted.

Office of EXCELSIOR SPRING COMPANY.
33 Broadway, New York.

June 7, 1851.

Railway Iron.

3000 TONS, 50, 57, and 60 lb. Rails, made of best English Iron and under particular specifications.

Also; Rails imported on commission or at a fixed price, delivered at a port in England, or at any port in the United States. Apply to

DAVIS, BROOKS & CO.,
23 Beaver st., New York.

June 5, 1851.

To Engineers and Ship Builders.

THE Advertiser is desirous of a situation in a respectable concern, he has acquired a practical knowledge of his business in the establishment of R. Napier, Esq., Glasgow, has since for several years had the management of the Works of an extensive Steam Packet Co., for whom he designed and built some Iron Screw Ships, whose capabilities and performances give the highest satisfaction. While acquainted with all the most approved modes of construction of marine engines, he is prepared to submit original designs.—In modelling and draughting he has had much and successful experience. Can produce the highest testimonials as to character and abilities from the first engineer on the Clyde.

Address ENGINEER, box 2315 lower Postoffice.

Lovegrove's Patent Cast Iron Water and Gas Pipes.

THE Subscriber, the Inventor and Patente of the Centrifugal mode of giving form to metallic substances while in a molten state, is preparing to make Cast Iron Water and Gas Pipes, of any dimensions, at prices much lower than they can be made in the old manner, and the pipes warranted to stand a pressure of three hundred pounds to the square inch, and to be soft enough to drill. Steam Engines and all kinds of machinery. Cast Iron Doors and Frames, and Mill Castings of every description, made to order.

THOMAS J. LOVEGROVE,

Machinist and Founder,

West Falls Avenue, below Pratt st., Baltimore.

To Railroad Companies, etc.



The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

I also invite attention to an improved PATENT SPRING LOCK, for SLIDING Doors to Freight and Baggage Cars, now in use upon the Pennsylvania Central, Greenville and Columbia, S.C., Reading, Pa., and other Railroads.

Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH,

46 South 8th St. Philadelphia.

May 9, 1851.

SUPERIOR BLACK WRITING & COPYING INK.

Jones' Empire Ink.

87 Nassau st., Sun Building, New York city.

Net prices to the trade—

Quarts, per dozen,	\$1 50	6 oz. per dozen,	\$0 50
Pints, " "	1 00	4 " " "	0 37 1/2
8 ounces, " "	0 62 1/2	2 " " "	0 25

On draught per Gallon, 20 cents.

This is the best Ink manufactured. It flows freely, is a good copying ink, and will not mould, corrode, precipitate or decay. Orders for export, or home consumption, carefully and promptly attended to by

THEODORE LENT.

Railroad Iron.

THE Subscribers, Agents for the Manufacturers, are prepared to contract for the delivery of Railroad iron at any port in the United States or Canada, or at a shipping port in Wales.

WAINWRIGHT & TAPPAN,
29 Central Wharf.

Boston, June 1, 1851.

To Railroad Companies. SALISBURY REFINED IRON.

THE Undersigned, having enlarged and perfected his Works, is now prepared to furnish Locomotive Tire of a better quality than have heretofore been used. Railroad Companies who may wish it, will be furnished with a set for trial, not to be paid for until they are satisfied of their superior quality over any other. Also made at short notice, and in the best manner, Locomotive Cranks, Engine and Car Axles, and other Locomotive Forgings.

All work ordered from me will be made of Salisbury Iron, and done in the best manner.

Address HORATIO AMES,
Falls Village, Conn.

May 1, 1851.

LOWMOOR AND U. S. BEST FINCH IRON. To Iron Merchants.

JOHN FINCH & SONS, Iron Merchants, Liverpool, now are, and for more than twenty years past have been, sole Agents for the LOWMOOR IRON COMPANY, for the United States and Canada, for the sale of their well known Railway Tire Bars, and Axles, Piston Rods, Boiler Plates, Angle, Rivet, and all other kinds of Lowmoor Iron: also, sole Agents for the sale of the superior St. ffordshire Iron stamped "FINCH CROWN" and "U. S. BEST FINCH," and Merchants and Wholesale Dealers in all other kinds of British Iron.

We hereby inform our friends and the public that we have this day appointed Mr. WM. BAILEY LANG, of Boston, as our only representative to receive orders and to transact our general business in the United States.

For JOHN FINCH & SONS,
JOHN FINCH Sen.

Boston, April 11, 1851.

LOWMOOR and other Bent, Welded and Blocked RAILWAY TIRES, ready for use, E. FINCH'S Patent Dovetailed and other kinds of WROUGHT IRON RAILWAY WHEELS, with, or without the finished Axles, for Locomotives and for Passenger and Merchandise Cars, also Wrought Iron Railway Chairs, Railway Spikes, etc.

To the Managers of Railways, Engineers and others: Gentlemen:—We, FINCH & WILLEY, Engineers, Liverpool, Manufacturers of the above articles, respectfully inform you that we have this day appointed Mr. WM. BAILEY LANG, of Boston, as our sole Agent for the sale of said articles, and the transaction of our business in the United States of America, and for whom we solicit your kind attention and patronage.

For FINCH & WILLEY,
JOHN FINCH, Sen.

Boston, April 11, 1851.

Having accepted the above Agencies, I beg leave to solicit your orders, which shall at all times receive my prompt and careful attention. Please address all communications either to MESSRS. JOHN FINCH & SONS or MESSRS. FINCH & WILLEY, Liverpool; or to me, at my Steel Warehouse, No. 9 Liberty Square, Boston. Yours very respectfully,

WM. BAILEY LANG.

Boston, April 11, 1851.

The following are testimonials of the quality of FINCH & WILLEY'S WROUGHT IRON RAILWAY WHEELS from the Yorkshire and Lancashire Railway Co., one of the largest in Great Britain, and from the London and North Western Railway Co., the largest Railway Company in the world.

LONDON AND NORTH WESTERN RAILWAY,
(Northern Division.)

WAGON DEPARTMENT, ORDSALL LANE,
Manchester, January 4, 1851.

Gentlemen:—I have very great pleasure in bearing my testimony to the excellent quality of your Wrought Iron Railway Wheels.

This Company have many of them now in use on their lines, and during my experience, as their Superintendent, which is now upwards of 9 years standing, I have not known any of them to fail during that time.

I am, Gentlemen, yours, truly,

OWEN OWENS.

MESSRS. FINCH & WILLEY,
Windsor Foundry. }

LANCASHIRE AND YORKSHIRE RAILWAY,
Wagon Department, Jan. 3, 1851. }

Messrs. Finch & Willey,

Gentlemen: In reply to your request writing me to give my opinion of the 700 sets of Wrought Iron Wheels you furnished this company during the years 1847 and 1848, I have much pleasure in stating that we have not had a single instance of your Wheels failing in any respect, and I consider them equal if not superior to any Wheels we have on this line of railway. The Tires being LOWMOOR iron, 1 1/2 inch thick, I have no doubt they will run under ordinary goods' wagons 12 years without any repairs more than the tires turning.

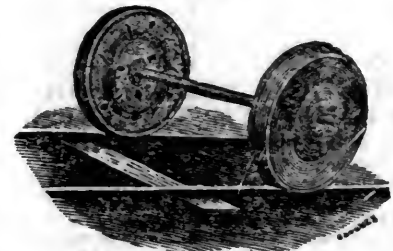
Yours, truly, WM. EMMETT.

NOTE.—4 Wheels and 2 Axles are one set, consequently this order contained 200 WHEELS and 1400 AXLES; value over \$100,000.

Boston Locomotive Works, —Late Hinkley & Drury— No. 350 Harrison Avenue, BOSTON.

Locomotive and Stationary Steam Engines; Boilers; Iron, Brass, Copper and Composition Castings; Coppersmith's Work, and all kinds of Railroad Machinery furnished at short notice.

ALSO



Van Kuran's Improved Railroad Wheel,

Patented May 1, 1849. Manufactured under the personal superintendence of the Patentee, as above.

Orders for any quantity of wheels executed with dispatch, and wheels and axles fitted in the very best manner and at the lowest rates. Address

DANIEL F. CHILD, Treasurer, Boston.



Providence Tool Co.,

MANUFACTURERS OF

Plane Irons, Tooth Irons, Soft Moulding and Rabbet Irons, Cornice Irons, Plow Bits, and Planing Machine Knives:

NUTS, WASHERS AND BOLTS.

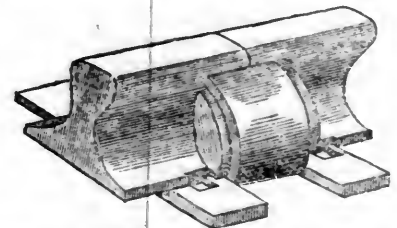
—ALSO—

PLATE HINGES AND PICK AXES.

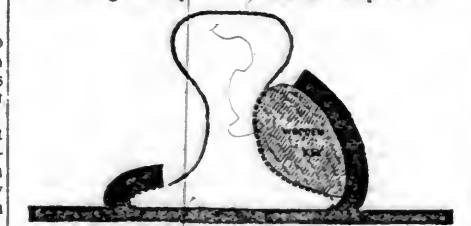
They are prepared to execute orders for all descriptions of Cold Punching and Job Work.

WM. FIELD, Agent. RUFUS WATERMAN, Treas.
PROVIDENCE, R. I.

Railroad Iron, SPIKES, AND WROUGHT IRON CHAIRS.



THE Undersigned, Agent for Manufacturers, is authorized to contract for Welsh Railroad Iron of the best quality, and deliverable at any port on favorable terms, also Spikes and Wrought Iron Chairs, made from the best iron, and of any pattern and weight. The new Wrought Iron Chair, with the introduction of a "Key," as per the annexed plan, will be found a great improvement on the old pattern.



Boiler Plates of superior quality, perfect regularity in the squaring and thickness, and made with great care.

Samples can be seen at our office, No. 20 Beaver St.
CHARLES ILLIUS

RAILROAD CAR MANUFACTORY
TRACY & FALES,
 GROVE WORKS, HARTFORD, CONN.
 Passage, Freight and all descriptions of
RAILROAD CARS,
 AS WELL AS
LOCOMOTIVE TENDERS,
 Made to order promptly.

The above is the Largest Car Factory in the Union. In quality of Material, and in Workmanship, Beauty and Good Taste, as well as Strength and Durability, we are determined our work shall be unsurpassed.
 JOHN R. TRACY. THOS. J. FALES.

**CHILLED TIRES FOR
 LOCOMOTIVE ENGINES.**
To Railroad Companies.

THE Undersigned, Assignee of Letters Patent, respectfully invites the attention of Railroad Companies to the CHILLED TIRES for LOCOMOTIVE ENGINES, which he offers for sale.

These Tires were first introduced by Messrs. Perkins & McMahon, upon the Baltimore and Ohio Railroad, in 1843, where, after a long and severe trial, they were generally adopted, on both passenger and freight engines, and now have entirely superseded Wrought Tires on that road, on which are many engines of the heaviest class, which ascend grades of *eighty-five feet per mile*, taking with them *one hundred and twelve tons*, exclusive of cars. This performance shows in some measure the *adhesive* character and *strength* of the Tire.

During a service of seven years, these Tires have very much exceeded in *durability* those of wrought iron, while their first cost, and expense of repairs, is more than *fifty per cent. less*. They also retain more equally their *diameter* and *proper form of tread*, which is a point of much value in engines with *coupled wheels*.

It is believed these Tires are peculiarly well adapted to freight engines, as the objection to *coupling* the wheels of locomotives is the *increased friction*, arising principally from the *unequal wear* of wrought tires; and hence most of the freight engines where wrought tires are used, have but *four wheels as drivers*, with frequently a weight of *sixteen tons*, or more, upon them. which may be of no disadvantage to the engine, although its effect upon the *track* is like a car with *sixteen tons* upon *four wheels*, and it is presumed no one would permit cars so heavily loaded to pass over their road.

As Chilled Tires wear more *uniformly* than those of wrought iron, there can be no doubt when these are used, that the weight *necessary for adhesion* may be distributed upon more *driving wheels*, without any material disadvantage to the engine, and thus placing *less weight* upon a *single point*, would relieve the *track*, and secure, to a great extent, the object sought to be gained by the plan so frequently proposed, of using *light engines*, which would bring with it the necessity of *increasing* the number of trains and train hands.

The complete success of Chilled Tires upon the Baltimore and Ohio road for the last seven years, and upon other roads for a more subsequent period, is a strong proof of their *practical character*, while their *cheapness* and *durability*, it is believed, recommend their trial by every railroad company.

It may be thought by some that the *whole wheel* for *strength*, would be preferable to wheels with tires, but experience shows the latter to be a much *stronger* and *more durable* wheel, on account of its freedom from *tension*, which is never the case with a *whole wheel*. That TENSION has much to do with the breaking of wheels and tires, may be inferred from the fact, that a set of *chilled tires*, five feet diameter, on a first class passenger engine, have been in constant service during the past winter, on one of our Eastern roads, and have withstood the severities of the season, where whole wheels and *wrought tires* have broken. And it may be proper to remark, that wherever chilled tires have been introduced, whole wheels as drivers are invariably abandoned, they being far more expensive to maintain, as there is a *crank* to form as often as a wheel is renewed, which is *not* the case on the renewal of a tire.

The peculiar manner of *fastening* these tires to the wheel *without shrink*, applies equally well to wrought tires, and is of much importance where they are used, as it secures them against the TENSION or STRAIN they receive by the present plan of *shrinking* them to the wheels, which undoubtedly is the cause of wrought tires breaking so frequently, particularly in cold weather, which produces a greater *contraction* of the tire, thereby increasing the *strain*. This plan makes the tire perfectly secure upon the wheel, and is attended with *less expense*, as will be seen by the following testimonials, which are respectfully submitted.

Lowell, March 1851.

L. B. TYNG.

TESTIMONIALS.

Baltimore and Ohio R. R. Office, }
 Jan 2, 1850.

Mr. L. B. TYNG, Lowell, Mass.—Sir: Your favor of the 26th ult., is before me, asking my opinion of the Chilled Cast Iron Tires, of Messrs. Perkins & McMahon, patentees. I do not hesitate to speak favorably of them, nor to say that I would give them the preference over wrought iron tires, whenever the adhesive tenacity of the latter to the rails is not *all called for*, there being somewhat less adhesion to the chilled wheel.

This can, however, scarcely be called a practical point, as nearly all of the Passenger Engines now in use have a *surplus of adhesion*, and nearly all Freight Engines being provided with the sand box, for emergencies arising from sharp curves, heavy grades or wet rails.

The Chilled Tire is very much cheaper in first cost, will last longer, and offers a facility for putting it on the wheel, rendering comparison with the wrought iron tire an absurdity—it not being necessary even to take the wheels from the machine for the purpose.—Many of them are in successful use on this road, and I consider its curves and other peculiarities the most severe of all existing tests. One set of five feet in diameter, has run 50,000 miles under one of our Passenger Engines, and will to all appearance, run as many more; and, in the mean time, they have not cost a dollar for repairs or adjustment.

It may be suggested that they might not stand a Northern frost. This is possible; but I believe otherwise, as the weather here is occasionally as severe as in Boston, and if I had charge of a northern road, after the experience I have had here, I would make their trial one of my very first acts.

Respectfully your Ob't Serv't,
 WM. PARKER, General Supt., etc.

January 29, 1851.

Philadelphia, Wilm. and Balt. R. R. Office, }
 Wilmington, Del.

Mr. L. B. TYNG—Sir: We have used the solid Cast Iron Chilled Wheel, and Cast Iron Chilled Tire, for engine drivers, on this road since 1842. When wrought iron tires under new engines, purchased from time to time, wear out, I invariably replace them with the Chilled Tire of Messrs. Perkins & McMahon, patentees.

These Tires will last, on the average, three times as long as wrought tires; seldom requiring renewals under three years, and lasting much longer usually. We have a set which has been in constant use for five years, and still in fair order. The adhesion supplied by the Chilled Tires, I find in practice with engines of the same model and weight, to be equal to that given by wrought tires. This is certainly a fact, though not an acknowledged one, in general. Those who think otherwise, will in time change their opinions.

I am of opinion that the Chilled Tire is as safe as the wrought, at any temperature. In eight years use, we have broken but one tire out of more than fifty, and that by a violent concussion on the occasion of a run off.

The use of the Chilled Tire, and the ease and rapidity with which it may be replaced, would certainly enable a road to do the same amount of work with fewer engines—since but little time would be lost in laying up an engine for new tires, or for turning down old ones, as must be done when wrought tires are used.

I am yours respectfully,

I. R. TRIMBLE,
 Engineer and General Supt.

Office Eastern R. R., Salem, Dec. 23, 1850.

L. B. TYNG, Esq.—Sir: Your favor of Nov. 30th, inquiring respecting the Chilled Cast Iron Tires, came duly to hand, and in answer, I will say, that this road have in use one set cast and fitted to the wheel, by Messrs. Bush & Lobdell, upon a twenty ton first class Passenger Engine, which has run in eight months, 26,639 miles, and to all appearance, are about as good as when they first commenced running.

In regard to the comparative expense of the cast or wrought iron tires, I do not hesitate to say that the difference would be vastly in favor of the former.

I have ordered a second set, and they will be put on to the engine immediately. Respectfully,

JOHN KINSMAN, Supt. E. R. R.

Chilled Tires for the various sized wheels, or wheels with either chilled or wrought tires fitted up upon this plan, may be had of the following persons:

ALDRICH, TYNG & Co, Lowell, Mass.
 SMITH & PERKINS, Alexandria, Va.

Rights for using Tires upon the above plan, may be had on reasonable terms, of L. B. TYNG, Lowell, and at N. York.

Railroad Iron.

THE UNDERSIGNED, HAVING made arrangements abroad, are prepared to contract for the delivery of Foreign rails, of approved brands upon the most favorable terms.

They will also make contracts for American rails, made at their Trenton works, from Andover Iron, in whole or in part, as may be agreed upon.

They are prepared to furnish Telegraph, Spring and Market Wire; Braziers and Wire Rods; Rivets and Merchant Bars to order, all made exclusively from Andover Iron. The attention of parties who require iron of the *very best* quality for special purposes, is respectfully invited.

COOPER & HEWITT,
 17 Burling Slip, New York.

February 15, 1850.

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
 No. 24 Commercial St. Boston.

August, 16, 1849.

6m33

Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the Importation of Pig, Bar, Sheet, etc. Iron.

THOMAS B. SANDS & CO.,
 73 New street,
 New York.

February 3, 1849.

Glendon Refined Iron.

Round Iron, Band Iron, Hoop Iron,
 Square " Flat " Scroll "

Axles, Locomotive Tyres,
 Manufactured at the Glendon Mills, East Boston, for sale by
 GEORGE GARDNER & CO.,
 5 Liberty Square, Boston, Mass.

Sept. 15, 1849.

3m37

ENGINEERS.

Atkinson, T. C.,

Mining and Civil Engineer,
 Orange and Alexandria Railroad, Alexandria, Va.

Clement, Wm. H.,

Little Miami Railroad, Cincinnati, Ohio.

Cozzens, W. H.,

Engineer and Surveyor, St. Louis, Mo.

Alfred W. Craven,

Chief Engineer Croton Aqueduct, New York.

Floyd-Jones, Charles,

Alton and Sangamon Railroad, Alton, Illinois.

Gay, Edward F.,

Columbia and Philadelphia Railroad, Philadelphia Pa.

Gilbert, Wm. B.,

Rutland and Burlington Railroad, Rutland, Vt.

Gzowski, Mr.,

St. Lawrence & Atlantic Railroad, Montreal, Canada.

Grant, James H.,

Nashville and Chattanooga R. R., Nashville, Tenn.

S. W. Hill,

Mining Engineer and Surveyor, Eagle River,
 Lake Superior.

Holcomb, F. P.

Southwestern Railroad, Macon, Ga.

Latrobe, B. H.,

Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,

Buffalo and Conhocton Valley Railroad, Bath, N. Y.

Morris, Elwood,

Schuylkill Navigation, Schuylkill Haven, Pa.

Nott, Samuel,

Lawrence and Manchester Railroad, Boston,

Osborne, Richard B.,

Civil Engineer, Philadelphia.

Prichard, M. B.,
East Tennessee and Georgia R. R., Cleveland, Tenn.

W. Milnor Roberts,
Bellefontaine and Indiana Railroad, Marion, Ohio.

Roberts, Solomon W.,
Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Sanford, C. O.,
South Side Railroad, Virginia.

Schlatter, Charles L.,
Northern Railroad (Ogdensburg), Malone, N. Y.

Steele, J. Dutton,
Pottstown, Pa.

Trautwine, John C.,
Civil Engineer and Architect, Philadelphia.

Tinkham, A. W.,
United States Fort, Bucksport, Me.

Troost, Lewis,
Alabama and Tennessee Railroad, Selma, Ala.

Whipple, S.,
Civil Engineer and Bridge Builder, Utica, N. Y.

HOTELS.

DAVIS'S
ALHAMBRA HALL,
No. 136 Pratt street,
BALTIMORE.

Exchange Hotel,
Adjoining Eastern Railroad Depot,
BUFFALO, N. Y.
BY.....**FISS & SPERRY,**
Late of Delevan House, Albany.

MANSION,
Corner of Maine and Exchange Streets,
P. DORSHIMER. **BUFFALO.**

Barnum's City Hotel,
MONUMENT SQUARE, BALTIMORE.
This Extensive Establishment, erected expressly for a Hotel, with every regard to comfort and convenience, is situated in the centre and most fashionable part of the city, and but a few minutes' walk from the Railroad Depots and Steamboat Landings.
The House has lately undergone a thorough repair, embracing many valuable improvements, and will accommodate 250 Guests. **BARNUM & CO.**

American Hotel,
Pratt street, opposite the Railroad Depot,
BALTIMORE.
HENRY M. SMITH.....Proprietor.
Late of the Exchange & St. Charles Hotels, Pittsburgh

Washington Hotel,
BY JOHN GILMAN,
\$1 Per Day.
No. 206 Pratt street, (near the Depot),
BALTIMORE.

GUY'S
United States Hotel,
(Opposite Pratt street Railroad Depot),
BALTIMORE.
JOHN GUY. **WILLIAM GUY.**

DUNLAP'S HOTEL,
On the European Plan,
NO. 136 FULTON STREET,
Between Broadway and Nassau St.,
NEW YORK.

JONES' HOTEL,
NO. 152 CHESTNUT STREET,
PHILADELPHIA.
BIRDSE & WEST, Proprietors.

Fountain Hotel,
LIGHT STREET, BALTIMORE,
THURSTON.....Proprietor.

BUSINESS CARDS.

Walter R. Johnson,
CIVIL AND MINING ENGINEER AND AT-
torney for Patents. Office and Laboratory, F St.,
opposite the Patent office, Washington, D. C.

Lithography.
JOHN P. HALL & CO.,
161 Main st., Buffalo, (Commercial Advertiser Build.)
Are prepared to execute all kinds of Lithography in good style and at reasonable rates. Particular attention will be paid to Engraving Railroad Maps, Engineer's Plans and drafts, etc., and orders in this line are respectfully solicited.

Cumberland, (Md.) Coals for
Steaming, etc.
ORDERS RECEIVED FOR AND FILLED
by **J. COWLES, 27 Wall St., N. Y.**

J. & L. Tuckerman,
IRON COMMISSION MERCHANTS,
AND MANUFACTURERS OF
ULSTER BAR & POUGHKEEPSIE PIG IRON,
69 WEST STREET,
NEW YORK

Henry I. Ibbotson,
IMPORTER of Sheffield and Birmingham Goods.
Also, Agent for the Manufacture of Telegraph Wire.
218 PEARL ST., NEW YORK.

Charles T. Jackson, M. D.,
STATE ASSAYER, late Geologist to Maine, Rhode Island, New Hampshire, and the United States, offers his services to his friends and the public in making any Chemical, Mineralogical or Geological researches that may be required for the improvement of Agriculture and the Manufacturing Arts. Particular attention will be paid to the exploration of mines and to assaying of ores of the metals.
State Assayer's office, 31 Somerset st.
Boston Sept. 3, 1850.

STEEL AND FILES.
R. S. Stenton,
20 CLIFF STREET, NEW YORK,
AGENT FOR
J. & RILEY CARR,
BAILEY-LANE WORKS, SHEFFIELD,
Manufacturers of Cast, Shear, German, Blister, and
Spring Steel,
Of all descriptions, Warranted Good.
FILES.

Manufacturers of Machinists' Warranted Best Cast Steel Files, expressly for working upon Iron and Steel, made very heavy for recutting.
A full Stock of Steel and Files at all times on hand. 6m4

Dudley B. Fuller & Co.,
IRON COMMISSION MERCHANTS,
No. 139 GREENWICH STREET,
NEW YORK.

Manning & Lee,
GENERAL COMMISSION MERCHANTS,
NO. 51 EXCHANGE PLACE,
BALTIMORE.
Agents for Avalon Railroad Iron and Nail Works.
Maryland Mining Company's Cumberland Coal "CED"
"Potomac" and other good brands of Pig Iron.

Samuel Kimber & Co.,
COMMISSION MERCHANTS
WILLOW ST. WHARVES, PHILADELPHIA.
AGENTS for the sale of Charcoal and Anthracite
Pig Iron, Hammered Railroad Car and Locomotive Axles, Force Pumps of the most approved construction for Railroad Water Stations and Hydraulic Rams, etc., etc.
July, 27, 1849.

James Herron, Civil Engineer,
OF THE UNITED STATES NAVY YARD,
PENSACOLA, FLORIDA.,
PATENTEE OF THE
HERRON RAILWAY TRACK.
Models of this Track, on the most improved plans, may be seen at the Engineer's office of the New York and Erie Railroad.

PLUSHES

FOR
Railway Cars & Omnibuses.
F. S. & S. A. MARTINE,
112 WILLIAM ST., NEAR JOHN.
ARE now receiving a large and complete assortment of Plain and Figured PLUSHES, of their own importation, which will be sold at the lowest market price, viz: Crimson, Maroon, Scarlet, Green, Blue, Purple, etc.
ALSO—CURLED HAIR, the best manufactured in market.

To Railroad Companies,
Machinists, Car Manufacturers, etc., etc.
CHARLES T. GILBERT,
NO. 80 BROAD ST., NEW YORK,
IS prepared to contract for furnishing at manufacturer's prices—
Railroad Iron,
Locomotive Engines,
Passenger and Freight Cars,
Car Wheels and Axles,
Chairs and Spikes.
Orders are invited; and all inquiries in relation to any of the above articles will receive immediate attention

Manufacture of Patent Wire
ROPE AND CABLES,
For Inclined Planes, Suspension Bridges, Standing Rigging, Mines, Cranes, Derrick, Tilers, &c., by
JOHN A. ROEBLING, Civil Engineer,
TRENTON, N. J.

FORGING.
Ranstead, Dearborn & Co.,
MANUFACTURERS OF
LOCOMOTIVE CRANKS AND CAR AXLES,
ALSO
WROUGHT IRON SHAFTING,
And All Kinds of Hammered Shapes.
Office 25 Foster's Wharf, Boston.

Samuel D. Willmott,
MERCHANT, AND MANUFACTURER OF
CAST STEEL WARRANTED SAWS,
—AND FILES—
IMPORTER OF THE
GENUINE WICKESLY GRINDSTONES
NO. 8 LIBERTY STREET,
NEW YORK.

Railroad Instruments.
THEODOLITES, TRANSIT COMPASSES,
and Levels, with Fraunhofers Munich Glasses, Surveyor's Compasses, Chains, Drawing Instruments, Barometers, etc., all of the best quality and workmanship, for sale at unusually low prices, by
E. & G. W. BLUNT,
No. 179 Water St., cor. Burling Slip.
New York, May 19, 1849.

IRON.

Iron.
Pig Iron, Anthracite and Charcoal; Boiler and Flue Iron, Spring and Blistered Steel, Nail Rods, Best Refined Bar Iron, Railroad Iron, Car Axles, Nails, Stove Castings, Cast Iron Pipes of all sizes, Railway Chairs of approved patterns for sale by
COLEMAN, KELTON & CAMPBELL,
109 N. Water St., Philadelphia.

Iron Store.

THE Subscribers, having the selling agency of the following named Rolling Mills, viz: Norristown, Rough and Ready, Kensington, Triadelphia, Portersville and Thorndale, can supply Railroad Companies, Merchants and others, at the wholesale mill prices for bars of all sizes, sheets cut to order as large as 58 in. diameter; Railroad Iron, domestic and foreign; Locomotive tire welded to given size; Chairs and Spikes; Iron for shafting, locomotive and general machinery purposes; Cast, Shear, Blister and Spring Steel; Boiler rivets; Copper; Pig iron, etc., etc.
MORRIS, JONES & CO.,
Iron Merchants,
Schuylkill 7th and Market Sts., Philadelphia.
August 16, 1849. 1y33

Bowling Iron. Stamped B.O.

Railway Tire Bars
Locomotive and other Axles
Boller Plates
Rivet Iron
Locomotive Frame do
Bars,
and every other description of this superior Iron.

The subscribers, agents for the sale of Bowling Iron, are prepared to execute orders for importation, especially for railway and machinery uses, with despatch from the manufacturers.

RAYMOND & FULLERTON, 45 Cliff st.

**Ibbotson, Brothers & Co's
CELEBRATED CAST STEEL**

Best Cast Steel Royal Improved Files, well known as better adapted for Engineers' and Machinists' purposes than any now in use in the United States.

Every description of Square, Octagon, Flat and Round Cast Steel, Sheet, Shovel and Railway Spring Steel, etc., and Steel to order for any purposes—manufactured at their works in Sheffield—and universally known by the old stamp "Globe."

HENRY I. IBBOTSON, Agent,
218 Pearl st., New York.

**Smith & Tyson,,
IRON COMMISSION MERCHANTS,
BALTIMORE.**

REFINED Juniata Charcoal Billet Iron for Wire. Do. for Bridging, of great strength. Flat Rock, Boiler and Flue Iron, rolled to pattern. Elba, Wheel Iron of great strength and superior chilling properties. Elba Forge Iron, American Shot Iron, Cut Nails, Spikes and Brads, Nail and Spike rods, Railroad Spikes of superior quality, Wrought Chair plates of any pattern, punched or plain.

**WILLIAM JESSOP & SONS,
CELEBRATED CAST-STEEL.**

The subscribers have on hand, and are constantly receiving from their manufactory,

PARK WORKS, SHEFFIELD,

Double Refined Cast Steel—square, flat and octagon. Best warranted Cast Steel—square, flat and octagon. Best double and single Shear Steel—warranted. Machinery Steel—round. Best and 2d gy. Sheet Steel—for saws and other purposes.

German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.

Genuine "Sykes," L. Blister Steel.

Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by

WM. JESSOP & SONS,
91 John street, New York.

Also by their Agents—

Curtus & Hand, 47 Commerce street, Philadelphia.

Alex'r Fullerton & Co., 119 Milk street, Boston.

Stickney & Beatty, South Charles street, Baltimore.
May 6, 1848.

Railroad Iron.

B. O. Railway Tires, Railway Wheels,
Scotch Pig Iron, Tin Plates and Banca Tin,
Muntz's Patent Metal Sheathing,
Baltimore Copper.

Contracts for Rails made on behalf of the manufacturers, for delivery at any ports in the United States, at fixed prices.

Bowling Tires and Tire Bars and Scotch Pigs imported to order.

Muntz's Ship-sheathing, and a general stock of Tin Plates and Banca Tin in store, and for sale by

RAYMOND & FULLERTON, 45 Cliff st.

IRONDALE PIG METAL, MANUFACTURED
and for sale by the Bloomsburg Railroad Iron Co.
LINDLEY FISHER, Treasurer.
75 N. Water St., Philadelphia.

Car Wheel Iron.

THE celebrated cold blast "Conowingo" Pig Iron, for Railroad Wheels, Chilled Rolls, etc., for sale by
E. PRATT & BROTHER,
Baltimore, Md.

Railroad Iron.

3,000 TONS C. L. MAKE 63½ lbs. per yard, now landing and to arrive.

Also contracts made for future delivery of above superior make English Iron.

300 Tons Banks Best Iron, Round, Square and Flat.
200 " English Bar " " " "

10 " 9-16 Square Iron for Railroad Spikes.

For sale in lots to suit purchasers by

DAVID W. WETMORE.
New York, March 26, 1850. 3m

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

**JOHNSON, CAMELL & Co's
Celebrated Cast Steel,**

AND
ENGINEERING AND MACHINE FILES,
which for quality and adaptation to mechanical uses, have been proved superior to any in the United States. Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cyclops Steel Works Sheffield.

JOHNSON, CAMELL & CO.,
24 Cliff St., New York.

November 23 1843.

Bowling Tire Bars.

40 Best Flange Bars 5½x2 inches, 11 feet long.
40 " " 5½x2 " 7 feet 8 in. long.
40 " Flat " 6x2 " 11 feet long.
40 " " 6x2 " 7 feet 8 in. long.

Now in store and for sale by

RAYMOND & FULLERTON,
45 Cliff street.

**Wheel, Forge and Foundry
Iron.**

LOCUST GROVE Wheel Iron of great strength and superior chilling property.

Balt. Charcoal Forge Iron, from Patuxent, Curtis Creek and Gunpowder furnaces.

Elkridge Foundry Iron, of superior strength and softness. Anthracite and Charcoal Iron from Pennsylvania and Virginia. Gas and Water Pipes, Lamp Posts from Elkridge furnace.

LEMMON & GLENN,
62 Buchanan's Wharf, Baltimore.

Sm9

Railroad Iron.

1650 Tons, weighing about 61 lbs. per yard, 40 tons, weighing about 52 lbs. per yard, and 825 tons, weighing about 53½ lbs. per yard, of the latest and most approved patterns of T rail, for sale by
BOORMAN, JOHNSTON & CO.,
119 Greenwich street.

New York, Aug. 26, 1850.

N.B.—B. J. & Co are also prepared to take contracts for English rails, delivered in any of the Atlantic ports of the United States.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract to deliver Rails of superior quality, and of any size or pattern, to any ports of discharge in the United States.

COLLINS, VOSE & CO.,
74 South St.

New York, June 1, 1850.

Tredegar Iron Works.

ROLLING MILL FOUNDRY AND MACHINE SHOPS. The undersigned continues to manufacture at his Works in this city (from best charcoal metal) Bar Iron of every description, embracing—Rounds and Squares, from ½ to 5 inches diameter. Flats, from ½ to 7 inches, all thicknesses.

Bands and Scrolls, all sizes. Boiler plate and Plough Iron. Railroad and Locomotive Axles and Tires. Locomotive Frames, Spikes and Plates. Hoops, Ovals, Half Ovals, Half Rounds, Angle, T, L, and indeed every description of Iron usually manufactured, all of which he warrants to be equal to any made in this country. He also manufactures at his Foundry and Machine Shops all descriptions of Railroad Work, say, Locomotives, Railroad Wheels and Axles complete and ready for the road, Railroad Chairs, etc. Also, Marine and Stationary Engines all sizes, Sugar mills and Engines, Horse mills, and every kind of Machinery usually required for the operations of the country. He has paid particular attention to getting up machinery, etc., for Gold Mine operations, and those in want of such work might find it to their advantage to give him a call.

J. R. ANDERSON.

CUT NAILS OF BEST QUALITY, BAR IRON
(including Flat Rails) manufactured and for sale by
FISHER, MORGAN & CO.,
75 N. Water St., Philadelphia.

Car Wheel Iron.

100 Tons "Columbia" No. 2 Cold Blast Charcoal Iron.

300 Tons "Salisbury" No. 1, do. do.
For sale by CHARLES T. GILBERT,
No. 80 Broad st.

New York, Sept. 21, 1850.

Railroad Spikes.

THE subscribers are prepared to make and execute contracts for Railroad Spikes of a superior quality, manufactured by the New Jersey Iron Company, at Boonton.

DUDLEY B. FULLER & CO.
139 Greenwich st. corner of Cedar.

**S. S. Keyser & Co.,
IRON WAREHOUSE,**

Corner of South and Pratt Streets,
BALTIMORE, MD.

Selling Agents for the Rough and Ready Bar Iron and Elk Boiler and Flue Iron Rolling Mills, Sarah and Taylor Furnaces, and Wrightsville Hollow Ware Foundry, and Dealers in Bar and Sheet Iron, and Cast, Sheer, German, Blister, Spring and Electroplated Steel, etc., etc.

Railroad Spikes, Boiler Rivets, etc.

THE Subscribers, Agents for the sale of James S. Spencer's, Jr., Railroad and Boat Spikes, Boiler Rivets, and Wrought Iron Chairs for Railroads, made at his Works near this city, will execute all orders with promptness, despatch, and of the best quality.

ALSO IMPORTERS of English refined and Merchant bar Iron; Extra refined Car and Locomotive Axles (from 3½ to 6½ inches in diameter); B. O. Locomotive Tire (welded by Baldwin). Also, supply Boiler and Flue Iron cut to pattern or otherwise.—Spring, Shear, and Cast Steel, etc., etc., etc.

T. & E. GEORGE.

Philadelphia, November 14, 1850.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract for the delivery of English, Welsh and Scotch Rails, of any pattern and weight, also for every description of English, Welsh, Scotch, and Swedish Iron, Railway Chairs and Spikes, Rivets, Bolts, Nuts, Washers, Chain Cables, Anchors, Tin Plates, German Spelter, Iron Castings, and every description of Machinery.

WILLIAM BIRD & CO.,
Iron and Tin Plate Merchants,
44 Wall st., New York.

And at 5 Martin's Lane, City, London,
and 140 Buchanan st. Glasgow.

July 27th, 1850.

**Railroad Spikes, Wrought
Chairs and Fastenings.**

THE subscribers continue to manufacture, with increased facilities, Hook and Flat Head Railroad Spikes and Chairs. The points being finished by hand, have a long taper, and sharp point, and are much superior to those made entirely by machinery.

We are also prepared to furnish Wrought Chairs, Clamps and Fastenings of every description, either punched or plain. The best quality of refined iron is used in the above articles, and our prices will be made as favorable as any in the country.

The patent Clinch Spike will be found an improvement to secure the rail at the joints.—They drive in the manner shown and are not liable to work loose.

All communications, addressed to the undersigned, will meet with prompt attention.

SMITH & TYSON,
No. 25 South Charles st., Baltimore Md.

TO RAILROAD COMPANIES, CAR MANUFACTURERS, etc.

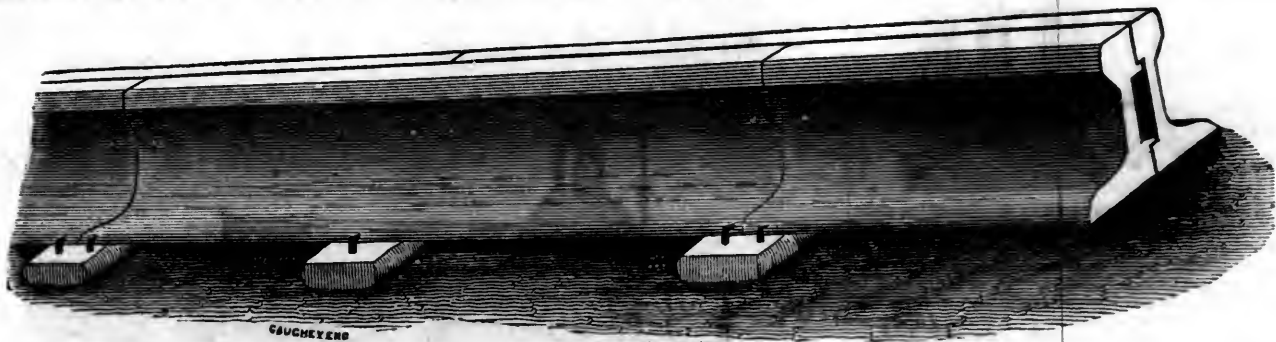
THE Undersigned hereby gives public notice, that the Commissioner of Patents, pursuant to his decision in relation thereto, on the 8th day of October, 1850, issued to him a Patent for the sole right to manufacture, and exclusive use of the INDIA RUBBER CAR SPRING, on account of priority of invention of said Spring.

F. M. RAY,

New York, Oct. 23, 1850.



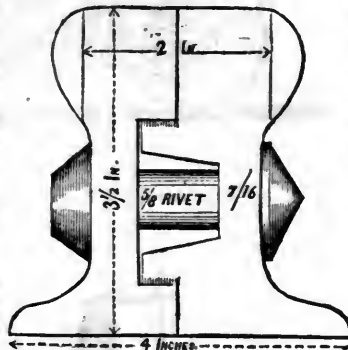
PATENT COMPOUND RAIL.



THE UNDERSIGNED NOW OFFER TO THE Railroad Public a new Compound Railroad Bar, which possesses, as they believe, a decided superiority over every kind now in use. The Cuts annexed will give a good idea of the form of the Rail, and the mode of combination.

This Rail has now been in use on the New York and Erie and the Utica and Schenectady Railroads for nearly two years, and has proved itself to be a *durable and continuous* rail, realizing the advantages of a theoretically perfect rail, over the one in common use. We invite the attention of Railroad Companies to a careful examination of the merits of the form now offered.

The advantages of this Rail are: first, it effects a saving of from 25 to 50 per cent. in the wear and tear of the machinery; secondly, it saves to a vastly greater extent in the repairs of track; thirdly, it secures a much higher rate of speed with the same power; and what is of still



greater importance, it offers complete protection against most of the accidents to which companies are liable. For these reasons, it is believed to be not only the best, but the cheapest rail that can be used. In enumerating its advantages, the proprietors only repeat the statements of competent persons, who have had the best opportunities of judging of its merits.

This improved Rail is now being manufactured at the Works of the Mount Savage Iron Co. in Maryland. Any communications or enquiries addressed to either of the undersigned will receive prompt attention.

J. F. WINSLOW, President,
Troy, N. Y.
ERASTUS CORNING, Albany.
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore.

April 8, 1851.

Fagotted Car and Engine Axles

FORGED by RANSTEAD, DEARBORN & Co., Boston, Mass.
These Axles enjoy the highest reputation for excellence, and are all warranted.

Iron Trade of Pennsylvania.

DOCUMENTS and Statistics relating to the Manufacture of Iron in the State of Pennsylvania—giving a history of the manufacture from its commencement to this date, illustrated by diagrams. Also tables giving the address and capacity of every establishment in the State. Prepared by direction of the late convention of the trade held in Philadelphia. For sale by

LINDSAY & BLACKISTON, Philadelphia.
FIELDING LUCUS, Jr., Baltimore.
HENRY G. NICHOLS, 79 Water st., N. Y.
or at this office—price \$1 00.

It will be sent by mail to any order enclosing the money, and post paid.

Ulster Iron.

THE ULSTER IRON WORKS, Saugerties, N. Y., continue in full operation. Orders for round, square, flat, band, hoop and scroll iron, will be received and promptly executed by

J. & L. TUCKERMAN,
69 West St., New York.

India-rubber for Railroad Cos.

RUBBER SPRINGS—*Bearing and Braker*—Fuller's Patent—Hose from 1 to 12' in diameter. Suction Hose. Steam Packing. Lamin 1-16 to 2 in thick. Rubber and Gutta Percha Bands. These articles are all warranted to give satisfaction, made under Tyer & Helm's patent, issued January, 1849. No lead used in the composition. Will stand much higher heat than that called "Goodyear's," and is in all respects better than any in use. Proprietors of railroads do not be overcharged by pretenders.

HORACE H. DAY,
Warehouse 23 Courtlandt street
New York, May 21, 1849.

Railroad Iron.

2000 TONS T RAILS, of desirable pattern, arrived, and to arrive, for sale by
RAYMOND & FULLERTON,
45 Cliff st.

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. J. F. WINSLOW, President

Troy, N. Y.
ERASTUS CORNING, Albany
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md

November 6, 1848.

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phoenix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehanna river; which two establishments are now turning out upwards of 1800 tons of finished rails per month.

Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.

REEVES, BUCK & CO.
45 North Water St. Philadelphia.

March 15, 1849

LAP—WELDED WROUGHT IRON TUBES

FOR

TUBULAR BOILERS, FROM ONE AND A QUARTER TO SEVEN INCHES IN DIAMETER.

THE ONLY Tubes of the same quality and manufacture as those so extensively used in England Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER & SON, Patentees,
23 Platt street, New York.

AMERICAN PIG IRON.

"POUGHKEEPSIE" brand, Dutchess Co., N. Y.
"GLENDON" brand, Lehigh county, Pa.
Orders for the above two well known brands will be received, and promptly executed, by

J. & L. TUCKERMAN,
69 West St., New York.

American Cast Steel.

THE ADIRONDAC STEEL MANUFACTURING CO. is now producing, from American iron, at their works at Jersey City, N. J., Cast Steel of extraordinary quality, and is prepared to supply orders for the same at prices below that of the imported article of like quality. Consumers will find it to their interest to give this a trial. Orders for all sizes of hammered cast steel, directed as above, will meet with prompt attention.

May 28, 1849.

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for railroads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.

JOHN F. WINSLOW, Agent.
Albany Iron and Nail Works, Troy, N. Y.
The above Spikes may be had at factory prices, of Erastus Corning & Co. Albany; Merrill & Co., New York; E. Pratt & Co., Baltimore Md

Stickney & Beatty, DEALERS IN IRON AND IRON MANUFACTURERS.

AGENTS for the Baltimore City Rolling Mill, (Works of Messrs. Ellicott) also agents for the sale of the Laurel, Locust Grove and Gunpowder (Balt.) Forge Pig Irons; Hupp's Cold Blast Columbia Wheel Iron, Fort and anti-Eatam Pig Irons. Caledonia, Columbia and Capon Cold Blast Boiler Blooms, warranted; Wm. Jessop & Son's Steel; Old Colony and anti-Eatam Nails; Bar Iron, Boiler Plates, Hoop, Sheet, Oval, Half Oval, Horse Shoe and other Iron. Exchange Place, Baltimore.

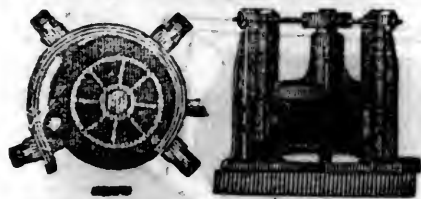
Railroad Iron.

2000 Tons, weighing 58 pounds per lineal yard, of the most approved pattern of T rails, in store and to arrive, for sale by

COLLINS, VOSE & CO.,
74 South St.
New York, June 1, 1850.

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phoenixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll sounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y.

P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery for making Spikes, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

CHILLED RAILROAD WHEELS.—THE UNDERSIGNED are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

Brown's Old Established SCALE WARE HOUSE,

NO. 234 WATER ST., NEW YORK.

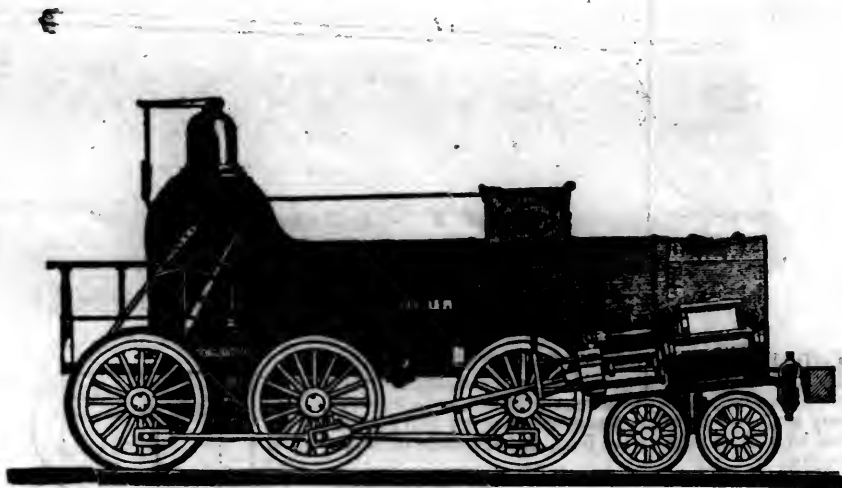
THE Subscriber, Practical Manufacturer of Scales of every description, respectfully asks the attention of Railroad Companies to his Improved Wrought Iron Railroad Track and Depot Scales which for strength, durability, accuracy, convenience in weighing, and beauty of workmanship, are not surpassed by any others in this country.

He is aware that this is rather a bold assertion for him to make, yet he can say with confidence that they have but to be tried to give them precedence over all others.

J. L. BROWN.

Bank Scales made to order, and all Scales of this make Warranted in every particular.

Refer to them!

NORRIS' LOCOMOTIVE WORKS.
BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA.

THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size. Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tyres are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS

PATENT MACHINE MADE HORSE-SHOES.



The Troy Iron and Nail Factory have always on hand a general assortment of Horse Shoes, made from Refined American Iron.

Four sizes being made, it will be well for those ordering to remember that the size of the shoe increases as the numbers—No. 1 being the smallest.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

Etna Safety Fuse.

THIS superior article for igniting the charge in wet or dry blasting, made with DUPONT'S best powder, is kept for sale at the office and depot of

REYNOLDS & BROTHER,

Manufacturers,
No. 85 Liberty St.

NEW YORK.

And in the principal cities and towns in the U. States.

The Premium of the AMERICAN INSTITUTE was awarded to the Etna Safety Fuse at the late Fair held in this city.

November 3, 1849.

17

UNION WORKS,

North street, opposite the Railroad Depot,
BALTIMORE.

Poole & Hunt,

Manufacturers of Steam Engines and Mill Gearing, Machinists' Tools, and all kinds of heavy and light Machinery.

Also put up Arrangements of Wrought Iron Pipes for heating buildings and conveying steam or water.

Castings of every kind furnished at short notice.

Every exertion will be made to insure the satisfaction of customers.

Patent Machine Picket Fence

SIX DIFFERENT STYLES of this fence are now made by patent machinery; and is by far the most economical fence for Railroads, Farms, Yards, etc., ever yet offered to the public, costing only from 4 to 30 cents per foot, according to pattern; and is so put up as to be shipped at a trifling expense. Full particulars will be furnished, by addressing the subscriber, to whom all orders should be sent.

N. STRATTON, Troy, N. Y.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 136 NASSAU ST., NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.

SECOND QUARTO SERIES, VOL. VII., No. 25!

SATURDAY, JUNE 21, 1851.

[WHOLE No. 792, VOL. XXIV.

ASSISTANT EDITORS,

J. T. HODGE, *For Mining and Metallurgy.*
GEN. CHAS. T. JAMES, *For Manufactures and the
Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & CO., 136 NASSAU ST.

Saturday, June 21, 1851.

State Debt of Indiana.

Messrs. Winslow, Lanier & Co., of New York, well known for their connection with the leading railroad enterprises in the western States, have published a pamphlet containing a full statement of the State debt of Indiana, embracing the history of its origin, and the subsequent arrangements which have been made for its payment. The pamphlet is a very valuable paper, as it contains a full account of the present condition of this debt, and from the means of information possessed by Winslow, Lanier & Co., and the intimate knowledge which they have upon the subject, may be relied upon as entirely correct.

The Legislature of Indiana, of the year 1835-6, passed a law providing for an extensive system of internal improvements, and authorised the issue of five per cent. bonds to raise the necessary means. These bonds were sold to the amount of \$11,048,000; but the State received only about \$8,000,000,

which was expended upon various lines of railroad and canal. About \$3,048,000 was lost through the failure of the depositories of the money; the sales of the whole being regarded as *bona fide*. Many roads, canals and turnpikes were commenced, but none completed, except about 27 miles of the Madison and Indianapolis railroad, and the Erie and Wabash canal, to Lafayette, a distance of 160 miles. In 1841, the State, from financial embarrassments, was forced to suspend work on all lines in progress, and failed to meet the interest on her bonds.

Matters remained in this situation till the Legislative session of 1846-7, when an act was passed, making provision for the payment of her public debt, the main features of which are as follows:

For one half the principal, the State agreed to provide by taxation, and give her creditors certificates of stock therefor, bearing 5 per cent. interest, redeemable at the pleasure of the State after twenty years.

For one half the arrears of interest, to give certificates of stock, bearing interest at the rate of 2½ per cent. per annum, after the 1st January, 1853, redeemable at the pleasure of the State, also provided for by taxation.

The payment of the other half, principal and interest, was made chargeable on the Wabash and Erie canal, under certain stipulations and restrictions, as hereinafter mentioned—for the final payment whereof the State is in no wise responsible.

Growing out of this funding arrangement, the state debt was divided into two parts, one called "Indiana State Stocks," and provided for by taxation, and for which the faith of the state is pledged; the other, "Indiana Canal Stocks," for the payment of which the Wabash and Erie canal, together with the lands and other assets belonging thereto, are pledged,—the state not being responsible therefor.

Upon this law, for each original bond of \$1,000 and its accrued interest, the holders received, in 1847:—

1. For one-half the principal, a certificate for \$500, bearing interest at 5 per cent., payable half-yearly, commencing 1st July, 1847; 4 per cent. in cash, 1 per cent. funded to 1st January, 1853, after which the whole is payable in cash.

2. For one-half the back interest, a certificate for \$150, bearing interest at the rate of 2½ per cent. after 1st January, 1853. These stocks are payable by the state.

3. For the other half of principal, a certificate for \$500, bearing 5 per cent. interest after 1st January, 1847.

4. For the other half of arrears of interest, a certificate of \$150, bearing 5 per cent. interest after the 1st January, 1853.

These stocks are payable out of the revenues of the canal.

There exists, then, the following debt and stocks pertaining to the state of Indiana, up to the 5th August, 1850:—

1. The original bonds not surrendered, nor new certificates taken under the Act of 1846-7, but yet outstanding and uncanceled, to amount of one million four hundred and eighty-five thousand dollars.

2. The Indiana canal loan of \$800,000, made by the bond holders to aid in completing the canal, bearing 6 per cent. interest.

3. The Indiana state 5 per cents., issued for one-half the principal.

4. The Indiana 2½ per cents., issued for one-half the arrears of interest.

5. The Indiana canal 5 per cent. "preferred canal stocks," issued for one-half the principal to those of the bond holders who did advance their portion of the \$800,000 loan to complete the canal.

6. The Indiana 5 per cent. "special preferred stock" issued for one-half the arrears of interest to subscribers, as aforesaid.

7. The Indiana canal 5 per cent. deferred stock, issued for one-half the principal to those who did not subscribe to the said \$800,000 loan.

8. The Indiana 5 per cent. special deferred canal stock, for one-half the arrears of interest to non-subscribers to said loan.

The canal stocks issued to subscribers to the loan, are called "preferred canal stocks," and will be first paid both principal and interest out of the canal revenues, before either interest or principal is paid on the "deferred" canal stocks issued to non-subscribers, the latter coming in after the former are fully paid and satisfied.

The amount of these stocks on the fifth of August last, stood thus:—

Original bonds not surrendered or cancelled, then outstanding \$1,485,000

STATE.	
5 per cent. state stocks, paying 4 per cent. until 1853	\$4,941,000
2½ per cent. state stocks, paying 2½ per cent. after 1853	1,775,600

CANAL.	
6 per cent. canal loan	\$ 815,000
Preferred canal stocks, bearing 5 per cent. interest from 1st January, 1847	4,079,500
Special preferred canal stocks, bearing 5 per cent. interest after 1st Jan., 1853 ..	1,215,825
Deferred canal stocks, interest at 5 per cent. from 1st Jan., 1847	861,000
Special deferred canals, interest from 1st Jan., 1853	250,600

The market value of these different stocks is as follows:—

Indiana old bonds not surrendered, bearing interest since July, 1841, \$200 for each bond of \$1000.
Indiana 6 per cent. canal loan, half-yearly inter-

est, payable at the office of the trustees in New York, 88 per cent.

Indiana 5 per cent. state stocks, 84 per cent.

Indiana 2½ per cent. state stock, 44 per cent.

Indiana 5 per cent. preferred canal stock, 44½ per cent.

Indiana special preferred canal stock, 23 and 24 per cent.

Indiana deferred canal stock, 5 per cents., 15 per cent.

Indiana special deferred canal stock, 10 per ct. Accrued interest in all cases going to the purchaser.

Of the above enumerated stocks, growing out of the funding arrangement, only the following are chargeable on the revenues of the state, viz:—

5 per cent. state stock, to amount of \$1,941,000
2½ per cent. state stock, " " " 1,775,600

Total the state has to provide for, \$6,816,600

When the old bonds yet outstanding are surrendered, and the new securities taken under the act aforesaid, there will be about \$850,000 added to the above, making the total state debt \$7,666,600.

The state owes another debt of \$1,490,000, for 5 per cent bonds issued to pay her subscription to the State Bank of Indiana. The bank has regularly paid the interest on these bonds. It has also declared an annual dividend of 10 per cent. A large sinking fund has been created out of the excess of dividends; and it is believed that it will in time be sufficient to pay the entire debt, leaving nearly \$1,000,000 for the benefit of common schools, to which the charter of the bank appropriates it.—The bank is the only investment from which the State has derived any profit.

Ample provision has been made to meet the interest, as it falls due, under the new arrangement. After the present year a sinking fund will begin to accumulate. The taxes are now assessed upon a State valuation of \$148,000,000, and upon 149,986 polls; each being charged with a poll tax of 75 cents. A new valuation is to be made of the State, which will probably carry the amount up to \$250,000,000. As the amount of taxes and valuation preserve the same ratio, this sum would give a sinking fund of \$300,000, after the payment of interest.

In 1841, the State, owing a domestic debt of about \$1,500,000, issued to her creditors evidences of debt, called State Scrip, redeemable for taxes. This issue has now been all called in, with the exception of about \$77,000. This sum will be taken up the present year, leaving the entire revenues of the State government applicable to the reduction of its debt. The net revenues for the present year are estimated at \$490,000, to be applied as follows:

State government	\$90,000
Convention	70,000
Benevolent societies	60,000
Pay interest on funded debt	193,000
Scrip to be redeemed	77,000

\$490,000

The expenses of the convention are extraordinary: and as the \$77,000 are for a debt to be called in, there will be \$147,000 applicable to the sinking fund next year, with the same revenue as the present. But the increased valuation will probably be sufficient to produce a surplus of \$300,000 a year for the sinking fund.

In 1820 the population of the State was 147,000; in 1830, 340,000; in 1840, 683,000; and in 1850, 1,000,000.

Most of the public works undertaken resulted in entire loss to the State. The value of the interest of the State in the Madison and Indianapolis railroad is estimated at from 2 to 300,000 dollars. The State has a residuary interest in the canal, which

has been conveyed to trustees for the benefit of the State creditors. In reference to this work, we copy the following from the statement of Messrs. Winslow, Lanier & Co.

We have also taken pains to ascertain the history, present condition, and future prospects of the Wabash and Erie Canal, which stands pledged for the payment of the canal preferred five per cent. stocks. This canal commences in Ohio, about 20 miles east of the Indiana state line, thence by Fort Wayne, following the general course of the Wabash River by Peru, Logansport, La Fayette, Covington, Terre Haute, Point Commerce to Evansville, on the Ohio river, a distance of 379 miles, connecting in Ohio with an extension of the same canal 84 miles further, to Toledo, on Lake Erie, thus giving a continuous canal navigation from Lake Erie to Evansville on the Ohio River, a distance of 463 miles, traversing a country of great fertility, dependent on the canal for transportation to a market. This canal also connects in Ohio some 40 miles west of Toledo, with the Miami extension canal, which extends to Cincinnati, a distance of 212 miles, and is now in successful operation. As early as 1827, the congress of the United States made a grant of lands to the state of Indiana of each alternate section, for five miles on each side, for the purpose of constructing a canal from Lake Erie to the mouth of the Tippecanoe River, near Lafayette. Subsequently, other acts of Congress were passed, granting to the state each alternate section for five miles on each side of the entire line, for the purpose of continuing the canal from the Tippecanoe to the Ohio River. The state accepted the grants, sold a portion of the lands, completed the canal from the point of commencement in Ohio to Covington, a distance of nearly two hundred miles, and partially completed the line to Terre Haute, expending thereon nearly five millions of dollars, being the proceeds of sales of lands granted by Congress, bonds, etc.

By the terms of the act of the Legislature of 1846-7, the canal, together with the lands granted by Congress, belonging thereto, and other assets, were assigned by the Governor of the state to three trustees, two chosen by the bondholders, the third by the Legislature. The canal to be by them completed out of the said assets, the revenues of the finished portion of the Canal, and the \$800,000 loan; and to be controlled and managed for the use and benefit of the holders of the \$500,000 loan certificates; the Indiana preferred canal five per cents, first, and after they are paid, the residue, if any, for the holders of the deferred canal five per cent. stocks.

The trustees entered on the duties of their office, and have completed the line to Point Commerce, 352 miles from Toledo. The residue of the line, 111 miles, to Evansville, has been put under contract, and will be completed by the 1st November, 1852. It is confidently expected that the assets transferred to the trustees by the state, including near 900,000 acres of valuable land then unsold, lying along and near the line of the canal tolls, &c., arising from the finished portion, will pay off the entire cost of completing the Canal to the Ohio River, (including the \$800,000 of cash already advanced by the creditors to aid in its completion,) and leave a clear net surplus of more than \$300,000. When the trust came into the hands of the trustees in 1847, according to the estimates of the engineer, (which have proven to be correct,) it required about \$2,000,000 to complete the line to Evansville, making the entire cost of the canal about \$7,000,000. The receipts of the Canal in its unfinished state, were for 1848, \$146,148 90; 1849, \$134,459 03; 1850, \$157,158 38. The failure of the wheat crop in 1849, occasioned the small receipts for that year. The result is that the payment of about \$4,000,000 with five per cent. interest from the 1st of January, 1847, is chargeable on this canal, costing \$7,000,000, receiving yearly, when but half completed, \$160,000 of tolls. When the entire line to Evansville is completed (to which point the greater amount of shipments will be made,) it will be safe to estimate the net receipts at \$300,000 annually. After 1852, the trustees holding the canal free of debt with a considerable surplus, for the use and benefit of the holders of the preferred canal stocks, will begin to apply the net

proceeds to the payment of the arrears of interest, which will soon be extinguished. The Ohio canal from Cleveland to Portsmouth, on the Ohio River, 311 miles long, which does not traverse a country near so fertile as that through which the Wabash and Erie Canal passes, earns seven per cent. on its cost, (near \$5,000,000,) it is but reasonable to expect that the latter will earn six per cent. on its cost of \$7,000,000, it having no competition in railroads.

Railroads in Massachusetts.

Below is an exhibit of the different periods at which the railways of Massachusetts were opened: Boston and Worcester, opened to Newton (Davis' Tavern) April 7, 1834; to Needham, July 8; to Westboro', November 15; and throughout, July 3, 1835.....miles 45
Taunton branch, opened throughout August 8, 1834 11
Boston and Providence, opened to Dedham June 30, 1834; and throughout, June 11, 1835 41
Boston and Lowell, opened throughout June 24, 1825 26
Lowell and Nashua, opened throughout Oct. 8, 1838 15
West Stockbridge, opened Nov. 30, 1848... 3
Eastern, (the Eastern New Hampshire railroad, 17 miles in length, is included, being operated by the Eastern Massachusetts railroad,) opened to Salem August 28, 1838, to Newburyport, June, 17; and to Portsmouth, November 9, 1840; the Portsmouth Saco and Portland railroad was opened November 22, 1842 55
New Bedford and Taunton, opened throughout, July 2, 1840 20
Western, (the Albany and West Stockbridge railroad, 38½ miles in length, is included, being owned and operated by the Western railroad corporation, opened to Springfield October 1, 1839; to Chester Factories, May 22; to Pittsfield, August 9; and throughout, December 21, 1841 156
Boston and Maine, opened to Andover Sept. 1, 1836; to Haverhill, April 10, 1837; to Bradford, March 15, 1838; to Exeter, Dec. 1, 1840; to Newmarket, July 23, 1841; to Dover, September 24, 1841; and throughout July 24, 1843 55
Number of miles of branches opened in 1841 5
Charlestown branch, opened to junction with Lowell railroad November 1, 1839; to Fresh Pond, January 5, 1842; united with Fitchburg railroad, January 31, 1846 6
Berkshire, opened throughout December 1, 1842 21
Number of miles of branches opened in 1842 3
Number of miles of branches opened in 1844 2
Fitchburg, opened to Waltham December 20, 1843; to Concord, June 17; to Acton, Oct. 1; to Shirley, December 30, 1844; and throughout, March 5, 1845 45
Stoughton branch, opened April 7, 1845.... 4
Fall River, opened throughout June 9, 1845 42
Boston and Maine extension, opened July 1, 1845, and then united with the Boston and Maine 19
Old Colony, opened throughout November 10, 1845 37
Number of miles of branches opened in 1845 12
Lexington and West Cambridge, opened September 1, 1846 7
Pittsfield and North Adams, opened throughout October 8, 1846 18
Connecticut River, opened to Northampton December 13, 1844; to South Deerfield, August 17; and to Greenfield, November 23, 1846 36
Number of miles of branches opened in 1846 31
Dorchester and Milton, opened May 1, 1847 3
Providence and Worcester, opened throughout, October 20, 1847 43
Grand Junction, opened December 1, 1847. 6
Number of miles of branches opened in 1847 20
Cape Cod branch, opened to Agawun Jan. 1, and to Sandwich January, 31, 1848 28
Peterboro' and Shirley, opened to West Townsend February 15, 1848 12
Stony Brook, opened throughout July 1, 1848 13

Lowell and Lawrence, opened throughout July 1, 1848.....
 Connecticut River, opened to Northfield Nov. 1, 1847.....
 Worcester and Nashua, opened throughout December 15, 1848.....
 Number of miles of branches opened in 1848
 South Shore, opened throughout, Jan. 1, 1849
 Vermont and Massachusetts, opened to Baldwinville September 1; to Athol, December 27, 1847; to Northfield, July 1, 1848; and throughout February 20, 1849.....
 Essex, opened throughout March 1, 1849...
 Norfolk County, opened to Blackston April 23, 1849.....
 Harvard branch, opened December 31, 1849
 Number of miles of branches opened in 1849
 Stockbridge and Pittsfield, opened throughout January 1, 1850.....
 Fitchburg and Worcester, opened throughout February 11, 1850.....
 Newburyport, opened to Georgetown May 23, 1850.....
 Salem and Lowell, opened throughout Aug. 5, 1850.....
 South Reading branch, opened Sept. 1, 1850
 Petersboro' and Shirley extended.....

Number of miles in operation, Dec. 31, 1850. 1,142

The following will show the progress of railway communication in the state:—

Years.	No. of in operation, January 1.	No. of miles railways in operation,	Cost.
1836.....	4	123	.....
1837.....	4	123	.....
1838.....	4	123	.....
1839.....	6	141	.....
1840.....	6	141	.....
1841.....	8	216	.....
1842.....	10	432	\$19,087,013
1843.....	12	462	19,971,593
1844.....	12	462	20,396,055
1845.....	12	464	21,572,820
1846.....	16	623	27,034,927
1847.....	18	715	32,796,363
1848.....	21	787	41,392,632
1849.....	27	945	45,125,768
1850.....	32	1,094	50,959,452
1851.....	36	1,142	51,873,895

Institution of Civil Engineers.

The paper read was "A Description of the 'Royal Border Bridge,' erected over the River Tweed, on the line of the York, Newcastle, and Berwick railway," by Mr. G. B. Bruce, M. Inst. C. E.

This viaduct, the total length of which was 2,160 feet, and the extreme height 129 feet, consisted of twenty-eight semicircular arches, each 61 feet 6 inches span; and the whole constructed of stone, with the exception of the inner part of the arches, which was of brick laid in cement. It was divided into two parts by a central abutment, which enabled the land arches to be completed, and, along with a temporary timber bridge, to be brought into use for public traffic before the completion of the river arches, which necessarily occupied a considerable period in execution, owing partly to very substantial coffer-dams having been requisite for the river piers; but principally to its having been thought advisable to pile the foundations of most of those piers, as the bed of the river was liable to be scoured away by the rapid stream. The piles, both of the coffer-dams and of the foundations, were mostly of American elm, as it was found that the heads of the memel piles required to be frequently cut off and re-hooped, when driven by Nasmyth's steam pile-driver, which was almost entirely used, both on account of expedition and of economy; for it was proved, that whilst the hand-ram only gave one blow in four minutes, the steam pile-driver gave sixty blows in one minute, and that the cost of the former was two shillings per lineal foot, whereas that of the latter was very little more than one shilling per lineal foot. It was also remarked that the force was more advantageously employed in the case of the steam pile-driver, as, on account of the ram being heavier and the fall less, the piles were not so frequently split.

The piers had an ashlar facing, and were filled

in with well-grouted rubble, having occasional through courses of ashlar, and an ashlar tie in the centre of their width from top to bottom. Great care was taken in the preparation of the mortar and the grout used in this work, and after a variety of experiments the plan finally adopted was,—in the case of setting lime for ashes,—to grind quicklime dry by itself, in a common mill, and then to mix it with coarse sharp sand, screened out of gravel taken from the bed of the river, in the proportion of three of sand to one of quicklime; this was then put under cover until required. Lime to be used for grout was also ground dry, and along with it was ground slag from an iron furnace, then gravel from the river was mixed to it without being screened, the proportions being, quick lime one, slag three-quarters, and gravel two and a quarter. The mortar when used had absorbed a sufficient quantity of moisture from the atmosphere and the sand, to prevent its being too hot for use, and yet, as it had not been previously mixed with water and wrought into a paste, it retained its original setting power. This mortar required to be very soft, and the stones to be well wetted, and as the sand was very coarse, thick joints were necessary, but in a few weeks it set as hard as Roman cement. All the lime used in this work was from the mountain limestone of the Scremerston and Lowich districts of Northumberland.

The centres, which were stated to have been of peculiar construction, were supported entirely from the piers, so as to prevent any accident happening, if the scaffolding was injured, either by the heavy floods of ice to which the river Tweed is subject in winter, or from the vibration caused by passing trains; as, when the idea was first entertained of having a temporary bridge, the intention was merely to add to the contractors' scaffolding, and to make it serve for both purposes. This intention was however, abandoned, and an entirely separate timber bridge was erected, on the east side of the stone bridge, at a cost of £14,340.

The total cost of the "Royal Border Bridge" was £120,000, and of the whole contract, one mile in length, in which it was comprised, £207,000, including an embarkment, which had to be made entirely from side cutting, and which contained probably 760,000 cubic yards.

Mining in China.

D. D. J. Macgowan, corresponding member of the Asiatic Society of Bengal, has thrown much light on the subject of the presence of coal seams in China, and the results attending the working. He states that this mineral exists, to a greater or less degree, throughout the different mountain ranges which girt the great plain of China. On its northern boundary it is met with in numerous localities, on the Celestial Mountains, on the Mongolian steppes, and various offsets of the Altai range, the most productive of which are Shinking and Shansi. Unskilful mining, and the absence of cheap means of transit, greatly enhance the cost. Except for manufacturing and culinary purposes it is little used, the inhabitants trusting to the furs and skins of animals for protection from the extreme rigor of their winter. Chinese mythologists gravely state that in some of the mines the furnaces still exist in which Nurkwa fused stones for repairing holes in the heavens. The most ancient worked deposits lie in the middle and southern parts of the empire. The coal most in demand is called Kwang coal, from the province of Hanan. It is black, very compact, columnar structure, occasionally iridescent; and from a superabundance of carbon, almost analogous to Pennsylvanian anthracite. It burns intensely with a little blue flame, deposits a red ash, and the specific gravity is 1.34.

Numerous varieties are produced in the provinces of Kiangsu, Chehkiang, Singan, and Changshan; and the probable annual produce in China is about 820,000 tons, producing nearly \$6,000,000. The paucity of the supply is not owing to the poverty of the mines, but chiefly to the want of those facilities for mining which the steam-engine alone can supply. The earliest notice of coal is recorded in the history of the Hun dynasty, from 202 B.C. to A.D. 25, or 2050 years ago; while in Europe it has been little known above 300 years. To appreciate rightly the value of these vast coal deposits,

extending from Corea to Siam, its value must be applied to the changes which are taking place in the route of transit with western Europe, and the prospective greatness of Anglo-Saxon states springing up in the neighborhood of the Chinese shores. —*London Mining Journal.*

New Safety Valve.

Mr. James Nasmyth, of the Bridgewater Foundry, near Manchester, has registered an "absolute safety valve"—the construction of which, although simple, is very ingenious, and the objections to the valves now in use are effectually removed. It is free from all external or internal spindles and contrivances intended to act as guide-rods, which often corrode, and render the valve no indicator of the variations of pressure. It has no external lever or weight, therefore cannot be tampered with by being over-loaded; but, as the inventor states on the diagram, "the chief feature of novelty in this safety valve consists in the manner in which the swaying backwards and forwards motion of the water in the boiler is employed to keep the valve free, and so remove all tendency to become fast in its seat, whether from mud of any other cause. The valve and seat being portions of a sphere, they fit in all positions." To understand this more distinctly, we may state that the upper part of the valve consists of a brass sphere, say 7 in. diameter, resting upon a concave rim, about 5 in. diameter, open below, and in which circular rim it can move freely in all directions, something like a glass globe placed on the rim of a tumbler glass (without bottom.) Through the centre of the sphere is screwed a vertical rod, which descends into the boiler. Half-way down it, and in the stream, it is surrounded by a cylindrical weight, adjusted to the pressure required, and calculated according to the area of the valve. At the bottom of the rod, and partly in the water, is what we take to be a hollow sphere, which the movement of the boiling water will constantly keep in motion. The whole represents something like a pendulum, and the slight oscillation communicated to the bottom of the rod will make the sphere at the upper end of it move in the rim, and thus prevent the valve from becoming inoperative by adhesion. The diagram was inspected by a large number of gentlemen, an additional interest being attached to it in consequence of the recent serious loss of life by boiler explosions. —*London Mining Journal.*

Wabash and Erie Canal.

The board of trustees of this work met at Evansville on the 23d ult. There were present, Charles Butler, Esq., President; Thomas Dowling, Esq., Resident Trust.; and Dr. W. R. Noffsinger, State Trust. Jesse L. Williams, Esq., Chief Engineer, was also in attendance.

Of the more important matters acted upon, says the Evansville Journal, were the arrangements made for a side cut at Clinton, and the subscription by the board of two thirds of the capital stock, for a bridge over the Wabash at the same place. The board also determined, for the purpose of providing suitable business facilities at Evansville, to widen nearly one and a half miles of the Canal, to sixty feet water line; and to build a sufficient number of bridges—the proper authorities securing the trustees against damages for the right of way, and assuming the charge of repairs and rebuilding of all bridges after they have once been properly constructed.

The navigation of the Canal, from Toledo to Point Commerce, has been complete and uninterrupted since about the first of April.—Some damage has been caused, it is reported, by heavy rains on the Upper Wabash, within a few days past, and which may cause some interruption.

The Newbury division is finished, except the dam at Newbury, and a small amount of work on the tow path. It will cost about \$3,000 to complete the dam.

On the Maysville division it will cost \$20,000 to

finish it. It is expected, should no great unforeseen difficulty arise, that the line of Maysville may be completed and filled with water by the first of September next.

The work on the Petersburg division, with the exception of the White River aqueduct, is in an advanced state. This division may be expected to be finished by spring—steps were taken by the board to ensure the completion of the aqueduct as rapidly as practicable.

The estimates on the Evansville division, up to May 1st, inclusive, amount to \$87,579. The force now employed by the contractors on this division, is equal to about 1000 men.

The trustees agreed to unite with the Ohio Board of public works in the erection of a Weigh Lock at the junction of the Wabash and Erie and Miami canals in Ohio, to be used for the joint benefit of both canals.

A New and Economical Locomotive Engine for Light Trains.

We have had opportunities, during a month past, of observing the performance of a new Locomotive on the Dedham branch railroad, of a style and character adapted to the light trains, which are generally known as special trains, and which are now so universal and frequent on the railroads terminating in the city. These trains are especially intended for the accommodation of those residents of towns in the neighborhood, whom pleasure or business call daily into the city. It becomes important, therefore, that the trains should be frequent and the fare cheap, in order to command the maximum amount of travel. Hence it has been deemed desirable to study the greatest economy in working the kind of trains to which we have alluded. Two great sources of expense are observable among the items which make up the expenditures of operating a railroad, viz.: fuel, and repairs of railroad, which last includes the wear and tear of iron. The effort towards economy in the locomotive running on the Dedham branch, has been directed to these two points, that is, a saving of fuel and in road repairs. In the latter item, as we have remarked, is included wear and tear of iron; and experience is teaching us every day that the durability of the iron has been overestimated; and will prove a material of expensive and not unfrequent renewal. Not to tax it beyond necessity, by running twenty-ton locomotives, when machines of half that weight will perform the same service, with a consumption of half the quantity of fuel, is a common sense proposition, which none will dispute.

We propose, briefly, to state the service performed by the new locomotive of which we have spoken, and which is called the "Roxbury," premising that some six weeks ago it took its place on the Dedham line, in lieu of a twenty-ton locomotive, and has regularly performed the duty assigned to the latter, hauling occasionally two passenger cars of seventy seats each, and a baggage car. The distance run is ten miles, (with a grade of 52.8 feet per mile, 3 miles in length,) making seven stops to take and leave passengers; and the time between Boston and Dedham never exceeds thirty minutes.

The "Roxbury" was built at the machine shop of the Boston and Providence railroad company, by their master mechanic, Mr. Geo. S. Griggs, and in substantial and neat workmanship is in keeping with his well known and established skill. The following are the description and dimensions of the "Roxbury," as taken from Mr. Griggs's notes:—

Six wheels—a pair of drivers of 4½ feet diameter; a pair of forward wheels; and a pair of trailing wheels of 33 inches diameter.

From centre to centre of extreme axles, 11½ feet, the driving shaft being 6 feet from the shaft of trailing wheels.

Cylinder 9 inches; length of piston 16 inches; cylinder of boiler 30 inches; number of tubes 115; outside diameter of tubes 1½ inch; tube surface 331 square feet; fire box surface 35 square feet; total heating surface 366 square feet; and of grate 4½ square feet; boiler contents, 30 cubic feet of water.

The water tank and wood space are placed upon the frame of the machine, to which the former is secured, in the rear of the foot board. The tank carries 40 cubic feet of water. The machine presents altogether a very compact appearance, and runs very steadily. An arrangement of arms and levers is attached, which is brought into action on ascending planes, so as to add to the adhesive weight and thus renders the machine more efficient where a higher power is required. Prepared for service, the total weight is something over ten tons, which being distributed on six wheels, will, compared with the usual heavy locomotives in common use, save the track very materially.

The comparison of fuel consumed, in lbs. is 73.38.—*Boston Traveller.*

Stupendous Machine for Shipping Coal.

Messrs. Finch & Willey, iron founders, of Liverpool, have just completed a large machine for the Newport Dock company, to load coal vessels, without the aid of any intermediate carriage between the railway wagon and the ship. By means of this immense machine, the coal truck, which, with its contents, will amount to about 13 tons, will be raised to an elevation of 16 feet; and, by an ingenious mechanical appliance, as the truck ascends it will be gradually turned in such a manner as to discharge its ponderous contents into the ship; the whole time of the elevation, discharge, and descent, only occupying one minute and a half. The machine resembles slightly the temporary fixed cranes used in the erection of churches and other large buildings, for raising large blocks of stone, but the framework is much stronger than even these colossal structures; and, large as it is, it is planted on wheels, so that the whole may be moved to any particular point along the line of docks on which it is intended to be used. It will probably be moved through a distance of 500 yards occasionally. The coal trucks, by means of a railway laid down at the docks, will approach the ship's side, in the centre of the frame work of the large crane, and run upon a moveable platform, which by means of a couple of unusually strong straps, worked upon large cylinders by a ten-horse power steam engine, will be raised to an elevation of 16 feet, when by means of a lever the contents of the wagon will be tilted into the vessel. On the other side is a compensating power—a large iron trough capable of being ballasted to almost any weight. Its object is to regulate the descent of the truck; thus saving an unnecessary expenditure of steam power. The weight of the machine is 45 tons; and the same small engine which works the crane also moves it along the line of docks as required. The following will give some idea of its dimensions:—length, 32 feet; height, 34 feet; and width, 22 feet. By the aid of this appliance, 1000 tons of coal may be shipped in a day with no more manual labor than will be afforded by three men and a boy. At the trial of the machine on Monday, Mr. Braithwaite Poole, several members of the Dock company, and a number of gentlemen connected with the coal trade, were present, and appeared to be highly pleased with it.—*London Mining Journal.*

Chicago and her Railroads.

A short time ago it was the chief pride and boast of the Garden City that she was at the head of the lake navigation, and at the only point where the waters of the Mississippi mingled with those of the lake, through a direct and navigable channel.—These, then considered almost unequalled advantages, were deemed sufficient to cause her soon to rival the largest of our western cities in point of population and wealth, if not outstrip them in reaching the goal—excelsior. If the above named advantages were sufficient to cause such great advancement, what shall the thought of those about to be conferred upon her by reason of the several railroads now projected and in process of completion. We may be considered chimerical, but we hazard the assertion, that ere six years roll by, Chicago will have no less than seven great lines of railway completed, and centering at, and radiating from her, and connecting her with every considerable city in the Union. We refer to the Michigan Central and Southern lines, the Aurora and Peru, Galena and Chicago Union, Rock Island and Chi-

cago, Milwaukee and Chicago, and the great Illinois Central, and her branches to St. Louis and Cincinnati. A part of the above named roads will probably be completed in the course of two or three years, and perhaps sooner. We shall also be in connection with the Mississippi at seven different points, viz: Dubuque, Galena, Savannah, Rock Island, Ottawa, St. Louis and Cairo; and with the Illinois river at four different points, viz: Ottawa, Peru, and Naples, being, in addition to this, on the direct route to the Pacific. These roads have an existence, other than on the map, and in the heated brain of fancy—they are realities, and under the control of those who are both able and desirous to complete them as soon as money and energy will do it. In view of such advantages as these, who shall ascribe a limit to the population and wealth of our noble State and city? Who shall picture their future destiny? Our canal and railroads, however, are not the only things that are contributing to our prosperity; plank roads, the farmer's favorites, are stretching away into the interior, in almost every direction, tapping the richest and most productive regions in the Union, and pouring into our lap produce of all kinds in great abundance. In view of all these advantages, what better inducement can be offered by any city or State to the industrious and enterprising immigrant. The mechanic, of whatever description, may readily find constant employment at good and even high wages. The farmer cannot find a better country to pursue his vocation; good markets are, or very soon will be, accessible from any point, at low rates of transportation. Land is rapidly rising in value, the increase paying a good percentage on the investment, in addition to the profit to be derived from its cultivation. In view of all these unequalled advantages, we feel confident that enterprising and industrious immigrants from all parts of the old world, will pour into our State by thousands, while many from New England will make Illinois their abiding place. They will find room enough for them all, and a hearty welcome from the suckers.—*Chicago Tribune.*

Early Application of Steam.

About 280 B. C., Hero, of Alexandria, contemporary with Ctesibiscus, formed a toy which exhibited some of the powers of steam.

A. D. 540—Anthemius, a mathematician and architect, employed by Justinian to embellish Constantinople, in a dispute about the walls of a house, was vanquished by the eloquence of Zeno. To avenge the defeat, Anthemius arranged several chaudirons of water, each covered by the wide bottom of a leathern tube, which rose to a narrow top, with pipes extended to the rafters of the adjoining building. A fire was kindled beneath the chaudi-ron; the steam of the boiling water ascended thro' the tubes, and the house was shaken by the efforts of imprisoned vapor. This is the first notice of the power of steam, as recorded by Gibbon.

Stuart, in his work on the steam engine, says, that the royal Spanish archives record that "Blasco de Garay tried a steamboat of 209 tons, with tolerable success, before Charles V., at Barcelona, June 17, 1543. Ravago, the chancellor, opposed it, and it was laid aside. It consisted of a chaudi-ron of boiling water and a moveable wheel on each side of the ship." The expense of the experiment was paid by the government, and a present made to Garay.

The first railroad was constructed at Newcastle-on-Tyne, A. D. 1650.

The first idea of the steam engine in England, was in the Marquis of Worcester's "History of Inventions," A. D. 1663.

Newcomen made the first steam engine in England, 1710.

Steam engines first applied by Savary for taking ballast or gravel out of rivers, and for raising great quantities of water. Patents granted in London, 1718.

James Watt made the first perfect steam engine in England, 1764.

First idea of steam navigation in England was set forth in a patent to Jonathan Hulls, for a vessel to go against wind and tide, 1736. Thomas Paine proposed this application in America, 1778. Marquis Jouffroy constructed one on the Saone, 1781. Two Americans published on it, 1785. William

Simington made a voyage in one in 1789, on the Forth and Clyde canal; in 1802 the experiment was repeated.

In the meanwhile, John Fitch, of Philadelphia, navigated a boat by a steam engine of his own contrivance, on the Delaware, 1787.

Ramsey propelled a boat by steam at New York, in October, 1782.

But it was Robert Fulton, a native of Pennsylvania, who first brought steam navigation to such practical perfection, that it became successfully and generally used by all nations. As early as 1793, he began to apply his attention to the subject; soon after, he visited England and France; examined Symington's vessel, in Scotland; in 1803, in conjunction with Mr. Livingston, the American minister in France, navigated a boat by steam on the Seine—and succeeded in perfecting steam navigation in 1807, when he started the first permanently practical steamboat, the "Clermont," on the Hudson river, at New York.

Oliver Evans, a native of Philadelphia, constructed a locomotive steam engine to travel on a turnpike road, and invented several improvements in machinery.

Alabama.

Montgomery and West Point Railroad.—In our paper of the 3d ult., we gave a brief notice of the operations of this road for the past year. We have since received the annual report of the directors, which enables us to present a more detailed statement of the condition of the company.

The gross income of the road for the past year amounted to the sum of \$140,057 09. The current expenses to \$67,148 73. Income from other sources \$8,155 48. Making the whole net revenue \$81,063 84. From this sum should be deducted interest paid on loans of \$23,492 41; leaving the sum of \$57,571 43, which is equal to 9½ per cent on the capital stock.

The whole amount received by the company the present year is as follows:

Balance on hand at the commencement of the year.....	\$30,343 36
Net income as above.....	57,571 43
Received on company's bonds.....	54,065 50

\$141,980 29

The expenditures (of which \$80,349 78 was for the extension from Opeleika to West Point) independent of running the road, have been \$117,889 75, leaving \$24,090 54 applicable to the payment of the bonds of the company. The amount of bonds issued to assist in building the new road, was.....\$61,065 50

Paid March 1, 1851..... 21,171 50

Leaving outstanding..... 39,894 00

Of this sum there is due on the first day of July..... 16,000 00

The balance.....\$23,894 00 will be due March, 1852. So that the net income of the company, says the report, will be amply sufficient to meet every outstanding obligation, and provide the necessary increase of locomotives and car force.

The receipts of the road for the past five years have been as follows:

1847	\$55,787 97
1848	73,706 83
1849	95,665 90
1850	123,781 61
1851	140,057 09

The road was opened for travel to West Point on the 1st of May last; so that a great part of its business thus far has been local. This has been sufficient to yield a very large return upon the capital stock of the company. Its completion to the Chattahoochee river will add very largely to its receipts. As soon as the Atlanta and Lagrange railroad shall

be completed, there will be a continuous line of railroad from Savannah and Charleston to Montgomery. An immense stream of travel will then be thrown upon this route, as it will prove, in connection with the Tombigbee river, the great route between the Atlantic cities, and Mobile and New Orleans. For the purpose of extending the connections of this road still further, the above company proposes to build a railroad branching off from Opeleika, to Columbus, Georgia, a distance of 30 miles. The estimated cost of this branch is only \$285,926 37. The route has already been surveyed and found to be very favorable, and we presume its construction will be immediately commenced. This route would save a distance of 64 miles in going from Montgomery to Macon over that by way of Lagrange and Atlanta. This connection would constitute the Montgomery and West Point railroad the trunk line of both lines of railroad in Georgia, and would probably have a strong tendency to prevent the building of the Girard and Mobile railroad. The report expresses the opinion that a large part of the trade of Columbus would pass over the Montgomery road, and that the merchants belonging to Columbus, would use it as the route by which they would receive their goods.

The above is the only road in operation in Alabama. Its prosperous condition is an encouraging example, and shows what we may expect of the other roads in that State, when they shall come into operation.

The whole cost of the road may be stated as follows:

Capital stock	\$623,800 00
Forfeited stock	67,190 88
	690,990 88
Indebtedness	595,217 99
	\$1,286,208 87

Illinois.

Mississippi and Atlantic Railroad.—We see it stated in the Illinois papers, that the senate of that state have decided that the above company is authorized to proceed under its charter in the construction of its road. The railroad law of Illinois provides that after a subscription of \$1000 to each mile of line, shall have been obtained, companies may organize by the choice of officers, etc.; that such companies may then apply to the Legislature for a charter, giving them the right to commence active operations. The above company organized under this law, but on application to the last Legislature a confirmation of its charter was refused. The company claimed that it had a right to build its road without any additional legislation, and this is the point, as we understand the matter, which has been decided in its favor.

Georgia.

Georgia Railroad.—On the 24th ult. we gave a brief statement of the operations of this road for the year ending March 31, 1851. We have now the annual report of the directors, and are enabled to give a more detailed statement of the affairs of the company.

The gross earnings of the company from railroad operations, for the year ending 31st March last, were. \$728,923 15 And the expenses of management.... 302,437 10

Leaving net profits from road operations

426,486 05

The business operations and resulting profits of

the company, from all sources, for the past fiscal year, may be briefly stated thus:

Gross earnings of the road as above..	\$728,923 15
" " bank.....	55,485 49
	784,408 64

Charged with road expenses	\$302,437 10
Charged with interest on bonds	45,861 56
Charged with expenses of bank, including bank taxes, etc	15,224 59
	363,523 25

Net income from all sources..... \$420,885 39

Two dividends have been declared from these profits of \$3 50 per share, each, or 7 per cent per annum, on the capital stock, amounting to \$280,000, and leaving surplus profits applicable to other purposes, of \$140,885 39.

It will be perceived that the gross profits of the road, compared with the year preceding, have increased \$102,116 13, while the net profits have only increased \$27,961. And while the gross receipts from all sources have increased \$140,885 39, the net profits have increased only \$35,169 20.

"This diminution," says the report, "of net profits, in proportion to gross receipts, has been occasioned, in part, by increased taxation—but mainly by the great advance in the price of labor, materials and provisions, as stated in the reports of the resident engineer and superintendent of transportation. It is, however, to be observed, that our expenses still continue to compare favorably with the best managed roads in the country, as may be seen by a comparative statement appended to this report."

The business has also suffered very much, the report states, from the deficient outfit and bad condition of the State road from Atlanta to Chattanooga. About 50 miles of this road was laid with a flat bar, which is nearly worn out, and has now become a constant source of annoyance. It has not been the policy of the State of Georgia to furnish its road with an outfit; and a portion of the machinery, we understand, has been furnished by the connecting road. Steps have now been taken to procure a suitable equipment.

The item of receipts from the road were as follows:

	1851.	
Passengers	\$244,028 92	
Freight.....	446,499 34	
Rent and mails.....	38,394 89	
	728,923 15	
	1850.	
Passengers.....	\$189,650 45	
Freight.....	398,006 92	
Rent and mails.....	39,149 65	
	626,807 02	

There have been 2 passenger and 5 freight engines added to the motive power of the road the past year. The whole force now consists of 35 locomotives, all in good condition. The outfit of cars consists of

12	eight wheeled	passenger cars.
4	"	" baggage "
14	"	" stock "
181	"	" box "
109	"	" platform "
5	four	passenger and brake cars.

Every department of the road is now in efficient condition. It is earning a very large income from its present business. In a short time this must be very much increased from the extension of the lines with which it will be connected. The Atlanta and

West Point, the East Tennessee and Georgia, and the Nashville and Chattanooga will soon be completed, as will the Memphis and Charleston, opening extended railroad communication in different directions. We see no reason why the revenues of the company should not rapidly increase, and no contingency by which they can be diminished. The road is now one of the most successful in the country, and pays a large dividend to its stockholders. This dividend can be kept up, and a large reduction be soon made in rates of fare. It will probably be found, in the long run, to be a mistake for companies to attempt to earn or divide over seven per cent. Money is worth no more than this on a safe investment, and any higher rate is sure to provoke rival projects, and in the end competition will carry the earnings below that point. The worst thing that ever happened to the Massachusetts railroads, were the high rates of dividend which were made for one or two years.

We are glad to see that the Engineer of the road, Mr. Grant, advises a trial of the compound rail by the company. "In the present plan of track," he says, "the whole strength of the iron way is broken at irregular intervals of about 20 feet, subjecting the machinery to shocks of greater or lesser intensity at each of these points, while the same shocks are communicated to the track, disturbing its adjustment both in line and level, and each successive train receives and gives increased injury. The joints are the fruitful sources of accident, and a large portion of the labor of adjusting track is due to these defects. When gravel or broken stone ballast can be procured, in which to imbed the cross ties, the evil above referred to is not so much felt—because the ties are founded in material, in a great measure unyielding under the weight of passing trains, and which is not affected by water.—The track once carefully adjusted and well packed in the ballast, is not easily disturbed, unless by the action of frost. Our dependence for ballast is mainly upon clay, which is only firm when dry. Under the action of water it becomes soft and yielding, offering an imperfect and uncertain support to our heavy trains. With this defective foundation for the track, the evil of a succession of breaks in the iron way is severely felt. When the road-bed is wet we are often obliged to adjust the same portions of track twice a week to insure the safe passage of trains.

If the "compound rail"—by distributing the joints so as to have not more than one-half of the strength of each line of rails broken at any one point, obviates, to the extent claimed, the labor of adjustment and liability to accident, it should at least receive a fair trial at our hands. One mile laid in the main train will soon test its merits—and if the plan should not fully commend itself to the directors for future adoption, the amount which may be purchased for trial will hardly fail to do equal service with the plan now in use."

The superintendent of the road, Mr. Arms, states that "chilled tire have been in successful use in all the driving wheels of the last engines. With less original cost and greater duration than the wrought iron tire, they can be renewed with much greater facility, and will be found to effect an important saving in this expensive part of locomotive renewals. It has been objected to these tire, that they have less adhesion than the wrought iron—but after a trial of both, under the same engine, we have not found this objection of the slightest practical validity."

Statement of the Business and Expenses of the Georgia Railroad from its opening to April 1, 1851.

From Nov. 1, 1837, to May 1, 1838.	From May 1, 1838, to May 1, 1839.	From May 1, 1839, to April 1, 1840.	From April 1, 1840, to April 1, 1841.	For year ending April 1, 1841.	
75	88	105	147	148	Miles of road in use.
\$23,161	\$61,140	\$63,305	\$66,262	\$61,905	Receipts from passengers.
\$12,589	\$68,789	\$121,098	\$85,963	\$152,195	Do. from freight, mail, etc.
\$35,753	\$134,929	\$184,003	\$152,225	\$248,026	Total receipts.
\$19,367	\$63,362	\$70,246	\$67,283	\$97,518	Total expenses.
\$16,386	\$71,567	\$114,357	\$90,942	\$126,737	Net profits.
.....	.....	.....	.....	.....	Total number of miles run.
.....	.....	.....	.....	.....	Passengers carried one mile.
.....	.....	.....	.....	.....	Tons carried one mile.
.....	.....	.....	.....	.....	Ratio of expenses to receipts.
.....	.....	.....	.....	.....	Cost per mile run in cents.
.....	.....	.....	.....	.....	Cost of repairs per mile of road.
.....	.....	.....	.....	.....	Bales of cotton.

Illinois Central Railroad.

The article, under the caption of "Illinois Central Railroad Movements"—copied from the *Chicago Journal* into one of our late numbers—contained an error in the names of the resident engineers, which it may be proper to correct. C. Floyd Jones, Esq., the late resident engineer on the Alton and Sangamon railroad, is to take charge of the second division north of Cairo, and not Mr. Galloway, as stated in the *Journal*. Mr. Jones is a gentleman of great skill and experience in his profession; and we are gratified to learn that the Central railroad company are to enjoy the benefit of his valuable services. We understand that he expects to leave this city, for his field of labor, early in the ensuing week; and hope health and success will attend him. The *State Register* of Tuesday, gives the following additional information on the subject of the Central railroad surveys, which, we believe, is substantially correct:—

Mr. Mason, Chief Engineer of the Central railroad, arrived in this city on Tuesday night. Several engineers are also here, awaiting orders to leave for their respective sections. They will probably leave to-morrow. A few left yesterday, notwithstanding the heavy rain storm. We gave in a former number a few particulars in relation to the engineers of the different sections. The following, we are informed, is the present organization:—

The division from Cairo to the base line, or its vicinity, is to be under the charge of A. T. Ormsbee, Resident Engineer. North of Ormsbee's and south of Plank's Division is under the charge of C. Floyd Jones, Resident Engineer. A. J. Galloway, formerly Assistant Engineer on the Illinois Canal, will also be engaged on this division. The division from the Kankakee river to the junction with the main trunk, will be under the charge of L. W. Ashley, Assistant Engineer. From Bloomington to the neighborhood of Decatur, is under Mr. Plank's superintendence.

The Galena Branch, north of Blackstone's division, to Dubuque, will be under the direction of B. B. Provost, Resident Engineer.—*Alton Register*

Louisiana.

Railroad from New Orleans to Opelousas.—A convention of the friends of the above project was held at New Orleans on the 5th instant, to concert measures for the accomplishment of this enterprise. It was very numerous attended by delegates from the parishes of Orleans, Jefferson, Lafayette, St. Landry, Lafourche, St. Mary, St. Charles, Ascension and Terrebonne. The convention was organized by the choice of the following persons as officers:—

MAUNSEL WHITE, President.

VICE PRESIDENTS.

Judge Overton, St. Landry.
General DeClouet, St. Martin.
Governor Mouton, Lafayette.
O. Cornay, St. Mary.
J. F. Tucker, Lafourche.
W. J. Minor, Terrebonne.
Dr. Kittridge, Assumption.
Duncan F. Kenner, Ascension.
Ambrose Lanfear, St. Charles.
A. D. Crossman, First Municipality.
L. Matthews, Second Municipality.
Emile Lesseps, Third Municipality.
A. Boutie, Gretna.
A. B. Seger, Algiers.
H. E. Lawrence, Lafayette City.
G. Leroy, Jefferson Parish.

SECRETARIES.

John E. King, St. Landry.
Robert Taylor, Lafayette.
Dr. Hawkins, St. Mary.
John Burns, Orleans.
Fredk. L. Gates, St. Martin.

A series of resolutions were submitted by Mr. Cohen, and adopted, declaring that a railroad from New Orleans to Opelousas should be built; appointing a permanent committee to obtain surveys of the route, and estimates of the cost of the work; to obtain such legislation as may be required in the premises; to frame an act of incorporation, and to call upon the city and the police juries of the country parishes to pay their respective quotas of the preliminary expenses, and providing that the stockholders, when the company is organized, shall fix the route.

The following gentlemen were selected to constitute the committee under Mr. Cohen's resolutions, viz:—

First Municipality.—M. O. H. Norton, J. B. Bellocque.
Second Municipality.—M. M. Cohen, J. W. Stanton.
Third Municipality.—Buckner H. Payne, Alex. Lesseps.
Algiers.—R. F. Nichols, L. Bernard.
Gretna.—S. Bennett.
Jefferson.—Benj. Buisson, Prof. C. Forshey.
St. Charles.—Ambrose Lanfear, Judge Labranche

Ascension.—Duncan F. Kenner, John Thibaut.
Lafayette.—A. Mouton, Joachim Revillon.
St. Landry.—E. H. Martin, T. C. Anderson.
St. Martin.—Alex. Declouet, Jno. Moore.
St. Mary.—Francis D. Richardson, John B. Murphy.

Terrebonne.—J. C. Potts, James J. Hanna.
Lafourche.—Geo. S. Guion, R. Collins.
Assumption.—Geo. Schwing, H. A. W. Roberts.
Lafayette City.—H. E. Lawrence, A. S. Phelps.

A committee was also appointed for the purpose of drawing up an address to the people of the south west; to disseminate among the neighboring states the views of the people of New Orleans on the subject, and to convene a general railroad convention from those states to meet in that city on the second Monday in January next, so that by an interchange of ideas, a union of means and energy, to be concentrated upon a system of railroads, may be obtained.

The convention was composed of the most influential men in the state. The best feeling prevailed, and a firm determination was manifested to commence and complete the road at the earliest day.

The road is estimated to cost \$1,600,000, one half of which is to be borne by New Orleans, and one half by the Parishes on the route. In relation to the route, and the business prospects of the road, we copy the following from the New Orleans Commercial Bulletin:—

The route proposed by the convention commences at Algiers, and terminates at Washington, in the parish of St. Landry, 6 miles beyond Opelousas. The road will be one hundred and sixty-six miles in length, and will pass through, or in the vicinity of Pattersonville, Centerville, Franklin, New Iberia, St. Martinsville, Vermillionville, Grand Coteau and Opelousas; the parishes immediately interested in the road are, St. Landry, Calcasieu, Lafayette, Vermillion, St. Martin, and St. Mary's, and ourselves.

Of the practicability of the route there can be no doubt—the whole of the country is represented to be extremely favorable—its healthiness from experience, is proved to be unexceptionable, and its fertility equal to the best lands in Louisiana. Mr. Payne, the able and zealous champion of the enterprise, remarks, and he knows the country from personal exploration, that if unsurpassed health and fertility of soil be any elements on which to feed a railroad to fulness, and to which add its equally unsurpassed loveliness, with so great a commercial Mart as New Orleans for its terminus, then of all countries or sections, this presents considerations to capitalists, no where else equalled on this continent for safe investment of money.

There are no physical obstructions on the line of the projected route, which may not be easily overcome. What bays or bayous intervene may without difficulty be bridged or cause-wayed; but little grading or filling up will be required, and upon the whole, there are as few if not fewer obstacles to overcome, than upon any other road of equal extent in the Union. The cost of making the road, including equipments, etc., is estimated at ten thousand dollars a mile.

So much for the practicability of the road. Of its value and productiveness there cannot be a shade of doubt; for it runs through one of the richest sugar, cotton and grazing countries to be found anywhere. We have no time to copy the tabular statements that have been prepared with great care by Mr. Payne, which show conclusively the immense advantage that will accrue to the section of country through which this road is to run, comprising 23,000 square miles of the finest lands in the world, not one-fifth of which are now in cultivation for the want of an outlet. We will simply take the article of sugar, and predicate our estimates, not upon what the country is capable of producing, but assuming for our data the crop of last year, which every one will admit was a bad sugar year.

The sugar that was produced last year in the section of country through which this road is proposed to pass, amounted to 110,800 hogsheads, be-

sides 193,906 barrels of molasses. We will not now take into account the 33,000 bales of cotton produced in the upper parishes, and the 40,000 head of beef cattle, calves, and sheep, brought from the same region to the New Orleans market.

Reducing the cost of transportation on the railroad, of the sugar and molasses before mentioned, to one-half of the present cost, and including return freight and passage money, we make an estimate of gross receipts amounting to \$439,000, from which deducting for maintenance of the road 40 per cent. or \$165,640, a net income is left of \$273,460, or 17 per cent. on the cost of the road.

As the proposed route, as far as it goes, is on the direct route to Texas, the people of New Orleans confidently count upon its future extension to that state, and regard it as the commencement of a road which will ultimately be extended to the Pacific.

Canada.

Great Western Railroad.—Messrs. Erastus Corning, J. M. Forbes, and others, have issued a report upon the Great Western railroad in Canada West. The design is to build a nearly straight road through Canada West, connecting Detroit with Niagara River, and thus giving to New York and Boston a continuous and direct railroad communication with the west, by means of our Western railroad, and Hudson River road, over the Central line of New York. The amount asked of American capital is but \$1,000,000. The rest will be furnished by individuals in Canada, and by the Provincial Government. The estimated cost is but \$5,000,000, and already from 2,500 to 3,000 men are at work upon the track. The calculation is that the necessary means will be raised as follows:

Municipal subscriptions in Canada....	\$550,000
Reliable private subscriptions in Canada	240,000
Additional subscriptions in Canada can be	
safely calculated upon to the amount of	60,000
Contractors' stock about	800,000

	\$1,650,000
American subscriptions desired to complete the work	1,000,000
Total stock	2,650,000
Provincial 6 per cent. guarantee bonds.	2,650,000

Total means if the \$1,000,000 American stock is taken

	\$6,300,000
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The capital authorised by law is \$6,000,000.

Ohio.

Scioto and Hocking Valley Railroad Company.—At a meeting of the stockholders of the Scioto and Hocking Valley railroad company, on Thursday last, it was decided to have the route through Vinton and Hocking counties to Lancaster, surveyed as soon as possible without detriment to the work now going forward. The law of last winter in relation to the Jackson county subscription, was rejected, the stockholders at the same time expressing their willingness for an amicable arrangement with the Iron railroad company. The remainder of the road as far as Jackson, (54 miles,) has been put under contract.

Pennsylvania.

Railroad from Philadelphia to Lake Erie.—The Sunbury American takes a correspondent of the Ledger to task for inaccuracies in an article on the best and shortest railroad route between Philadelphia and the Lakes. Two routes are mentioned by which Williamsport can be reached from Philadelphia, viz.: one by way of Harrisburg and Sunbury, and the other by way of Schuylkill valley and Cattawissa, to the latter of which the correspondent of the Ledger gives a decided preference, on account of the difference in distance and the tax on freight that the Susquehanna route will be subjected to. In regard to distance, the editor of the American suggests a third route, viz., the Danville and Pottsville railroad, which appears to him more feasible, and superior in every respect, to that which preference is given in the Ledger. Of this road, 20 miles from Sunbury to Shamokin, have been in use for years. At this end 12 miles of the road are also finished. This leaves but 14 miles of road to be made to connect the Susquehanna and Schuylkill. By this route the distance

from Philadelphia to Williamsport is 180 miles, 10 miles shorter than the Cattawissa road. But the American thinks that grade as well as distance should be considered in the location of a road, and therefore regards the Harrisburg and Susquehanna route as infinitely superior to the Cattawissa—the grade between Williamsport and Harrisburg in no place exceeding 4 feet to the mile, while the maximum grade on the Cattawissa route is 66 feet.

Hempfield Line.

On Friday, June 13th, Charles Ellet, Jr., Esq., Chief Engineer, and hon. T. M. T. McKennan, the President of the Hempfield line, left Washington, Pennsylvania, to reconnoitre their route; it is their intention to double man the route at once with proper corps of engineers, and complete the business immediately, in order that the merits of this important link in the railway system, between the seaboard and the Mississippi Valley, may be fully and promptly developed.

The recent resolution of the Cincinnati and Bel-pre company, to make Marietta a point, and abandon their connexion with Baltimore, is likely to turn the trade of Southern Ohio into the lap of Philadelphia, through the Hempfield line, which promises at present, to be the trunk line for several important branches in Ohio.

Kentucky.

Covington and Lexington Railroad.—The grading and bridging of this road is now under contract all the way from Covington to Paris, in Bourbon County.

Ohio.

Eaton and Hamilton Railroad.—We learn that a contract has been negotiated by this company, for iron to lay the track from Hamilton to Richmond. The contract is said to be very favorable for the company, and the iron will be ready for shipment immediately.

We are authorized to say, by the President of the company, that if the energy of the board is responded to by the stockholders, in the prompt discharge of their instalments of stock, no ordinary event will prevent the cars from running to this place during the ensuing winter.—*Eaton Register.*

Toledo, Norwalk, and Cleveland Railroad.

A letting on this work between Fremont and Norwalk is advertised. The line is also open for private contracts from Norwalk to the Grafton Station of the C. C. & C. road.

Michigan Southern Railroad.

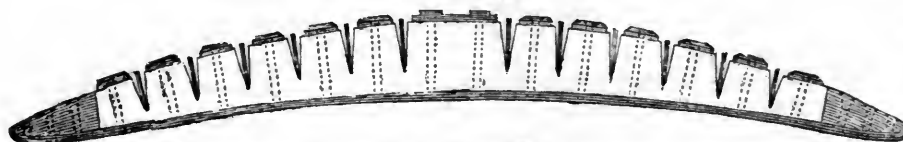
This road is to be extended to Chicago within the year, if possible. The company are re-laying the track between Adrian and Hillsdale, and will soon commence east of Adrian. The extension of the road will be opened to White Pigeon by the 4th of July, and to Constantinople soon after. The iron is arriving at St. Joseph for the Northern Indiana road, which is a continuation of the Michigan southern. From the state line to the South Bend, twenty-five miles, the iron will soon be put down, and it is the design of the company to push the work to Chicago by the 1st January, 1852.

Morris Canal.

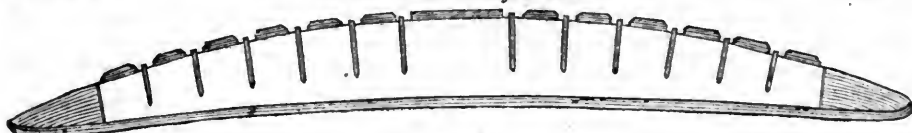
The Newark Daily Advertiser says—The Morris canal is now in good working order throughout the whole line and full of business. The recent improvements have greatly enlarged its capacity, affording increased facilities for the rapid and systematic transportation of freight: being now able to do double the business it formerly did. Boats can pass over the planes in five minutes with 60 tons cargo, whereas, before, it required half an hour to pass one with 50 tons. We understand also that coal loaded boats from Mauch Chunk may be expected to arrive here in the course of to-day, being the first through that channel the present season.

PATENT EXCELSIOR SPRING for Railroad Cars, Locomotives, etc.

No. 1.—At Rest.



No. 2.—Under Heavy Pressure.



No. 3.



THESE Springs are composed of a Plate of Steel with Oak or Ash Wood, firmly riveted thereto, having saw kerfs in which are inserted flat plates of metal. The Spring is very powerful and yet sensitive. They are now being manufactured and sold by the Excelsior Spring Company, under a Patent granted on 20th May, 1851.

The above Drawing, No. 1, represents a side view of the Spring when it is at rest. No. 2, shows the same when under heavy pressure. No. 3, represents a Spring having only two plates instead of the usual number inserted in the wood.

This is undoubtedly the best Spring of the day—it is very simple—easy of application—light—cannot get out of order—and it is without any exception the most adjustable spring now made—for it will spring fifty

or five thousand pounds with the same ease.

The cost of the springs is very much less than that of any other.

The Excelsior Spring Co., determined that every spring shall be of the best quality, have established a Factory, where each spring is made directly under the eye of Mr. Bissell, the inventor—and before a spring is allowed to leave the factory it is subjected to a much severer test than it ever can be when at work. Each Spring is guaranteed to perform the required work.

Any person infringing on this patent will be prosecuted.

Office of EXCELSIOR SPRING COMPANY.
33 Broadway, New York.

June 7, 1851.

Ohio and Mississippi Railroad Company.

The annual election of the directors and officers of this company took place on Monday and Tuesday last, in this city. The directors are as follows:

Abner T. Ellis, Samuel Judah, Wm. Burtch and W. F. Hebert, of Vincennes, Indiana.

John Cobb, Geo. W. Lane, and Thos. Gaff, of Aurora, Indiana.

Elias Conwall, of Riley county, Indiana.

E. B. Reeder, J. A. James, James C. Hall, A. Taft, John Baker, C. W. West, Geo. W. Cochran, J. Slevin, C. Stetson, D. F. Goodhue, E. M. Gregory, Nat. Wright, and John S. G. Burt, of Cincinnati, Ohio.

The directors made choice of the following officers for the ensuing year:—

President—Abner T. Ellis, Esq.

Secretary—H. H. Goodman.

Treasurer pro-tem—H. H. Goodman.—*Cincinnati Chronicle*.

Indiana.

The Shelbyville, Rushville and Knightstown railroad companies, have contracted with the Madison company to find the cars, locomotives, &c., and to run their road for five years.

Virginia.

Orange and Alexandria Railroads.—The Alexandria Gazette says:—The stockholders on Friday, in general meeting, passed a resolution for the construction of the Warrenton branch, and gave the directors the power to borrow \$360,000, the amount required for the completion of the middle section.

Peoria and Mississippi Railroad.

The total amount of stock subscribed in the above improvement—which is designed to connect the flourishing cities of Peoria and Burlington—up to the latest dates, was \$314,000; being much more than the charter requires for the organization of the company. We learn that the individual subscriptions are divided as follows: Peoria, \$30,000; Farmington, \$25,000; Knoxville, \$18,000; Monmouth, \$1,500; Burlington, \$40,000. The cities of Peoria and Burlington, and the county of Warren,

have taken in their corporate capacities \$200,000 additional, making \$314,000 in all.

Indiana.

Railroad from Cincinnati to Chicago.—A convention, numerous attended by the citizens of Indiana, and by persons connected with the various railroad companies interested in the above line, was held at Newcastle, Indiana, on the 6th instant, to take measures to secure a continuous railroad between the above cities. Hon. John Woods, of Hamilton, presided. Delegates were in attendance from Logansport, Rochester, New London, Kokomo, Middletown; counties of Hamilton, Madison and Delaware; and the Eaton and Hamilton, the Cincinnati, Hamilton and Dayton, the Richmond, and Miami and the Four Mile railroads.

The convention was addressed by the President, and by Judge Elliot, President of the Newcastle and Richmond railroad; W. A. Bickle, President of the Richmond and Miami railroad company; Williamson Wright, President of the Lake Michigan, Logansport and Ohio River railroad; Abner Haines, President of the Eaton and Hamilton railroad; Wm. Garver, of Noblesville; and N. C. McCulloch, of Oxford, Ohio; and resolutions adopted, providing for preliminary surveys, under the direction of the New Castle and Richmond company, of several routes, viz: 1st. A direct line from New Castle to Logansport. 2d. From New Castle to Logansport by way of Pendleton and Tipton. 3d. From New Castle to Logansport by way of Andersonstown and Kokomo. 4th. From New Castle to Logansport via Pendleton, Noblesville and New London. 5th. From New Castle via Pendleton and Noblesville to Lebanon, in Boone county; with the ulterior idea of connecting Cincinnati with Chicago, by Hamilton, Eaton, Richmond, New Castle and Logansport; and further, that the company at Logansport be requested to

examine the northern division of said line beyond Logansport, so that comparative estimates as to its alignment and grades may be had for the benefit of all concerned preparatory to the final location of said road, making the final connections aforesaid. A committee was also appointed to procure subscriptions to the stock of the company, and obtain releases of right of way, etc., etc. The best spirit prevailed at the meeting, and the utmost confidence was expressed in the ability of those interested in the line, to complete the road at an early day.

The construction of a railroad from Cincinnati to New Castle is provided for by companies already organized. A short link from New Castle, would carry the line to the Peru railroad at Noblesville. The Peru road is in progress, and will be completed in less than two years. By the adoption of this road as a part of the line to Chicago, the extent of line to be built, the construction of which is not already secured, would be reduced to that between New Castle and Noblesville, and Peru and Chicago. The above would form a very direct route, and its construction could be easily accomplished by the parties interested. It would serve every purpose of a straight road, and could be made at one half the cost of a direct line from New Castle. As our western friends have no money to spare upon parallel lines, or those not absolutely necessary, are not the above suggestions worthy of attention?

European and North American Railway.

PORTLAND, June, 12, 1851.

At a meeting of the Executive Committee of the European and North American Railway, held at Portland, this day—

Present, JOHN A. POOR, } of Maine.
ELIZABETH L. HAMLIN, }
ANSON G. CHANDLER, }
R. JARDINE, } of New
Geo. Botsford, } Brunswick.
R. B. DICKEY, } of Nova Scotia.

Among other matters acted upon, it was unanimously

“Resolved, That the executive committee of the European and North American railway, have examined with great satisfaction the very able report of A. C. Morton, Esq., upon the European and North American railway, submitted to the Governor of Maine; that all our previous hopes and expectations, as to the feasibility of the undertaking, are fully confirmed thereby; the practicability and the paying qualities of the line from the city of Bangor, in Maine, to the Atlantic shore of Nova Scotia, are therein fairly established, and that we commend this report, and the enterprise itself, to the people of the country through which it is to pass, and to all who favor the plan for shortening the transit between Europe and America.”

“Resolved, That as the Legislatures of the State of Maine and of the Province of New Brunswick, have granted concurrent charters, incorporating the European and North American railway from the city of Bangor to the line of Nova Scotia—and the Province of New Brunswick has granted facility bills in aid of the same, the unanimous opinion of this committee is that books of subscription to the stock be forthwith opened, and the companies organized in Maine and New Brunswick, and the work of construction actively commenced on completion of the required subscriptions—not doubting that the Province of Nova Scotia will in some manner most agreeable to itself complete its portion of the work as soon as the other parts of the line are finished, so as to form a continuous line of railway from the cities of Boston and New York to the Atlantic shore of Nova Scotia.”

“Resolved, That the decision of the Portland Convention, as to the practicability and advantages of the European and North American railway, has been abundantly confirmed by the expressed opinion of various public bodies, and the press generally, in both Europe and America. That this

decision has been most signally enforced, by the recent action of the British ministry in favor of the Halifax and Quebec line, through the agency of which it is proposed to build that portion of the European and North American railway which is situated in Nova Scotia; and while we express no opinion as to the feasibility of Earl Grey's scheme, as stated by Mr. Howe. it is not claiming too much for the friends of our scheme to say, that, it is to their exertions and to the superior claims which the European and North American railway has, upon the attention of the commercial world, that the action of the British government is to be traced; and we may confidently assert that, if the Halifax and Quebec line presents advantages to the business of this continent, to justify its construction on any terms, the European and North American railway presents such infinitely higher claims to public favor, as to justify us in expecting its early completion."

Voted, That the foregoing extracts from the records of the proceedings of the committee, be certified by the Chairman and Secretary, and published in the newspapers of the United States and the Provinces.

JOHN A. POOR,
Chairman.

R. B. DICKEY, Secretary.

It seems from the action of the above committee that the Province of New Brunswick is disposed to stand by the European and North American railroad, and not to become a party to the Halifax and Quebec railroad. The reason assigned for this, is the fact, that the latter would involve the building a road by that Province three or four hundred miles long, on a route which would accommodate but a small part of her people, while the former is both the line of convenience and economy. She is governed in her decision by considerations of pecuniary profit, uninfluenced by those arising from political objects. On the other hand, Mr. Howe, the Provincial Secretary, is now at Toronto, for the purpose of conferring with the Canadian Government in reference to the Halifax road. The public look with much interest for the result of this conference. The two projects of which we have spoken, are the great topics of public interest in the Lower Provinces, and the result must be the construction of one or both of them. This is inevitable. The agitation of the questions growing out of these projects, is the commencement of a new era with the colonies, and may be followed by results widely different from those now anticipated.

For the Railroad Journal.

The Schenectady and Catskill Railroad.

The Schenectady and Catskill railroad must soon be made, and it will then be quite apparent, that an important cut off had remained long unnoticed. There may be a good railroad made here, in the distance of 41 miles, with an extreme grade of 26 feet to the mile. This would afford the central line the best possible connexion with the boats; it would also be just as good a connexion with the Hudson river railroad, as at Albany, and a saving of 12 or 13 miles. When the competition shall become active between the central line and the Erie road, when the stockholders of the Utica and Schenectady road shall see their true connection, and when the Hudson River and the Harlem roads shall also be competing to Albany, then the Catskill and Schenectady route will come into demand. Where is there an unoccupied route in the state that compares with this? If it is an object to shorten and to expedite routes, then the value of this work is manifest, of course, it will relieve from all the questions between Albany and Troy. They would be left to their legitimate business, which would all be right. This would be the route to Saratoga as well as to the west. It is therefore quite

fair to believe that there will soon be a railroad from Schenectady to Catskill, and its value is less problematical than many works that may be effected by it.

Catskill, June 10th, 1851.

To Contractors.

PROPOSALS are invited for laying the superstructure on the first 38 miles of the Manassas Gap Railroad, up to Farrowville;—the work to be commenced in August next. Plans and specifications may be seen at the office in Alexandria, after the 28th inst. Bids will be received up to the 5th of July

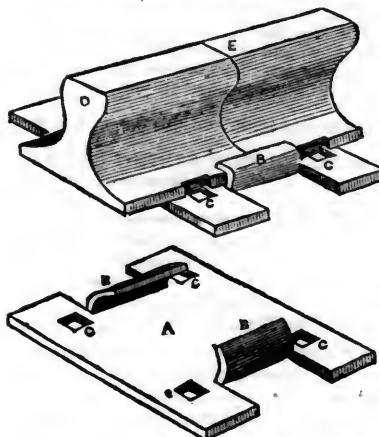
ENGINEER'S OFFICE, ALEXANDRIA.

Superintendent of a Railroad.

THE Post of Superintendent of a Railroad is wanted by a middle aged man, who can give satisfactory evidence of his capacity, integrity and qualifications for such a situation. Letters addressed to A.B., care of the Editor of the Railroad Journal, New York, (to whom the above would refer), will receive immediate attention.

New York, June 11, 1851.

The American Railroad Chair Manufacturing Co.



ARE prepared to make WROUGHT IRON RAIL ROAD CHAIRS, of various sizes, at short notice.

By use of the WROUGHT IRON CHAIR, the necessity of the wedge is entirely done away—the lips of the chair being set, by means of a sledge or hammer, close and firmly to the flange of the rail.

The less thickness of metal necessary in the Wrought Iron Chair gives much greater power and force to the spikes when driven—and consequently a much less liability to the spreading of the rails by reason of the spikes drawing or becoming bent.

The less weight necessary in the Wrought Iron Chair, will enable us to furnish them at a cost much below that of CAST IRON CHAIRS.

DESCRIPTION OF THE ABOVE CUTS.

Figure 1 is a perspective view of the rail secured in the chair, and fig. 2 is a perspective view of the chair itself. D, E, are sections of two rails placed together, and secured at the joint on the chair by the jaws B, B. The chair is bolted down by spikes C, C. In fig. 2, the chair is represented as made of a single block or plate A of wrought iron.

The chair is set in its proper place on the track, spiked down, and the ends of the two rails brought together within the jaws as represented in fig. 1.

For further information address,

N. C. TROWBRIDGE, Secretary,
Poughkeepsie, N. Y.

June 1, 1851.

Railway Iron.

3000 TONS, 50, 57, and 60 lb. Rails, made of best English Iron and under particular specifications.

Also;

Rails imported on commission or at a fixed price, delivered at a port in England, or at any port in the United States. Apply to

DAVIS, BROOKS & CO.,

June 5, 1851.

28 Beaver st., New York.

TO CONTRACTORS.

Engineer's Office, S. S. R. Road Co.
Petersburg, Va., May 27, 1851.

PROPOSALS will be received at the Engineer's office, South Side Railroad, at Petersburg, Va., until the 31st of July next, for the construction of Appomattox Bridge, to be erected near Farmville.

The Bridge will be about 3000 feet long and 80 feet high; to consist of a wooden superstructure resting on abutments and piers.

The piers will be of brick or stone, to be determined after receiving the proposals.

Good brick earth can be obtained near the site of the Bridge.

The proposals may be made for the structure complete, or for the various items of work and materials, viz.: Masonry, furnishing Bricks or Timber; workmanship of laying Bricks and workmanship of superstructure.

Security will be required for the fulfillments of the contracts, and it will be necessary that each proposal be accompanied with a letter from a responsible person or persons, stating that they will become security.

C. O. SANFORD,
Ch. Engineer, S. Side R. Road.

To Contractors.

OFFICE PACIFIC RAILROAD CO.,
St. Louis, Mo., May 16, 1851.

THE Graduation, Masonry, and the Laying of the Superstructure of the first Division of the Pacific Railroad, comprising about 45 miles from the city of St. Louis, westward, will be ready for contract on the 20th of June next.

Proposals will be received at the Engineer's Office, St. Louis, from the 20th to the 30th of June, where plans and specifications will be shown. The line will be ready for inspection on and after the 20th of June.

The line will be divided into sections of about one mile each, but offerers can include as many of them in one bid as may suit their convenience.

The company will not bind itself to accept the lowest offer, unless in all other respects satisfactory, but reserves the power to dispose of the work in such manner as may appear most advantageous to the interests of the company.

The Division will embrace about one million three hundred thousand (1,300,000) cubic yards of graduation, and about thirty three thousand (33,000) cubic yards of masonry.

THOMAS ALLEN, President.
JAMES. P. KIRKWOOD, Chief Engineer.

Notice to Contractors.

Columbus, Piqua and Indiana Railroad.

SEALED PROPOSALS will be received at the Engineer's Office of the Columbus, Piqua and Indiana Railroad Company, at Urbana, on the 8th day of July, 1851, for the Grubbing, Grading and Masonry of that portion of the line extending from St. Paris, in Champaign county, to Columbus, a distance of fifty-six miles. Plans and specifications of the work may be seen from the 1st to the 8th of July, at the office. The Directors reserve the right to retain bids for twenty days after the 8th, before declaring the work.

The names in full of all the parties should be given in the proposals.

A. G. CONOVER, Engineer.
Piqua, May 20, 1851. 3c22

Spikes, Spikes, Spikes.

ANY person wishing a simple and effective Spike Machine, or a number of them, may be supplied by addressing J. W. FLACK, Troy, N. Y. or, MOORE HARDAWAY, Richmond, Va. March 6. 1850.

Railroad Iron.

THE "Montour Iron Company" is prepared to execute orders for Rails of the usual patterns and weights, and of any required length not exceeding 30 feet per rail. Apply to

THOS. CHAMBERS, President,
66 Broadway, N. Y.,

Or to the Agents,
CHOUTEAU, MERLE & SANFORD,
No. 51 New st., New York.

September, 1850.

To Engineers and Ship Builders.

THE Advertiser is desirous of a situation in a respectable concern, he has acquired a practical knowledge of his business in the establishment of R. Napier, Esq., Glasgow, has since for several years had the management of the Works of an extensive Steam Packet Co., for whom he designed and built some Iron Screw Ships, whose capabilities and performances give the highest satisfaction. While acquainted with all the most approved modes of construction of marine engines, he is prepared to submit original designs.—In modelling and draughting he has had much and successful experience. Can produce the highest testimonials as to character and abilities from the first engineer on the Clyde.

Address ENGINEER, box 2315 lower Postoffice.

Lovegrove's Patent Cast Iron Water and Gas Pipes.

THE Subscriber, the Inventor and Patentee of the Centrifugal mode of giving form to metallic substances while in a molten state, is preparing to make Cast Iron Water and Gas Pipes, of any dimensions, at prices much lower than they can be made in the old manner, and the pipes warranted to stand a pressure of three hundred pounds to the square inch, and to be soft enough to drill. Steam Engines and all kinds of machinery. Cast Iron Doors and Frames, and Mill Castings of every description, made to order.

THOMAS J. LOVEGROVE,

Machinist and Founder,

West Falls Avenue, below Pratt st., Baltimore.

To Railroad Companies, etc.



The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

I also invite attention to an improved PATENT SPRING LOCK, for SLIDING Doors to Freight and Baggage Cars, now in use upon the Pennsylvania Central, Greenville and Columbia, S.C., Reading, Pa., and other Railroads.

Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to C. LIEBRICH,

46 South 8th St. Philadelphia.

May 9, 1851.

SUPERIOR BLACK WRITING & COPYING INK.

Jones' Empire Ink.

87 Nassau st., Sun Building, New York city.

Net prices to the trade—

Quarts, per dozen,	\$1 50	6 oz. per dozen,	\$0 50
Pints, " "	1 00	4 " " "	0 37½
8 ounces, " "	0 62½	2 " " "	0 25

On draught per Gallon, 20 cents.

This is the best Ink manufactured. It flows freely, is a good copying ink, and will not mould, corrode, precipitate or decay. Orders for export, or home consumption, carefully and promptly attended to by
21st THEODORE LENT.

Railroad Iron.

THE Subscribers, Agents for the Manufacturers, are prepared to contract for the delivery of Railroad Iron at any port in the United States or Canada, or at a shipping port in Wales.

WAINWRIGHT & TAPPAN,
29 Central Wharf.

Boston, June 1, 1851.

To Railroad Companies. SALISBURY REFINED IRON.

THE Undersigned, having enlarged and perfected his Works, is now prepared to furnish Locomotive Tires of a better quality than have heretofore been used. Railroad Companies who may wish it, will be furnished with a set for trial, not to be paid for until they are satisfied of their superior quality over any other. Also, made at short notice, and in the best manner, Locomotive Cranks, Engine and Car Axles, and other Locomotive Forgings.

All work ordered from me will be made of Salisbury Iron, and done in the best manner.

Address HORATIO AMES,
Falls Village, Conn.

May 1, 1851.

LOWMOOR

AND

U. S. BEST FINCH IRON. To Iron Merchants.

JOHN FINCH & SONS, Iron Merchants, Liverpool, now are, and for more than twenty years past have been, sole Agents for the LOWMOOR IRON COMPANY, for the United States and Canada, for the sale of their well known Railway Tire Bars, and Axles, Piston Rods, Boiler Plates, Angle, Rivet, and all other kinds of Lowmoor Iron: also, sole Agents for the sale of the superior Staffordshire Iron stamped "FINCH CROWN" and "U. S. BEST FINCH," and Merchants and Wholesale Dealers in all other kinds of British Iron.

We hereby inform our friends and the public that we have this day appointed Mr. WM. BAILEY LANG, of Boston, as our only representative to receive orders and to transact our general business in the United States.

For JOHN FINCH & SONS.,
JOHN FINCH Sen.

Boston, April 11, 1851.

LOWMOOR and other Bent, Welded and Blocked RAILWAY TIRES, ready for use, E. FINCH'S Patent Dovetailed and other kinds of WROUGHT IRON RAILWAY WHEELS, with, or without the finished Axles, for Locomotives and for Passenger and Merchandise Cars, also Wrought Iron Railway Chairs, Railway Spikes, etc.

To the Managers of Railways, Engineers and others: Gentlemen.—We, FINCH & WILLEY, Engineers, Liverpool, Manufacturers of the above articles, respectfully inform you that we have this day appointed Mr. WM. BAILEY LANG, of Boston, as our sole Agent for the sale of said articles, and the transaction of our business in the United States of America, and for whom we solicit your kind attention and patronage.

For FINCH & WILLEY,
JOHN FINCH, Sen.

Boston, April 11, 1851.

Having accepted the above Agencies, I beg leave to solicit your orders, which shall at all times receive my prompt and careful attention. Please address all communications either to MESSRS. JOHN FINCH & SONS or MESSRS. FINCH & WILLEY, Liverpool; or to me, at my Steel Warehouse, No. 9 Liberty Square, Boston. Yours very respectfully,

WM. BAILEY LANG.

Boston, April 11, 1851.

The following are testimonials of the quality of FINCH & WILLEY'S WROUGHT IRON RAILWAY WHEELS from the Yorkshire and Lancashire Railway Co., one of the largest in Great Britain, and from the London and North Western Railway Co., the largest Railway Company in the world.

LONDON AND NORTH WESTERN RAILWAY,
(Northern Division),
WAGON DEPARTMENT, ODSALL LANE,
Manchester, January 4, 1851.

Gentlemen:—I have very great pleasure in bearing my testimony to the excellent quality of your Wrought Iron Railway Wheels.

This Company have many of them now in use on their lines, and during my experience, as their Superintendent, which is now upwards of 9 years standing, I have not known any of them to fail during that time.

I am, Gentlemen, yours, truly,

OWEN OWENS.

MESSRS. FINCH & WILLEY,
Windsor Foundry.

LANCASHIRE AND YORKSHIRE RAILWAY,
Wagon Department, Jan. 3, 1851.

Messrs. Finch & Willey,

Gentlemen: In reply to your request writing me to give my opinion of the 700 sets of Wrought Iron Wheels you furnished this company during the years 1847 and 1848, I have much pleasure in stating that we have not had a single instance of your Wheels failing in any respect, and I consider them equal if not superior to any Wheels we have on this line of railway. The Tires being LOWMOOR iron, 1½ inch thick, I have no doubt they will run under ordinary goods' wagons 12 years without any repairs more than the tires turning up.

I am Gentlemen,

Yours, truly, WM. EMMETT.

NOTE.—4 Wheels and 2 Axles are one set, consequently this order contained 200 WHEELS and 1400 AXLES; value over \$100,000.

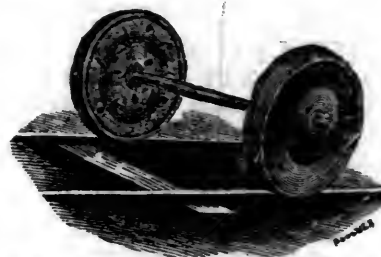
Boston Locomotive Works,

—Late Hinkley & Drury—

No. 380 Harrison Avenue,
BOSTON.

Locomotive and Stationary Steam Engines; Boilers; Iron, Brass, Copper and Composition Castings; Coppersmith's Work, and all kinds of Railroad Machinery furnished at short notice.

ALSO



Van Kuran's Improved Railroad Wheel,

Patented May 1, 1849. Manufactured under the personal superintendence of the Patentee, as above.

Orders for any quantity of wheels executed with dispatch, and wheels and axles fitted in the very best manner and at the lowest rates. Address

DANIEL F. CHILD, Treasurer, Boston.



Providence Tool Co.,

MANUFACTURERS OF

Plane Irons, Tooth Irons, Soft Moulding and Rabbet Irons, Cornice Irons, Plow Bits, and Planing Machine Knives:

NUTS, WASHERS AND BOLTS.

—ALSO—

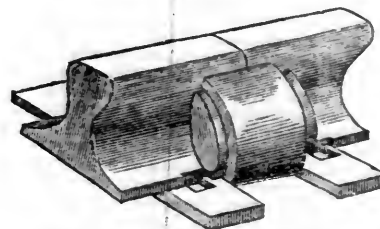
PLATE HINGES AND PICK AXES.

They are prepared to execute orders for all descriptions of Cold Punching and Job Work.

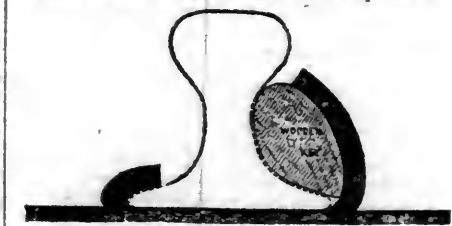
WM. FIELD, Agent. RUFUS WATERMAN, Treas.
PROVIDENCE, R. I.

Railroad Iron, SPIKES, AND

WROUGHT IRON CHAIRS.



THE Undersigned, Agent for Manufacturers, is authorized to contract for Welsh Railroad Iron of the best quality, and deliverable at any port on favorable terms, also Spikes and Wrought Iron Chairs, made from the best iron, and of any pattern and weight. The new Wrought Iron Chair, with the introduction of a "Key," as per the annexed plan, will be found a great improvement on the old pattern.



Boiler Plates of superior quality, perfect regularity in the squaring and thickness, and made with great care.

Samples can be seen at our office, No. 20 Beaver St.
CHARLES ILLIUS

RAILROAD CAR MANUFACTORY
TRACY & FALES,
GROVE WORKS, HARTFORD, CONN.
 Passage, Freight and all descriptions of
RAILROAD CARS,
 AS WELL AS
LOCOMOTIVE TENDERS,
 Made to order promptly.

The above is the Largest Car Factory in the Union. In quality of Material, and in Workmanship, Beauty and Good Taste, as well as Strength and Durability, we are determined our work shall be unsurpassed.

JOHN R. TRACY. THOS. J. FALES.

CHILLED TIRES FOR
LOCOMOTIVE ENGINES.
To Railroad Companies.

THE Undersigned, Assignee of Letters Patent, respectfully invites the attention of Railroad Companies to the CHILLED TIRES for LOCOMOTIVE ENGINES, which he offers for sale.

These Tires were first introduced by Messrs. Perkins & McMahon, upon the Baltimore and Ohio Railroad, in 1843, where, after a long and severe trial, they were generally adopted, on both passenger and freight engines, and now have entirely superseded Wrought Tires on that road, on which are many engines of the heaviest class, which ascend grades of *eighty-five feet per mile*, taking with them *one hundred and twelve tons*, exclusive of cars. This performance shows in some measure the adhesive character and strength of the Tire.

During a service of seven years, these Tires have very much exceeded in durability those of wrought iron, while their first cost, and expense of repairs, is more than *fifty per cent. less*. They also retain more equally their diameter and proper form of tread, which is a point of much value in engines with coupled wheels.

It is believed these Tires are peculiarly well adapted to freight engines, as the objection to coupling the wheels of locomotives is the *increased friction*, arising principally from the *unequal wear* of wrought tires; and hence most of the freight engines where wrought tires are used, have but four wheels as drivers, with frequently a weight of *sixteen tons*, or more, upon them. which may be of no disadvantage to the engine, although its effect upon the track is like a car with *sixteen tons* upon four wheels, and it is presumed no one would permit cars so heavily loaded to pass over their road.

As Chilled Tires wear more *uniformly* than those of wrought iron, there can be no doubt when these are used, that the weight necessary for adhesion may be distributed upon more *driving* wheels, without any material disadvantage to the engine, and thus placing *less weight* upon a single point, would relieve the track, and secure, to a great extent, the object sought to be gained by the plan so frequently proposed, of using *light engines*, which would bring with it the necessity of *increasing* the number of trains and train hands.

The complete success of Chilled Tires upon the Baltimore and Ohio road for the last seven years, and upon other roads for a more subsequent period, is a strong proof of their *practical character*, while their *cheapness and durability*, it is believed, recommend their trial by every railroad company.

It may be thought by some that the *whole wheel* for strength, would be preferable to wheels with tires, but experience shows the latter to be a much *stronger and more durable wheel*, on account of its freedom from *tension*, which is never the case with a *whole wheel*. That TENSION has much to do with the breaking of wheels and tires, may be inferred from the fact, that a set of *chilled tires*, five feet diameter, on a first class passenger engine, have been in constant service during the past winter, on one of our Eastern roads, and have withstood the severities of the season, where *whole wheels and wrought tires* have broken. And it may be proper to remark, that wherever chilled tires have been introduced, *whole wheels as drivers* are invariably abandoned, they being far more expensive to maintain, as there is a *crank to form* as often as a wheel is renewed, which is *not* the case on the renewal of a tire.

The peculiar manner of *fastening* these tires to the wheel without *shrink*, applies equally well to wrought tires, and is of much importance where they are used, as it secures them against the TENSION or STRAIN they receive by the present plan of *shrinking* them to the wheels, which undoubtedly is the cause of wrought tires breaking so frequently, particularly in cold weather, which produces a greater *contraction* of the tire, thereby increasing the strain. This plan makes the tire perfectly secure upon the wheel, and is attended with *less expense*, as will be seen by the following testimonials, which are respectfully submitted.

Lowell, March, 1851.

L. B. TYNG.

TESTIMONIALS.

Baltimore and Ohio R. R. Office, }
 Jan. 2, 1850. }

Mr. L. B. TYNG, Lowell, Mass.—Sir: Your favor of the 26th ult., is before me, asking my opinion of the Chilled Cast Iron Tires, of Messrs. Perkins & McMahon, patentees. I do not hesitate to speak favorably of them, nor to say that I would give them the preference over wrought iron tires, whenever the adhesive tenacity of the latter to the rails is not all called for, there being somewhat less adhesion to the chilled wheel.

This can, however, scarcely be called a practical point, as nearly all of the Passenger Engines now in use have a *surplus of adhesion*, and nearly all Freight Engines being provided with the sand box, for emergencies arising from sharp curves, heavy grades or wet rails.

The Chilled Tire is very much cheaper in first cost, will last longer, and offers a facility for putting it on the wheel, rendering comparison with the wrought iron tire an absurdity—it not being necessary even to take the wheels from the machine for the purpose.—Many of them are in successful use on this road, and I consider its curves and other peculiarities the most severe of all existing tests. One set of five feet in diameter, has run 50,000 miles under one of our Passenger Engines, and will to all appearance, run as many more; and, in the mean time, they have not cost a dollar for repairs or adjustment.

It may be suggested that they might not stand a Northern frost. This is possible; but I believe otherwise, as the weather here is occasionally as severe as in Boston, and if I had charge of a northern road, after the experience I have had here, I would make their trial one of my very first acts.

Respectfully your Ob't Serv't,

WM. PARKER, General Supt., etc.

January 29, 1851.

Philadelphia, Wilm. and Balt. R. R. Office, }
 Wilmington, Del. }

Mr. L. B. TYNG—Sir: We have used the solid Cast Iron Chilled Wheel, and Cast Iron Chilled Tire, for engine drivers, on this road since 1842. When wrought iron tires under new engines, purchased from time to time, wear out, I invariably replace them with the Chilled Tire of Messrs. Perkins & McMahon, patentees.

These Tires will last, on the average, three times as long as wrought tires; seldom requiring renewals under three years, and lasting much longer usually. We have a set which has been in constant use for five years, and still in fair order. The adhesion supplied by the Chilled Tires, I find in practice with engines of the same model and weight, to be equal to that given by wrought tires. This is certainly a fact, though not an acknowledged one, in general. Those who think otherwise, will in time change their opinions.

I am of opinion that the Chilled Tire is as safe as the wrought, at any temperature. In eight years use, we have broken but one tire out of more than fifty, and that by a violent concussion on the occasion of a run off.

The use of the Chilled Tire, and the ease and rapidity with which it may be replaced, would certainly enable a road to do the same amount of work with fewer engines—since but little time would be lost in laying up an engine for new tires, or for turning down old ones, as must be done when wrought tires are used.

I am yours respectfully,

I. R. TRIMBLE,
 Engineer and General Supt.

Office Eastern R. R., Salem, Dec. 23, 1850.

L. B. TYNG, Esq.—Sir: Your favor of Nov. 30th, inquiring respecting the Chilled Cast Iron Tires, came duly to hand, and in answer, I will say, that this road have in use one set cast and fitted to the wheel, by Messrs. Bush & Lobdell, upon a twenty ton first class Passenger Engine, which has run in eight months, 26,639 miles, and to all appearance, are about as good as when they first commenced running.

In regard to the comparative expense of the cast or wrought iron tires, I do not hesitate to say that the difference would be vastly in favor of the former.

I have ordered a second set, and they will be put on to the engine immediately. Respectfully,
 JOHN KINSMAN, Supt. E. R. R.

Chilled Tires for the various sized wheels, or wheels with either chilled or wrought tires fitted up upon this plan, may be had of the following persons:

ALDRICH, TYNG & Co, Lowell, Mass.
 SMITH & PERKINS, Alexandria, Va.

Rights for using Tires upon the above plan, may be had on reasonable terms, of L. B. TYNG, Lowell, and at N. York.

Railroad Iron.

THE UNDERSIGNED, HAVING made arrangements abroad, are prepared to contract for the delivery of Foreign rails, of approved brands upon the most favorable terms.

They will also make contracts for American rails, made at their Trenton works, from Andover Iron, in whole or in part, as may be agreed upon.

They are prepared to furnish Telegraph, Spring and Market Wire; Braziers and Wire Rods; Rivets and Merchant Bars to order, all made exclusively from Andover Iron. The attention of parties who require iron of the *very best quality* for special purposes, is respectfully invited.

COOPER & HEWITT,
 17 Burling Slip, New York.

February 15, 1850.

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
 No. 24 Commercial St. Boston.

August, 16, 1849.

6m33

Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron.

THOMAS B. SANDS & CO.,
 73 New street,
 New York.

February 3, 1849.

Glendon Refined Iron.

Round Iron, Band Iron, Hoop Iron,
 Square " Flat " Scroll "

Axles, Locomotive Tyres,
 Manufactured at the Glendon Mills, East Boston, for
 sale by GEORGE GARDNER & CO.,
 5 Liberty Square, Boston, Mass.

Sept. 15, 1849.

3m37

ENGINEERS.

Atkinson, T. C.,

Mining and Civil Engineer,
 Orange and Alexandria Railroad, Alexandria, Va.

Clement, Wm. H.,

Little Miami Railroad, Cincinnati, Ohio.

Cozzens, W. H.,

Engineer and Surveyor, St. Louis, Mo.

Alfred W. Craven,

Chief Engineer Croton Aqueduct, New York.

Floyd-Jones, Charles,

Alton and Sangamon Railroad, Alton, Illinois.

Gay, Edward F.,

Columbia and Philadelphia Railroad, Philadelphia Pa.

Gilbert, Wm. B.,

Rutland and Burlington Railroad, Rutland, Vt.

Gzowski, Mr.,

St. Lawrence & Atlantic Railroad, Montreal, Canada.

Grant, James H.,

Nashville and Chattanooga R. R., Nashville, Tenn.

S. W. Hill,

Mining Engineer and Surveyor, Eagle River,
 Lake Superior.

Holcomb, F. P.

Southwestern Railroad, Macon, Ga.

Latrobe, B. H.,

Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,

Buffalo and Conhocton Valley Railroad, Bath, N. Y.

Morris, Elwood,

Engineer, Chartiers Co., Pittsburgh, Penn.

Nott, Samuel,

Lawrence and Manchester Railroad, Boston,

Osborne, Richard B.,

Civil Engineer, Philadelphia.

Prichard, M. B.,

East Tennessee and Georgia R. R., Cleveland, Tenn.

W. Milnor Roberts,

Bellevue and Indiana Railroad, Marion, Ohio.

Roberts, Solomon W.,

Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Sanford, C. O.,

South Side Railroad, Virginia.

Schlatter, Charles L.,

Northern Railroad (Ogdensburg), Malone, N. Y.

Steele, J. Dutton,

Pottstown, Pa.

Trautwine, John C.,

Civil Engineer and Architect, Philadelphia.

Tinkham, A. W.,

United States Fort, Bucksport, Me.

Troost, Lewis,

Alabama and Tennessee Railroad, Selma, Ala.

Whipple, S.,

Civil Engineer and Bridge Builder, Utica, N. Y.

HOTELS.**DAVIS'S****ALHAMBRA HALL,**No. 136 Pratt street,
BALTIMORE.**Exchange Hotel,**Adjoining Eastern Railroad Depot,
BUFFALO, N. Y.BY.....**FISK & SPERRY,**
Late of Delevan House, Albany.**MANSSION,**Corner of Maine and Exchange Streets,
P. DORSHIMER. BUFFALO.**Barnum's City Hotel,**

MONUMENT SQUARE, BALTIMORE.

This Extensive Establishment, erected expressly for a Hotel, with every regard to comfort and convenience, is situated in the centre and most fashionable part of the city, and but a few minutes' walk from the Railroad Depots and Steamboat Landings.

The House has lately undergone a thorough repair, embracing many valuable improvements, and will accommodate 250 Guests. **BARNUM & CO.****American Hotel,**Pratt street, opposite the Railroad Depot,
BALTIMORE.**HENRY M. SMITH.....Proprietor.**

Late of the Exchange & St. Charles Hotels, Pittsburg

Washington Hotel,BY **JOHN GILMAN,**

\$1 Per Day.

No. 206 Pratt street, (near the Depot),
BALTIMORE.**GUY'S****United States Hotel,**(Opposite Pratt street Railroad Depot),
BALTIMORE.**JOHN GUY.****WILLIAM GUY.****DUNLAP'S HOTEL,**On the European Plan,
NO. 135 FULTON STREET,
Between Broadway and Nassau St.,
NEW YORK.**JONES' HOTEL,**NO. 152 CHESTNUT STREET,
PHILADELPHIA.**BAIDERS & WEST, Proprietors.****Fountain Hotel,**LIGHT STREET, BALTIMORE,
THURSTON.....Proprietor.**BUSINESS CARDS.****Walter R. Johnson,**

CIVIL AND MINING ENGINEER AND ATTORNEY for Patents. Office and Laboratory, F St., opposite the Patent office, Washington, D. C.

Lithography.**JOHN P. HALL & CO.,**

161 Main st., Buffalo, (Commercial Advertiser Build.)

Are prepared to execute all kinds of Lithography in good style and at reasonable rates. Particular attention will be paid to Engraving Railroad Maps, Engineer's Plans and drafts, etc., and orders in this line are respectfully solicited.

Cumberland, (Md.) Coals for Steaming, etc.**ORDERS RECEIVED FOR AND FILLED**
by **J. COWLES, 27 Wall St., N. Y.****J. & L. Tuckerman,**
IRON COMMISSION MERCHANTS,AND MANUFACTURERS OF
ULSTER BAR & POUGHKEEPSIE PIG IRON,
69 WEST STREET,
NEW YORK**Henry I. Ibbotson,**IMPORTER of Sheffield and Birmingham Goods.
Also, Agent for the Manufacture of Telegraph Wire.
218 PEARL ST., NEW YORK.**Charles T. Jackson, M. D.,**

STATE ASSAYER, late Geologist to Maine, Rhode Island, New Hampshire, and the United States, offers his services to his friends and the public in making any Chemical, Mineralogical or Geological researches that may be required for the improvement of Agriculture and the Manufacturing Arts. Particular attention will be paid to the exploration of mines and to assaying of ores of the metals.

State Assayer's office, 31 Somerset st.
Boston Sept. 3, 1850.**STEEL AND FILES.****R. S. Stenton,**

20 CLIFF STREET, NEW YORK,

AGENT FOR

J. & RILEY CARR,BAILEY-LANE WORKS, SHEFFIELD,
Manufacturers of Cast, Shear, German, Blister, and
Spring Steel,
Of all descriptions, Warranted Good.**FILES.**

Manufacturers of Machinists' Warranted Best Cast Steel Files, expressly for working upon Iron and Steel, made very heavy for recutting.

A full Stock of Steel and Files at all times on hand. 6m4

Dudley B. Fuller & Co.,IRON COMMISSION MERCHANTS,
No. 139 GREENWICH STREET,
NEW YORK.**Manning & Lee,**GENERAL COMMISSION MERCHANTS,
NO. 51 EXCHANGE PLACE,
BALTIMORE.

Agents for Avalon Railroad Iron and Nail Works. Maryland Mining Company's Cumberland Coal 'CED'—'Potomac' and other good brands of Pig Iron.

Samuel Kimber & Co.,
COMMISSION MERCHANTS

WILLOW ST. WHARVES, PHILADELPHIA.

AGENTS for the sale of Charcoal and Anthracite Pig Iron, Hammered Railroad Car and Locomotive Axles, Force Pumps of the most approved construction for Railroad Water Stations and Hydraulic Rams, etc., etc.
July, 27, 1849.**James Herron, Civil Engineer,**OF THE UNITED STATES NAVY YARD,
PENSACOLA, FLORIDA.,

PATENTEE OF THE

HERRON RAILWAY TRACK,

Models of this Track, on the most improved plans, may be seen at the Engineer's office of the New York and Erie Railroad.

PLUSHES

FOR

Railway Cars & Omnibuses.**F. S. & S. A. MARTINE,**
112 WILLIAM ST., NEAR JOHN.

ARE now receiving a large and complete assortment of Plain and Figured PLUSHES, of their own importation, which will be sold at the lowest market price, viz: Crimson, Maroon, Scarlet, Green, Blue, Purple, etc.

ALSO—CURLED HAIR, the best manufactured in market.

To Railroad Companies, Machinists, Car Manufacturers, etc., etc.**CHARLES T. GILBERT,**

NO. 80 BROAD ST., NEW YORK,

IS prepared to contract for furnishing, at manufacturer's prices—
Railroad iron,Locomotive Engines,
Passenger and Freight Cars,
Car Wheels and Axles,
Chairs and Spikes.

Orders are invited; and all inquiries in relation to any of the above articles will receive immediate attention

Manufacture of Patent Wire ROPE AND CABLES,For Inclined Planes, Suspension Bridges, Standing Rigging, Mines, Cranes, Derrick, Tilters, &c., by
JOHN A. ROEBLING, Civil Engineer,
TRENTON, N. J.**FORGING.****Ranstead, Dearborn & Co.,**MANUFACTURERS OF
LOCOMOTIVE CRANKS AND CAR AXLES,WROUGHT IRON SHAFTING,
And All Kinds of Hammered Shapes.
Office 25 Foster's Wharf, Boston.**Samuel D. Willmott,**MERCHANT, AND MANUFACTURER OF
CAST STEEL WARRANTED SAWS,—AND FILES—
IMPORTER OF THE
GENUINE WICKESLY GRINDSTONES
NO. 8 LIBERTY STREET,
NEW YORK.**Railroad Instruments.**THEODOLITES, TRANSIT COMPASSES, and Levels, with Fraunhoffer's Munich Glasses, Surveyor's Compasses, Chains, Drawing Instruments, Barometers, etc., all of the best quality and workmanship, for sale at unusually low prices, by
E. & G. W. BLUNT,No. 179 Water St., cor. Burling Slip.
New York, May 19, 1849.**IRON.****Iron.**Pig Iron, Anthracite and Charcoal; Boiler and Flue Iron, Spring and Blistered Steel, Nail Rods, Best Refined Bar Iron, Railroad Iron, Car Axles, Nails, Stove Castings, Cast Iron Pipes of all sizes, Railway Chairs of approved patterns for sale by
COLEMAN, KELTON & CABELL,

109 N. Water St., Philadelphia.

Iron Store.

THE Subscribers, having the selling agency of the following named Rolling Mills, viz: Norristown, Rough and Ready, Kensington, Triadelphia, Pottsgrove and Thorndale, can supply Railroad Companies, Merchants and others, at the wholesale mill prices for bars of all sizes, sheets cut to order as large as 58 in. diameter; Railroad Iron, domestic and foreign; Locomotive tire welded to given size; Chairs and Spikes; Iron for shafting, locomotive and general machinery purposes; Cast, Shear, Blister and Spring Steel; Boiler rivets; Copper; Pig iron, etc., etc.

MORRIS, JONES & CO.,

Iron Merchants,

Schuylkill 7th and Market Sts., Philadelphia.
August 16, 1849.

Bowling Iron. Stamped B.O.

Railway Tire Bars
Locomotive and other Axles
Boiler Plates
and every other description of this superior Iron.

The subscribers, agents for the sale of Bowling Iron, are prepared to execute orders for importation, especially for railway and machinery uses, with despatch from the manufacturers.

RAYMOND & FULLERTON, 45 Cliff st.

**Ibbotson, Brothers & Co's
CELEBRATED CAST STEEL**

AND

Best Cast Steel Royal Improved Files, well known as better adapted for Engineers' and Machinists' purposes than any now in use in the United States.

Every description of Square, Octagon, Flat and Round Cast Steel, Sheet, Shovel and Railway Spring Steel, etc., and Steel to order for any purposes—manufactured at their works in Sheffield—and universally known by the old stamp "Globe."

HENRY I. IBBOTSON, Agent,
218 Pearl st., New York.

**Smith & Tyson,
IRON COMMISSION MERCHANTS,
BALTIMORE.**

REFINED Juniata Charcoal Billet Iron for Wire. Do. for Bridging, of great strength.

Flat Rock, Boiler and Flue Iron, rolled to pattern. Elba, Wheel Iron of great strength and superior chiling properties. Elba Forge Iron, American Shot Iron, Cut Nails, Spikes and Brads, Nail and Spike rods, Railroad Spikes of superior quality, Wrought Chair plates of any pattern, punched or plain.

**WILLIAM JESSOP & SONS'
CELEBRATED CAST-STEEL.**

The subscribers have on hand, and are constantly receiving from their manufactory,

PARK WORKS, SHEFFIELD,

Double Refined Cast Steel—square, flat and octagon. Best warranted Cast Steel—square, flat and octagon. Best double and single Shear Steel—warranted. Machinery Steel—round.

Best and 2d gy. Sheet Steel—for saws and other purposes.

German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.

Genuine "Sykes," L. Blister Steel.

Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by

WM. JESSOP & SONS,
91 John street, New York.

Also by their Agents—

Curtis & Hand, 47 Commerce street, Philadelphia.
Alex'r Fullerton & Co., 119 Milk street, Boston.
Stickney & Beatty, South Charles street, Baltimore.
May 6, 1848.

Railroad Iron.

B. O. Railway Tires, Railway Wheels,
Scotch Pig Iron, Tin Plates and Banca Tin,
Muntz's Patent Metal Sheathing,
Baltimore Copper.

Contracts for Rails made on behalf of the manufacturers, for delivery at any ports in the United States, at fixed prices.

Bowling Tires and Tire Bars and Scotch Pigs imported to order.

Muntz's Ship-sheathing, and a general stock of Tin Plates and Banca Tin in store, and for sale by
RAYMOND & FULLERTON, 45 Cliff st.

IRONDALE PIG METAL, MANUFACTURED
and for sale by the Bloomsburg Railroad Iron Co.
LINDLEY FISHER, Treasurer.
75 N. Water St., Philadelphia.

Car Wheel Iron.

THE celebrated cold blast "Conowingo" Pig Iron, for Railroad Wheels, Chilled Rolls, etc., for sale by
E. PRATT & BROTHER,
Baltimore, Md.

Railroad Iron.

3,000 TONS C. L. MAKE 63½ lbs. per yard, now landing and to arrive.

Also contracts made for future delivery of above superior make English Iron.

300 Tons Banks Best Iron, Round, Square and Flat.
200 " English Bar "

10 " 9-16 Square Iron for Railroad Spikes.

For sale in lots to suit purchasers by

DAVID W WETMORE.
New York, March 26, 1850.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

**JOHNSON, CAMMELL & Co's
Celebrated Cast Steel,**

AND

ENGINEERING AND MACHINE FILES, which for quality and adaptation to mechanical uses, have been proved superior to any in the United States. Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cyclops Steel Works Sheffield.

JOHNSON, CAMMELL & CO.,
24 Cliff St., New York.

November 23 1849.

Bowling Tire Bars.

40 Best Flange Bars 5½x2 inches, 11 feet long.
40 " " 5½x2 " 7 feet 8 in. long.
40 " Flat " 6x2 " 11 feet long.
40 " " 6x2 " 7 feet 8 in. long.

Now in store and for sale by

RAYMOND & FULLERTON,
45 Cliff street.

**Wheel, Forge and Foundry
Iron.**

LOCUST GROVE Wheel Iron of great strength and superior chilling property.

Balt. Charcoal Forge Iron, from Patuxent, Curtis Creek and Gunpowder furnaces.

Elkridge Foundry Iron, of superior strength and softness. Anthracite and Charcoal Iron from Pennsylvania and Virginia. Gas and Water Pipes, Lamp Posts from Elkridge furnace.

LEMMON & GLENN,
5m9 62 Buchanan's Wharf, Baltimore.

Railroad Iron.

1650 Tons, weighing about 61 lbs. per yard, 40 tons, weighing about 52 lbs. per yard, and 825 tons, weighing about 53½ lbs. per yard, of the latest and most approved patterns of T rail, for sale by

BOORMAN, JOHNSTON & CO.,
119 Greenwich street.

New York, Aug. 26, 1850.

N.B.—B. J. & Co are also prepared to take contracts for English rails, delivered in any of the Atlantic ports of the United States.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract to deliver Rails of superior quality, and of any size or pattern, to any ports of discharge in the United States.

COLLINS, VOSE & CO.,
74 South St.

New York, June 1, 1850.

Tredegar Iron Works.

ROLLING MILL FOUNDRY AND MACHINE SHOPS. The undersigned continues to manufacture at his Works in this city (from best charcoal metal) Bar Iron of every description, embracing—

Rounds and Squares, from ½ to 5 inches diameter. Flats, from ¼ to 7 inches, all thicknesses. Bands and Scrolls, all sizes. Boiler plate and Plough Iron. Railroad and Locomotive Axles and Tires. Locomotive Frames, Spikes and Plates. Hoops, Ovals, Half Ovals, Half Rounds, Angle, T, L, and indeed every description of Iron usually manufactured, all of which he warrants to be equal to any made in this country. He also manufactures at his Foundry and Machine Shops all descriptions of Railroad Work, say, Locomotives, Railroad Wheels and Axles complete and ready for the road, Railroad Chairs, etc. Also, Marine and Stationary Engines all sizes, Sugar mills and Engines, Horse mills, and every kind of Machinery usually required for the operations of the country. He has paid particular attention to getting up machinery, etc., for Gold Mine operations, and those in want of such work might find it to their advantage to give him a call.

J. R. ANDERSON.
Richmond, Va., Sept. 10, 1850.

CUT NAILS OF BEST QUALITY, BAR IRON (including Flat Rails) manufactured and for sale by

FISHER, MORGAN & CO.,
75 N. Water St., Philadelphia.

Car Wheel Iron.

100 Tons "Columbia" No. 2 Cold Blast Charcoal Iron.

300 Tons "Salsbury" No. 1, do. do.
For sale by CHARLES T. GILBERT,
No. 80 Broad st.

New York, Sept. 21, 1850.

Railroad Spikes.

THE subscribers are prepared to make and execute contracts for Railroad Spikes of a superior quality, manufactured by the New Jersey Iron Company, at Boonton. DUDLEY B. FULLER & CO.
139 Greenwich st. corner of Cedar.

**S. S. Keyser & Co.,
IRON WAREHOUSE,**

Corner of South and Pratt Streets,
BALTIMORE, MD.

Selling Agents for the Rough and Ready Bar Iron and Elk Boiler and Flue Iron Rolling Mills, Sarah and Taylor Furnaces, and Wrightsville Hollow Ware Foundry, and Dealers in Bar and Sheet Iron, and Cast, Sheer, German, Blister, Spring and Electrodes Steel, etc., etc.

Railroad Spikes, Boiler Rivets, etc.

THE Subscribers, Agents for the sale of James S. Spencer's, Jr., Railroad and Boat Spikes, Boiler Rivets, and Wrought Iron Chairs for Railroads, made at his Works near this city, will execute all orders with promptness, despatch, and of the best quality.

ALSO IMPORTERS of English refined and Merchant bar Iron; Extra refined Car and Locomotive Axles (from 3½ to 6½ inches in diameter); B. O. Locomotive Tire (welded by Baldwin). Also, supply Boiler and Flue Iron cut to pattern or otherwise.—Spring, Shear, and Cast Steel, etc., etc., etc.

T. & E. GEORGE.

Philadelphia, November 14, 1850.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract for the delivery of English, Welsh and Scotch Rails, of any pattern and weight, also for every description of English, Welsh, Scotch, and Swedish Iron, Railway Chairs and Spikes, Rivets, Bolts, Nuts, Washers, Chain Cables, Anchors, Tin Plates, German Spelter, Iron Castings, and every description of Machinery.

WILLIAM BIRD & CO.,

Iron and Tin Plate Merchants,
44 Wall st., New York.

And at 5 Martin's Lane, City, London,
and 140 Buchanan st. Glasgow.

July 27th, 1850.

**Railroad Spikes, Wrought
Chairs and Fastenings.**

THE subscribers continue to manufacture, with increased facilities, Hook and Flat Head Railroad Spikes and Chairs. The points being finished by hand, have a long taper, and sharp point, and are much superior to those made entirely by machinery.

We are also prepared to furnish Wrought Chairs, Clamps and Fastenings of every description, either punched or plain. The best quality of refined iron is used in the above articles, and our prices will be made as favorable as any in the country.

The patent Clinch Spike will be found an improvement to secure the rail at the joints.—They drive in the manner shown and are not liable to work loose.

All communications, addressed to the undersigned, will meet with prompt attention.

SMITH & TYSON,

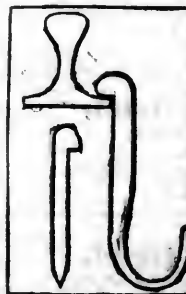
No. 25 South Charles st., Baltimore Md.

TO RAILROAD COMPANIES, CAR MANUFACTURERS, etc.

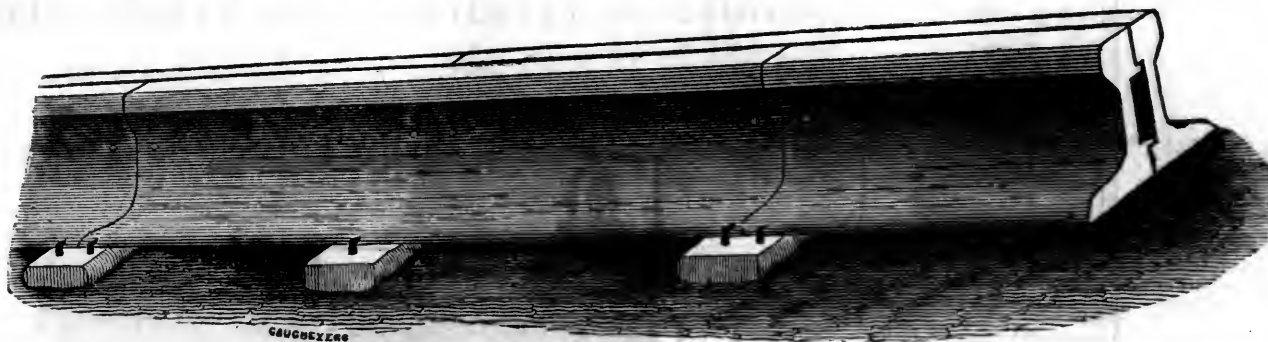
THE Undersigned hereby gives public notice, that the Commissioner of Patents, pursuant to his decision in relation thereto, on the 8th day of October, 1850, issued to him a Patent for the sole right to manufacture, and exclusive use of the INDIA RUBBER CAR SPRING, on account of priority of invention of said Spring.

F. M. RAY,

New York, Oct. 23, 1850.



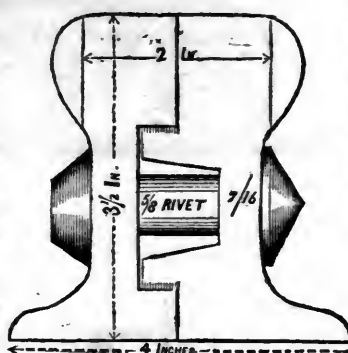
PATENT COMPOUND RAIL.



THE UNDERSIGNED NOW OFFER TO THE Railroad Public a new Compound Railroad Bar, which possesses, as they believe, a decided superiority over every kind now in use. The Cuts annexed will give a good idea of the form of the Rail, and the mode of combination.

This Rail has now been in use on the New York and Erie and the Utica and Schenectady Railroads for nearly two years, and has proved itself to be a *durable and continuous* rail, realizing the advantages of a theoretically perfect rail, over the one in common use. We invite the attention of Railroad Companies to a careful examination of the merits of the form now offered.

The advantages of this Rail are: first, it effects a saving of from 25 to 50 per cent. in the wear and tear of the machinery; secondly, it saves to a vastly greater extent in the repairs of track; thirdly, it secures a much higher rate of speed with the same power; and what is of still



greater importance, it offers complete protection against most of the accidents to which companies are liable. For these reasons, it is believed to be not only the best, but the cheapest rail that can be used. In enumerating its advantages, the proprietors only repeat the statements of competent persons, who have had the best opportunities of judging of its merits.

This improved Rail is now being manufactured at the Works of the Mount Savage Iron Co. in Maryland. Any communications or enquiries addressed to either of the undersigned will receive prompt attention.

J. F. WINSLOW, President,
Troy, N. Y.
ERASTUS CORNING, Albany.
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore.

April 8, 1851.

Faggotted Car and Engine Axles

FORGED by RANSTEAD, DEARBORN & Co., Boston, Mass. These Axles enjoy the highest reputation for excellence, and are *all warranted*.

Iron Trade of Pennsylvania.

DOCUMENTS and Statistics relating to the Manufacture of Iron in the State of Pennsylvania—giving a history of the manufacture from its commencement to this date, illustrated by diagrams. Also tables giving the address and capacity of every establishment in the State. Prepared by direction of the late convention of the trade held in Philadelphia. For sale by

LINDSAY & BLACKISTON, Philadelphia.
FIELDING LUCUS, Jr., Baltimore.
HENRY G. NICHOLS, 79 Water st., N. Y.
or at this office—price \$1 00.

It will be sent by mail to any order enclosing the money, and post paid.

Ulster Iron.

THE ULSTER IRON WORKS, Saugerties, N. Y., continue in full operation. Orders for round, square, flat, band, hoop and scroll iron, will be received and promptly executed by

J. & L. TUCKERMAN,
69 West St., New York.

India-rubber for Railroad Cos.

RUBBER SPRINGS—Bearing and Puller—Fuller's Patent—Hose from 1 to 12" diameter. Suction Hose. Steam Packing—from 1-16 to 2 in. thick. Rubber and Gutta Percha Bands. These articles are all warranted to give satisfaction, made under Tyer & Helm's patent, issued January, 1849. No lead used in the composition. Will stand much higher heat than that called "Goodyear's," and is in all respects better than any in use. Proprietors of rail roads do not be overcharged by pretenders.

HORACE H. DAY,
Warehouse 23 Courtlandt street
New York, May 21, 1849.

Railroad Iron.

2000 TONS T RAILS, of desirable pattern, arrived, and to arrive, for sale by
RAYMOND & FULLERTON,
62 21 45 Cliff st.

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. J. F. WINSLOW, President

Troy, N. Y.
ERASTUS CORNING, Albany.
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md

November 6, 1848.

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phoenix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehanna river; which two establishments are now turning out upwards of 1800 tons of finished rails per month.

Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.

REEVES, BUCK & CO.
45 North Water St. Philadelphia;

March 15, 1849.

LAP—WELDED WROUGHT IRON TUBES

FOR

TUBULAR BOILERS, FROM ONE AND A QUARTER TO SEVEN INCHES IN DIAMETER.

THE ONLY Tubes of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER & SON, Patentees,
28 Platt street, New York.

AMERICAN PIG IRON.

"POUGHKEEPSIE" brand, Dutchess Co., N. Y.
"GLENDALE" brand, Lehigh county, Pa.
Orders for the above two well known brands will be received, and promptly executed, by
J. & L. TUCKERMAN,
69 West St., New York.

American Cast Steel.

THE ADIRONDAC STEEL MANUFACTURING CO. is now producing, from American iron, at their works at Jersey City, N. J., Cast Steel of extraordinary quality, and is prepared to supply orders for the same at prices below that of the imported article of like quality. Consumers will find it to their interest to give this a trial. Orders for all sizes of hammered cast steel, directed as above, will meet with prompt attention.
May 28, 1849.

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for rail roads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.

JOHN F. WINSLOW, Agent.
Albany Iron and Nail Works, Troy, N. Y.
The above Spikes may be had at factory prices, of Erastus Corning & Co Albany; Menitt & Co., New York; E. Pratt & Brother, Baltimore, Md.

Stickney & Beatty, DEALERS IN IRON AND IRON MANUFACTURERS.

AGENTS for the Baltimore City Rolling Mill (Works of Messrs. Ellicott) also agents for the sale of the Laurel, Locust Grove and Gunpowder (Balt.) Forge Pig Irons; Hupp's Cold Blast Columbia Wheel Iron, Fort and anti-Eatam Pig Irons. Caledonia, Columbia and Capon Cold Blast Boiler Blooms, warranted; Wm. Jessop & Son's Steel; Old Colony and anti-Eatam Nails; Bar Iron, Boiler Plates, Hoop, Sheet, Oval, Half Oval, Horse Shoe and other Iron. Exchange Place, Baltimore.

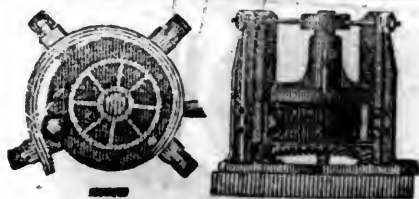
Railroad Iron.

2000 Tons, weighing 58 pounds per lineal yard, of the most approved pattern of T rails, in store and to arrive, for sale by
COLLINS, VOSE & CO.,
74 South St,

New York, June 1, 1850.

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phoenixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll sounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y.

P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery for making Spikes, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

CHILLED RAILROAD WHEELS.—THE UNDERSIGNED are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

Brown's Old Established SCALE WARE HOUSE,
NO. 234 WATER ST., NEW YORK.

THE Subscriber, Practical Manufacturer of Scales of every description, respectfully asks the attention of Railroad Companies to his Improved Wrought Iron Railroad Track and Depot Scales which for strength, durability, accuracy, convenience in weighing, and beauty of workmanship, are not surpassed by any others in this country.

He is aware that this is rather a bold assertion for him to make, yet he can say with confidence that they have but to be tried to give them precedence over all others.

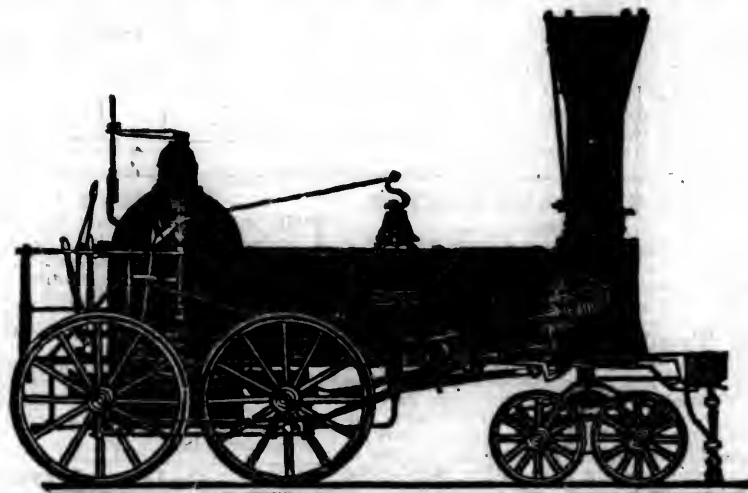
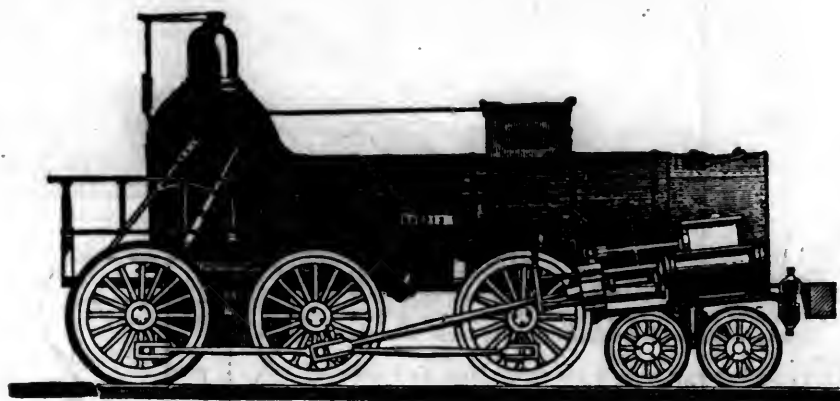
J. L. BROWN.

Bank Scales made to order, and all Scales of this make Warranted in every particular.

Reference given if required

NORRIS' LOCOMOTIVE WORKS.

BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,



THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size. Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tyres are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS

PATENT MACHINE MADE HORSE-SHOES.

The Troy Iron and Nail Factory have always on hand a general assortment of Horse Shoes, made from Refined American Iron.

Four sizes being made, it will be well for those ordering to remember that the size of the shoe increases as the numbers—No. 1 being the smallest.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

Etna Safety Fuse.

THIS superior article for igniting the charge in wet or dry blasting, made with DUPONT'S best powder, is kept for sale at the office and depot of

REYNOLDS & BROTHER,

37 So. Manufacturers, No. 85 Liberty St.,

NEW YORK.

And in the principal cities and towns in the U. States.

The Premium of the AMERICAN INSTITUTE was awarded to the Etna Safety Fuse at the late Fair held in this city.

November 3, 1843.

ly

UNION WORKS,

North street, opposite the Railroad Depot,
BALTIMORE.

Poole & Hunt,

Manufacturers of Steam Engines and Mill Gearing, Machinists' Tools, and all kinds of heavy and light Machinery.

Also put up Arrangements of Wrought Iron Pipes for heating buildings and conveying steam or water.

Castings of every kind furnished at short notice. Every exertion will be made to insure the satisfaction of customers.

Patent Machine Picket Fence

SIX DIFFERENT STYLES of this fence are now made by patent machinery; and is by far the most economical fence for Railroads, Farms, Yards, etc., ever yet offered to the public, costing only from 4 to 30 cents per foot, according to pattern; and is so put up as to be shipped at a trifling expense. Full particulars will be furnished, by addressing the subscriber, to whom all orders should be sent.

N. STRATTON, Troy, N. Y.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

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ASSISTANT EDITORS,

J. T. HODGE, *For Mining and Metallurgy.*
GEN. CHAS. T. JAMES, *For Manufactures and the
Mechanic Arts.*

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American Railroad Journal.

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Saturday, June 28, 1851.

Railroads in the Provinces.

The Hon. Mr. Howe, of Nova Scotia, (who is now at Toronto, urging his Quebec and Halifax railroad upon the people of Canada,) when passing through St. John, gave, in a long speech, an elaborate *expose* of his scheme to the people of that city. His speech was a very dexterous one, and well calculated to make an impression upon an audience, while at the same time it was most specious and unsound in almost every particular. Mr. Howe is a man of impassioned temperament, who, for the want of experience in practical affairs, suffers his ideas to run to extremes that are practically false. Men of this stamp are eloquent at the expense of sound sense. A practical, and really wise man, in looking at almost every subject coming within the scope of his business, sees in it opposing arguments and probabilities, which nearly balance each other. These he carefully compares, and his convictions and action follow the weight of evi-

dence. In the outset he will not suffer himself to become excited, for fear he may not properly estimate the conflicting testimony; and the result obtained by this process, is often so small and unimportant, if we may use the expression, as to give no occasion for excessive emotion. We therefore find sagacious men always cool and collected; never excited to a pitch of frenzy on the one hand, nor despair on the other. The impassioned man, the enthusiast, on the contrary, sees only one side of the question, and he is impassioned and enthusiastic for this reason alone. To his mind, his view embraces the whole, while at best it includes but half the truth; and, carried to extremes, may result in a very great falsehood.

The whole of Mr. Howe's speech comes under the last category. He deals entirely in the superlative. There is no half way with him. Every thing is either black or white. There is no middle ground. He has great objects to accomplish, and the means which he proposes are exactly adapted to realise them. He is going to elevate the Provinces to the rank and dignity of a nation. The Halifax railroad is the instrument that will certainly accomplish this. The Provinces have thus far shown themselves unequal to the task of constructing works of internal improvement; therefore they never can be made competent. Their works must be built by the aid of the Home Government, or not at all. These are fair specimens of his mode of reasoning. His speech is a rhapsody, and never rises to the dignity of argument. He has sustained none of his leading points with the proper evidence. The preparation of such evidence would have prevented the delivery of his speech, and it would have demonstrated, even to Mr. Howe, the utter fallacy of his positions.

The leading object of Mr. Howe is, to build up a great northern confederacy composed of the British Provinces, which shall secure to them the dignity and consideration of independent sovereignties. He says virtually that they are now the *fecund* of creation, and illustrates their humiliation in this way. When the steamer that carried Mr. Howe arrived at Liverpool, all were eager to get on shore. A certain nameless gentleman, with big pouches hanging on his arm, steps up to the official, and says "I am bearer of dispatches from the government of the United States." "Go on shore, sir," was the word. Mr. Howe, sensible of the im-

portance of his mission, and the dignity of the government he represented, steps up to the same official, and says "Sir, I am bearer of dispatches from the government of Nova Scotia." "Don't know any such government; no orders, sir," was the reply—and Mr. Howe was tumbled back into the promiscuous herd of travellers, and forced to run the gauntlet of the officious and prying inspectors. So when he got to London, he saw Mr. Lawrence, our ambassador—no better man, says Mr. Howe, than five hundred whom he can pick out in Nova Scotia—cutting a great swarth in the House of Lords, with a *cart blanche* to go where he pleased, while Mr. Howe's ticket of admission, was an introduction by the Hon. Mr. So-and-so. This degrading contrast raised Mr. Howe's dander, and he very properly and very sensibly determined to raise his country, to wit, Nova Scotia, to the rank of the United States, and himself to the privileges enjoyed by Mr. Lawrence; and how? By the construction of the Quebec and Halifax railroad. He fully admits and feels the humiliating condition of the Provinces; but he has discovered in this road, the grand panacea for all the ills under which they are laboring.

Let us look at this matter a little, this magic charm that is so suddenly and so completely to change the condition of the Provinces, from poverty to wealth, from insignificance to importance, from neglect to the "highest consideration."

From Halifax to Quebec, the distance by the proposed road is 650 miles. But Quebec is at the lower extreme of the Canadas. The "great west," the real or fabled source of the wealth of this continent, would not be reached without going to Montreal, 180 miles further; making the whole line of road necessary to accomplish the great objects of Mr. Howe, 830 miles. Upon this 830 miles of road is to be thrown the produce of the "west," to be taken to Halifax for exportation. It is the profits arising from its transportation, together with that arising from travel and local business, that are to make the Provinces great, rich and powerful, and enable her great men and ambassadors to run the Liverpool Custom House "scott free," to visit the House of Lords "because they have a mind to;" in fine, to cut a big figure, whether upon the bench, in the Colonial, or what is still better, in the Home Parliament, and as "Ministers Plenipotentiary and Extraordinary," etc., etc.

We will suppose this road built to Montreal and ready for business. A merchant wishes to send 100 barrels of flour to Halifax. He applies to the company, who offer to forward it at the very low price of two cents per ton per mile, which only amounts to \$16 60 per ton, or \$1 66 per barrel!!! This cools his patriotism a little, supposing him to be of the same mind with Mr. Howe. He goes to a New York forwarder, and finds that he can send the same to New York for \$3 per ton, or 30 cents per barrel, and from that city to Halifax for \$2 per ton, or 20 cents per barrel; making a saving on each ton of \$11 60 cents! A slight saving might be effected over the above estimate, by taking the flour to Quebec; but even in that case, it would cost over \$12 per ton to send it to Halifax. In our illustration we put flour for every kind of merchandise. We therefore ask Mr. Howe, and every body else, whether, with these charges, either Canada or the west will send any produce to market, via Halifax, or import through the same channel, when they can use the New York route for one third the cost of the other? The argument here occupies a very small space. The distance, and cost of transportation per mile, being known, the result is a matter of mathematical calculation. It will be borne in mind at the same time, that upon the completion of the enlargement of the New York canals, freight will be taken from this city to Lake Ontario at a cost not exceeding \$1 75 per ton. Our canals are thrown open to Canadian as well as American produce. At the above rate, we ask again, whether produce afloat on that lake will ever take the circuitous and expensive route by land, to Halifax?

How is it with passengers? We will admit that such as land at Halifax from the steamers, and wish to go direct to Quebec, would take the proposed road. The number might average two per week, though we believe one would be much nearer the mark. Business travel always follows the route of freight, for the latter makes the former, and unless the produce of the Canadas went to Halifax we can see nothing to call business men there. Certainly no one would take this as a route of pleasure, as it is, after leaving the St. Lawrence, entirely wanting in all attractions for the tourist, save the grandeur that arises from the vast and desolate expanse, of barren and uncultivated country.

How is it with way business? According to Mr. Howe's idea, the road must traverse the shore of the River and Gulf of St. Lawrence, to serve as a military line in case of war. For almost its entire course, it will be within a stone's throw of navigable tide water. Now it is well known that freight can be carried in sailing vessels for from one to three mills per ton per mile, against twenty mills by railroad. Is produce and merchandise going to pay tribute to railroads at ten times the cost of transportation by vessels? We think not. We can see no reason for putting a pound of freight on board the railroad, if built. Where shall it be taken? To Halifax? That is but a small town, and offers no market that its immediate vicinity cannot amply supply. If it must be exported, it would be just as cheap to ship it at the point where it was raised, and save the carriage of 200 or 300 miles by railroad. Railroads are wanted to send produce to a market. The Provinces have no domestic markets. Their produce must be sent abroad to find one. They have every facility for reaching them by water, but none by land. The

Lower Provinces are the last places in the world that need railroads for the purposes of transportation. If built, they would not change even in a slight degree the present course of business. If we are correct in what we have said, away goes the grand key stone of Mr. Howe's magnificent fabric. If the Quebec road when built, would neither become the route for the produce of the Provinces nor the United States; if it would not even change the course of business on the route traversed, how is this road to become the Moses who is to lead our neighbors out of Egypt, and bondage? In deciding this question, there is no room for fancy or imagination. All is sober fact. If it cost so much money to carry a ton one mile on a railroad, we have only to multiply this sum by the number of miles to be traversed, and we have the result. We should be even willing to leave the decision of the matter to Mr. Howe himself. It is one in which no sane man, no man who understands the force of figures, could make a mistake.

Mr. Howe calculates largely upon the moral, social and political influence of his proposed road. We apprehend that the construction of the road itself will accomplish nothing in this respect. These results will depend upon the amount of its business. If it will not become the route of travel, and if it never can become an avenue for freight, then will it be a dead letter, impotent for good, and a source only of vexation and annoyance. Its results of every kind, pecuniary as well as moral, must depend entirely upon its capacity for business; and this capacity, as we said before, can be ascertained with as much accuracy as we can tell how much two and two will make. In transportation, the route that bids *lowest*, carries off the prize.—There is no other guide in these matters, but pecuniary profit. Mr. Howe cannot find a loyal Englishman in all the Provinces, who, for a mill on a ton, would not decide in favor of the American route. In business matters, Englishmen and Yankees are alike loyal to the *Prince of Mammon*, and to no other potentate. It is this universal law that renders it so important that we should be governed by prudential considerations alone in the selection of routes for railroads. The end should always control the means. If we make a wrong move, if we locate a road upon an improper line, a penalty always attaches to our improvidence, sooner or later. We are compelled to right ourselves, by undoing what we have done, and adopting the right course at the loss frequently of all that has gone before. Never was there a more fatal mistake than this same one made by Mr. Howe, of throwing aside the only safe guide, the physical and material results of a railroad, and substituting therefor, the schemes of an ardent politician. Railroads and politics were not made for each other. The former are altogether too good to be caught in such company, and are certain to come to dishonor and disgrace from such an alliance. We have tried this matter out and out in the United States, and always with the most disastrous results. So uniform has been our experience in this matter, that a large number of our States have adopted constitutional restrictions to the contraction of State debts. This restriction is imposed, upon the adoption of nearly every new constitution, both in the old States and in the new. We have found public officers to be very unsafe persons with whom to entrust the expenditure of money. We cannot point to an exception of this universal rule. The Erie canal is often referred to as an instance of success-

ful management, but even in this case we have probably lost sight of a great amount of mismanagement, in the vast income which that work yields. The reason of this is perfectly obvious.—If practical men are not competent to spend their own means economically, how can we expect anything better from ignorant government officials, whose chief object will be, to make the most out of the work which they have in charge. Our experience is worth something, and should convey a lesson to our neighbors. Neither Nova Scotia nor New Brunswick are any more competent to undertake the construction of railroads, than were the States of Indiana or Illinois in 1835 and 1836. These states failed not for the want of means, but from sheer incompetence. As soon as the people discovered the cause, they set to work at once to correct the mischief, and took from their constituted authorities the power to contract debts for internal improvement. If the Provinces follow their example, they will certainly in time exhibit similar results. It is inevitable that this should be so. Failure will not be the result of accident, but will follow from an inherent inability on the part of a government to successfully prosecute enterprises which are purely commercial in their character.—Some of our states still assist in the building of railroads, but they lend money upon the security of private capital, and leave the means furnished to be expended by the companies themselves. We steadily ignore all direct connection between such aid, and the management of the works assisted. Mr. Howe attempted to prove from past experience, the utter incapacity of the Provinces to construct railroads and canals; and points to the disgraceful and disastrous result which has thus far attended all their efforts. If this proves anything, it proves too much. If the people are incapable, their government must be still more so. Certainly we think our neighbors have no great reason to feel flattered at the picture drawn by Mr. Howe. If it is a correct one, the less they have to do with railroads the better.

The Lower Provinces do not need railroads for commercial purposes. Their staples would not go on to railroads, if they had them. No portion of the United States is half so well off for facilities of carriage. Nearly every inhabitant of New Brunswick and Nova Scotia lives within a half a dozen miles of navigable tide water. The great thing that is crushing them to the earth, is the want of a market. Mr. Howe ridiculed the Portland convention, and stated that although the national flags of the two countries hung up side by side, an English *mackerel* could not have been carried to Portland without paying a heavy duty. That to the delegates alone, was free admission allowed. This is all very true; and it is the want of a free access to our markets that is the great drawback upon the prosperity of our neighbors. They are rich in all the materials of wealth, but England is too far off for a market, and the duties imposed by us amounts almost to a prohibition. Mr. Howe says we will not grant free trade. This is a great mistake. Brother Jonathan has thought the matter all over, and would gladly enter into an arrangement based upon the broadest principles of free trade. We do not need the corn, the coal nor the fish of the Provinces, but we will take them, provided they will take in turn, our cloths, our iron wares, our shoes and our nails. The Provinces cannot give us free trade. What would be the effect of such an arrangement? If our products were taken without

duties, they would be compelled to make up the loss by imposing an additional duty upon English merchandise, to keep up their revenues. The result would be that we should soon drive out the English manufacturer, and have the whole market to ourselves. This would be inevitable. A virtual annexation would soon take place, which in a short time would receive a legal sanction. If we go in for reciprocal free trade, we on our part wish to go the whole figure, and extend to every article of commerce. We wish to be consistent. Our people would be unanimous for such an arrangement; but we have no idea of making an arrangement which shall embrace only the articles of wheat and coal. We have more of these now than we can find a market for. We all want free trade with the Provinces, but we do not intend to be outwitted by them. They cannot grant free trade.—England would not suffer it. We should drive her out of one of her best markets in a very short time. Still, as we said before, the Provinces never will rest until this great boon is secured to them. They are now, if we may use the expression, without a country. They are excluded both from the home, and from foreign markets. We cannot expect a people to remain contented under such a state of things, especially Englishmen. It is the feeling of the necessity of doing something, that has driven them into the Halifax and Quebec railroad scheme—which, instead of relieving, would involve them still deeper in pecuniary distress.

Railroads perform two offices: they are the instruments of commerce, and of social enjoyment. Such is their value in the latter sense, that with us no portion of the country is considered worth living in without them. If our people cannot bring them to their doors, they will go where they are. A person who lives upon a line of railroad, no matter where, feels himself in the world. He is not isolated from all the rest of mankind. A railroad would tend to fill up the Provinces with people, because they would render living there tolerable. Commerce would flourish in proportion to the increase of population. Railroads, therefore, should take the line of convenience and travel. They can at present have no other use than the one we have stated. If it is believed that a railroad from Quebec would become a great channel for transportation and travel, it is because their capacity for business is misunderstood; or if it is believed that they alone would effect a regeneration of the Provinces, it is because their true condition and wants are not appreciated. Railroads may be useful as aids, but something far beyond them is wanting to secure to the Provinces that prosperity to which they are certainly entitled.

Virginia.

Parkersburg Railroad.—The Parkersburg Gazette of the 14th inst., says:—

"On the 20th inst. books of subscription to the capital stock of the Northwestern Virginia railroad company, will be opened at Clarksburg, Pruntytown, West Union, Harrisville, Elizabeth, Glenville, Buckhannon and Philippi; and on the 25th inst. at Weston, July 2d, being the day fixed for opening the books at that place. These points are well distributed through the region of country interested, so that every citizen may repair to one or other of them, on the day designated, with little trouble or difficulty. With regard to the prospect and probable amount of subscription, out of this county, we are not so fully advised as we could wish.—From some quarters we have learned nothing. From others we are informed that large and liberal subscriptions will be made, men of means taking a lively interest in the enterprise."

Population of the United States.—Seventh Census.

STATES.	White population.	Free colored population.	Total free.	Slaves.	Federal Rep. pop. uation.	No. of Representatives.	Fraction.
Alabama.....	426,515	2,250	428,765	342,894	634,501	7	*72,289
Arkansas.....	126,071	587	162,658	46,982	190,848	2	*3,444
California.....	200,000	.....	200,000	.....	200,000	2	12,556
Connecticut.....	363,189	7,415	370,604	.....	370,604	4	*89,498
Delaware.....	71,282	17,957	89,239	2,289	906,612	1	.....
Florida.....	47,120	926	48,046	39,341	71,650	1	.....
Georgia.....	513,083	2,586	515,669	362,966	733,448	8	*77,534
Indiana.....	983,634	5,100	988,734	.....	988,734	11	*51,714
Illinois.....	853,059	5,239	858,298	.....	858,298	9	20,980
Iowa.....	191,830	292	192,122	.....	192,122	2	4,718
Kentucky.....	770,061	9,667	779,728	221,768	912,788	10	*75,470
Louisiana.....	254,271	15,685	269,956	230,807	408,440	4	33,632
Maine.....	581,920	1,312	583,232	.....	583,232	6	21,020
Massachusetts.....	985,498	8,773	994,271	.....	994,271	11	*57,251
Maryland.....	418,763	73,943	492,706	89,800	546,586	6	*78,076
Mississippi.....	291,536	898	292,434	300,419	472,685	5	4,175
Michigan.....	393,156	2,547	395,703	.....	392,703	4	20,895
Missouri.....	592,176	2,667	594,843	89,289	648,416	7	*86,204
New Hampshire.....	317,354	477	317,831	.....	317,831	3	36,725
New York.....	3,042,574	47,448	3,090,022	.....	3,090,022	33	*91,558
New Jersey.....	466,283	22,269	488,552	119	488,623	5	20,113
North Carolina.....	552,477	27,271	580,458	288,412	753,505	8	3,889
Ohio.....	1,951,101	25,930	1,977,031	.....	1,977,031	21	9,289
Pennsylvania.....	2,258,480	53,201	2,311,681	.....	2,311,681	25	*62,833
Rhode Island.....	144,012	3,543	147,555	.....	147,555	2	*53,853
South Carolina.....	274,775	8,769	283,544	384,925	514,499	5	45,989
Tennessee.....	767,319	6,280	773,599	249,519	923,310	10	*89,992
Texas.....	133,131	926	134,057	53,346	166,054	2	*72,362
Vermont.....	312,756	710	313,466	.....	313,466	3	32,360
Virginia.....	894,149	53,906	948,055	473,026	1,231,870	13	13,744
Wisconsin.....	303,600	626	304,226	.....	304,226	3	23,120
	19,517,885	409,200	19,927,085	3,175,902	21,832,621	233	.....
TERRITORIES.							
Dt. of Columbia.....	38,027	9,973	48,000	3,687	.....	.....	.....
Minnesota.....	6,192	.....	6,192	.....	.....	.....	.....
New Mexico.....	61,632	.....	61,631	.....	.....	.....	.....
Oregon.....	20,000	.....	20,000	.....	.....	.....	.....
Utah.....	25,000	.....	25,000	.....	.....	.....	.....
	19,668,736	419,173	20,087,909	3,179,589	.....	.....	.....

† Including 710 Indians.

RECAPITULATION.

	Total free population.	Slaves.	Representative population.
Free States.....	13,533,328	119	13,533,299
Slave States.....	6,393,758	3,175,783	8,299,226
District and Territories.....	160,824	3,687	.....
	20,087,909	3,179,589	21,832,625
Total free population.....	20,087,909	.....	20,087,909
Slaves.....	.....	3,179,589	3,179,589
	.....	.....	23,267,498
Ratio of representation.....	.....	.....	93,702

* [The aggregate Representative population gives, as the nearest approximate ratio for 233 members, (the number fixed by law,) a ratio of 93,702; but this ratio gives only 220 members—leaving the remaining 13 to be assigned to the States having the largest residuary fractions. The States which thus gain a member are designated in the above table by a *.]

The Locomotive.

A locomotive is the true type of the civilization and character of our age. We dig canals, make railroads, build steam and clipper ships, cover the land with a net work of telegraph wire, invent all sorts of labor-saving machines, analyze with searching alchemy soils, rocks and plants, to wrest from nature her most hidden mysteries, and task science and manual art to the utmost to facilitate in all possible ways our material progress. We act wisely in so doing, for by no other means can we so effectually and immediately promote the moral and intellectual improvement of our race. Look at the results of this material progress—the vigor, life and executive energy that follow in its train, rapidly succeeded by wealth, the refinement and intellectual culture of a high civilization. All this is typified, in a degree, by a locomotive. The combination in its construction of nice art and the scientific application of a power that our fathers knew not of, its speed surpassing that of the proudest coursers in his untamed fleetness, and its immense

strength, all are characteristic of our age and its tendencies. There was no need of a locomotive in former times. It would not have been in harmony with their modes of doing business or their habits of thought. To us, like the telegraph, it is essential, it constitutes a part of our nature, is a condition of our being what we are. Its invention was a necessity, and improvements will continue to be made upon it, perfect as it now seems, in accordance with the requirements of the public. It was fitting that a machine that has done so much to change the aspect and subserve the wants of the civilized world, should have a prominent place assigned it in the great world's exhibition at London. It is but a few years since—less than twenty-five—a large reward was offered for the construction of a locomotive that would draw less than twenty tons over a level road at the rate of twelve miles an hour. This achievement, poor as it may seem to those accustomed to see heavy trains, loaded with hundreds of passengers, sweep by at the rate of 30 miles an hour, was a great thing in its day, and

twenty-five years hence our boasted performances may seem equally timid, weak and slow. The *Boston Daily Advertiser*, noticing the locomotive on exhibition at the World's Fair, says:—

Among them is one called Lord of the Isles.—It is described as identical in its construction with an engine called the Great Britain, which is working on the Great Western Railway, and which when put upon the road attracted much attention by the remarkable performance of running at the rate of 70 miles an hour for 40 consecutive miles, carrying a load of 110 tons, exclusive of engine and tender. There are other engines of the same class on the Great Western road between London and Swindon. One of them is stated to have lately conveyed an excursion train, containing 1500 passengers, from London to Bristol, a distance of 118½ miles, in three hours. Engines of the same description are to be put on the line between Birmingham by which it is anticipated that the passage of this route between Birmingham and London will be made in two hours and twenty minutes, although the distance is much greater than by the London and North Western route—probably not less than 130 miles. The Great Western company is constructing coal wagons, weighing under 4 tons, to convey 10 tons of coal each, with which it is anticipated this large class of engines will draw 300 tons net over the various gradients of their line of road.

English Institution of Civil Engineers.

The paper read was "A Description of a Turntable, 42 feet in diameter, in use on the Bristol and Exeter railway," by Mr. I. J. Macdonnell, M. Inst. C. E.

It was stated that this table worked on a ball-pivot, and consisted of two central cast-iron arms or brackets, which carried at their extremities hollow wrought iron traverse girders for supporting the longitudinal timber beams, forming a framing on which were placed the rails—the outer ends being supported by other girders attached to the traversing wheels, which were three feet in diameter. It afforded a perfect and equal bearing throughout its entire length, not being depressed more than half an inch when the leading wheels of the engine struck the table, and an engine and tender, together weighing 40 tons, were turned by the driver and stoker in three minutes. Tables on this principle have been erected both at Bristol and Exeter, and the cost, with the foundation, did not exceed £400 each.

After the meeting, Mr. Penrose exhibited the spiral instruments recently invented and registered by him, called Penrose's "Screw Helicograph," or Logarithmic Spiral Compass, and Penrose and Bennett's "Sliding Helicograph."

In the latter instrument, with which volutes and other forms of the logarithmic spiral were drawn, a frame sliding upon a smooth bar was supported by a wheel, the axis of which being set at any given angle to the bar, produced by its obliquity the converging motion in a spiral arc.

The "screw helicograph," used for drawing a more limited series of these curves, received its spiral action from a nut fixed in the centre of a revolving disc, which communicated motion to a screw; carbonic paper being used for obtaining an impression of the path of the disc.

The paper read was "A Description of the mode of working an Inclined Plane, of 1 in 27½, on the Oldham Branch of the Lancashire and Yorkshire railway," by Captain J. M. Laws, R. N., Assoc. Inst. C. E.

The mode of working this incline was by a combination of locomotive power and gravity. It was at first proposed to be worked by a horizontal wheel, rope, and pulleys, with a locomotive engine and train at each end of the rope, so that one train might descend while another ascended the incline, but as this method appeared to be liable to many contingencies, by which the regular traffic would have been deranged, and the expense of locomotive power increased, a balance-weight was substituted for the descending locomotive, one line of rails being appropriated to it, and the other retained for the goods and passenger traffic. The balance-weight consisted of a heavy break van, and a number of ballast waggon filled with sand; but in place of the latter, loaded coal waggons were frequently used, as there was a coal-pit at the top of the in-

cline, and this was found to be a most economical and advantageous way of working the coal traffic. When the bill was in parliament, it was stated in evidence, that there would be great danger in descending so steep an inclination; but the experience of seven years—during which period the rope had broken several times, and the break van had once been allowed to run down by itself, without doing any serious injury—had proved this opinion to be erroneous. The ordinary passenger trains ascended and descended the line at from 20 miles to 25 miles per hour, the mode being to stop at the end of the incline to attach the rope, then back the engine so as to draw the balance train off the scotch at the top, when the steam was put on, and the train ascended. This mode of working had been attended with the most perfect success, and it was thought that if more attention was paid in the construction of railways, to what could be accomplished by gravity and impetus, in combination with locomotive power, a great saving in the original cost of the line would be the result.

The wire ropes which had been used were manufactured by Messrs. R. S. Newall & Co., each rope was rather more than one mile and a quarter in length, 3½ inches in circumference, weighing 126 cwt. and costing £316. Their average duration was about two years and four months.

The Civil Engineer, England's Master-Spirit.

Let us commence at home, and see what appearance this island of ours puts on at the peaceful reunion of nations. Is it Britannia, with her trident and plumed helmet, and the lion recumbent at her feet, or John Bull's portly form, carrying weight in every limb, and determination, not mingled with prejudice, from the crown of his broad-brimmed hat to the soles of his top-boots? Far otherwise. Some traces of those popular types of our nationality may indeed be traced, but England has greatly changed. Her genius is mechanism, her master spirit the civil engineer, her tendencies—to relieve labor from its drudgery, and delegate to iron, to steam, and to the other powers of the inanimate world, as much as possible of the burden of toil. If you doubt this, go and look at the great department of machinery in the crystal palace; watch that vast collection of interesting objects, every portion of which lightens immeasurably the burden of life, and releases hundreds of hands from the most irksome forms of industry. You will there see how mechanism is extending her dominion over the whole empire of labor; how she rises in textile fabrics to the manufacture of the most delicate and intricate lace; how from wood she aspires to fashion iron into the most exact proportions; how, with steam as her handmaid, she works the printing press and navigates the ocean, and outruns the swiftest animal in her course. Turn into the agricultural implement department, and you will find everything now done by machinery. By it the farmer not only sows and reaps, but he manures and hoes. By it he thrashes out and grinds his corn, and prepares the food for his cattle. He can even drain by machinery, and it is difficult now to find a branch of his business into which it does not largely enter. In our manufactures, the mechanical genius of the country reigns supreme. Those beautiful fabrics are nearly all the evidences of its power. Soft goods and hardware are equally indebted to it, and in its presence the unaided efforts of handicraftsmen appear small and insignificant indeed. It travels everywhere, and invades every compartment, even that of the fine arts, in the court dedicated to which some of the most conspicuous contributions as specimens of printing in oil, and attempts to reproduce, by mechanical means, the sentiment and inspiration of the painter.—*Times*.

Statistics of Coal Gas used in England.

The manufacture and consumption of coal gas alone is a wonder, in a commercial point of view. In England, 6,000,000 tons of coal are annually employed for its manufacture; and from £12,000,000 to £15,000,000 expended in its production. In London alone 500,000 tons are consumed, producing 4,500,000 cubic feet of gas, and 500,000 chaldrons of Coke—125,000 chaldrons of which are consumed in heating the retorts, and the remainder sold as fuel. The length of mains in London is 1600 miles,

and the capital employed £4,000,000.—*London Mining Journal*.

Whitney's Atlantic and Pacific Railroad.

Mr. Whitney's recent letter to the *London Times* has caused offers to be made to him to supply whatever capital he may desire for the commencement of such a road as that which he proposes, either through the United States or Canada. He represents that there is a feasible route through a very large extent of good agricultural country, suitable for grain crops and pasture, by which starting from Quebec, the Pacific might be reached at Fuca straits, opposite Vancouver's Island. All the parties interested in Canada are therefore looking to the possibility of promoting such a scheme. In case that, owing to the rapid filling up of the Government lands in the United States, the course first suggested by Mr. Whitney should become impracticable. The English people would rejoice to see the enterprise carried out either through the American or British territory, and the desire of all who have emerged from the wretched delusions of national selfishness, would be that it should go by the best and shortest way. If this, however, is prevented by difficulties on your side, I entertain little doubt that the plan will be tried with regard to Canada, and will receive sufficient encouragement.

The individuals by whom the offers in question are understood to have been made are practically acquainted with railway matters—to which indeed they owe the possession of large fortunes—and it is said that in consideration of a share in the ultimate results of the enterprise, they propose not only to supply the money necessary for the first ten miles, until the lands could be sold for reimbursement, but also to pay a bonus. This proposal applied equally to the scheme as regards the United States, or to any efforts for carrying it through Canada. Mr. Whitney, however, has resolved, it is stated, to let it rest for the present, as its acceptance previous to the next meeting of Congress could in no way hasten the commencement of the undertaking.—*London Correspondence of the N. Y. Commercial Advertiser*.

If Mr. Whitney represents that there is a good route for a railroad to be found, by starting from Quebec and running to Fuca straits, he asserts what he knows to be untrue. Every body knows that a direct line from Quebec to the Pacific would run through a country utterly impracticable for a railroad. A greater part of the route would be of the most sterile and uninviting character. It would pass to the north of Lake Superior, through a country made up of lakes and mountains; a region of almost perpetual snow.

The idea that Mr. Whitney has received any propositions from English capitalists to aid his scheme through Canada is as preposterous, as is his plan. Englishmen cannot be induced to take hold of our best projects. They will not take one cent of stock in our best lines. They will not even subscribe to the Great Western of Canada, one of the most promising projects on this side of the water. They are not therefore going to take up Mr. Whitney's moonshine, for a road across the continent, to follow a route somewhere between Lake Superior and the Arctic ocean. Not they.

The object of Mr. Whitney's going to Europe was a mere ruse, to operate upon Congress at its next session, which is to be composed very largely of new members. The last Congress got completely weary with Mr. Whitney and his importunities. He and his scheme were by common consent pronounced humbugs. During the recess between the meeting of the old Congress and the new, Mr. Whitney, unable in the meantime to do anything for his project in this country, very sagaciously took himself out of the way. And as a final resort, has taken up the last trick of paltry politicians, that of attempting to act upon our prejudices by the assumption of "British interference,"

This is too flimsy a pretext to blind our eyes at the present time. Mr. Whitney ought to know by this time, that he cannot get Congress to sanction his project. It is now impracticable by his own showing. His scheme is chimerical, and his motives distrusted. His day for success has long since passed, and the sooner he discovers his true position the better.

Illinois.

Galena and Chicago Union Railroad.—The annual meeting of this company was held at Chicago on the 4th inst., and the following gentlemen were elected directors for the ensuing year: W. L. Newberry, Charles Walker, Jas. H. Collins, Wm. H. Brown, John B. Turner, Thomas Dyer, B. W. Raymond, George Smith, C. S. Hemstead, Thos. Drummond, E. S. Wadsworth, D. A. Knowlton, Thomas D. Robertson.

At a subsequent meeting of the board of directors, John B. Turner, Esq., was elected president, vice Wm. B. Ogden, resigned.

From the engineer's (J. Van Nortwick, Esq.,) report of the operations of the road the past year, we give the following abstract:

On the first division, from Chicago to Fox river, there has been expended on account of construction during the year, the sum of \$32,329 98. The total expenditure for this division on construction account, up to May 1st, 1851, has been \$436,028 12. The estimated expenditure during the present year on construction account, is placed at \$30,000.—There has also been expended during the year

For block No. 1, Original Town, Chicago.....	\$60,543 35
For materials for extension of track....	57 01
	\$60,570 36

The expenditure the present year for the construction of a drawbridge over the North Branch of the Chicago river, and for the extension of tracks through New North Water street, and the improvement of block No. 1, is estimated at \$20,000.

The stock of furniture now upon the road consists of one ten ton locomotive, three fifteen ton locomotives, and the equivalent of one hundred and eighty one single cars.

BUSINESS OF THE ROAD.

The business upon the road the past year presents results of a highly gratifying character, the receipts having exceeded the estimate \$12,685 78, or about eleven per cent. The income for the year closing the first day of May has been, from

Passengers	\$56,472 69
Freight	68,576 67
Mails	2,636 42
	127,685 78

The expenses in the operating department for the same time have been... 48,904 24

Net earnings..... 78,781 54

Whole number of passengers conveyed upon the road during the same time, 68,782.

Tonnage of freight westward.....23,244 tons.
" " eastward.....23,875 "

Total tonnage.....52,119 "

The whole number of miles run by locomotives, including gravel and wood trains, was 86,118 miles, and the whole expense of operating the road has been 56-8 cents per mile run.

The receipts of the road for the months of February, March and April last, compared with the amount received in the same months in 1850, (the first three months the road was in operation to Elgin) show an increase of about 88 per cent. This increase, however, is owing in part to additional facilities afforded, inducing business, and in part to the construction of a branch road, which has gone into operation since that time.

The Aurora Branch road, connecting with this road at the junction, thirty miles from Chicago, was completed as far as Aurora, 13 miles, about

the first of November. The whole business of this road has been increased about 25 per cent by the opening of this branch. Aurora and Elgin are equi-distant by railroad from Chicago. The receipts of the road for the six months ending on the first day of May (the time the branch has been in operation) show that the business to and from Aurora has nearly equalled that to and from Elgin.

The receipts upon the first division of the road the present year may be safely estimated at, from

Passengers	\$65 000
Freight	80 000
Mails	3 000
	148 000

The expenses of operating the road for the same time..... 53,000

Leaving net receipts.....\$95,000

The estimated cost of the road from Elgin to Belvidere, with T rail, including furniture for that part of the road is.....\$540,000
The same from Belvidere to Rockford.... 270,000

Cost of second division, exclusive of interest account.....\$810,000

That part of the division lying between Elgin and Belvidere was placed under contract in September, 1850. The first six miles are to be completed by the 15th day of June; the next six miles by the 15th day of July; the next twelve miles by the 15th day of August, and the residue of the line to Belvidere by the 15th day of September next.

Contracts for ties, iron and the necessary engines and passenger cars have been entered into. The expenditures on this division, up to the first of May have been \$173,338.

Mr. Van Nortwick estimates the entire business of the road for the first year after it shall have been completed to Rockford at.....\$275 000
Cost of operating same time, about..... 100,000

Making the net earning.....\$175,000

The whole cost of the road by that time will probably have reached—

First division	\$500,000
Second division	875,000
Chicago extension and depot, etc.....	100,000
	\$1,475,000

This would show a net income of about 12 per cent on the cost, the first year after the road was in operation to that point.

The length of the third division, by the most direct line surveyed, is 77 miles. Two lines have been surveyed from Rockford to Freeport, and four lines from the latter place to Galena. These four lines, however, resolve themselves into two—one via Scales' Mound, and the other via Savanna.—The maximum grades by the former are from fifty to sixty feet, and by the latter about 40 feet.

Maine.

Androscoggin Railroad.—A special meeting of the stockholders of the Androscoggin railroad was recently held at Livermore Falls. The condition of the financial affairs of the company was fully and clearly presented by the directors, and the necessity of an additional subscription to the stock ably urged by several gentlemen. Various plans were suggested, but the result was the adoption of a resolution authorising the directors to issue a preferred stock to the amount of \$65,000, at 5 per cent semi-annual interest, the subscription to which shall not be binding until \$50,000 of a reliable subscription are obtained. This amount will be amply sufficient, together with the bonds already issued, to complete the road to Livermore Falls. It is presumed that the stockholders will take the amount forthwith, and thus secure the completion of the road, a result which cannot be obtained without such action on their part. The directors announced distinctly to the meeting their determination not to lay down a rod of the rails until the above amount of stock is provided for.

**For the American Railroad Journal.
Ohio Railroads.**

H. V. Poor, Esq.

Sir,—A company was a few years since chartered by the Legislature of Ohio, to make a railroad from Hillsborough, Highland county, to Belpre, in Washington county, opposite to Parkersburg.

This road was called the Cincinnati and Belpre road, and was intended to unite the cities of Cincinnati and Baltimore, by the following routes and proximate lengths:—

1. Cincinnati and Hillsborough Railroad. 60 miles.
2. Cincinnati and Belpre from Hillsborough.....125 "
3. North Western Virginia by Parkersburg, and the Little Kanawha.....120 "
4. Baltimore and Ohio railroad from Tygarts Valley, by Cumberland.....271 "
| Total..... | **576 "** |

Of these the 1st link will be in operation in October next, the 4th in June next.

The 2nd has made a small beginning at construction, upon a wrong line, and the 3rd is about opening its subscription books.

The 2nd link, the Cincinnati and Belpre, has been under consideration and survey for over 14 years; the first survey under the authority of the state of Ohio having been made in 1836.

It was expected by everybody that the Belpre road would be commenced at Hillsborough, and continued eastward, continuously outwards from Cincinnati, forming a working and profitable road, growing longer and longer, and more and more profitable, with every rail laid down, until the point of Belpre should be gained, with a working road in full operation, and there crossing the Ohio at Parkersburg, meet another working road, the Baltimore and Ohio, brought forward by that time to the same point.

This plain business course, dictated by eastern experience in railways, and expected by the common sense of the community, having been abandoned in a recent contest about details, into which the parties in interest have madly plunged, it is hard now to say what the course taken with this important line will be.

Cincinnati has acted upon the matter thus far, she voted \$150,000 to the Belpre company, conditioned only to be expended continuously eastward, from Hillsborough; the city undertaking a leading part of the burden (furnishing the iron,) to bring up the road to that point, 60 miles.

It turned out unfortunately, though in any other country it would have been considered a happy circumstance, that the leading Valley of Point Creek pointed directly from Chillicothe towards Hillsborough, and offered a remarkably favorable line for the through road to pass those points.

Of five surveys made over this ground, each engineer had selected this leading valley, this natural route, for the railroad line, and for fourteen years after the first survey by the state, no other was thought of or named.

Within a year or two, an indirect and costly line has been brought into notice by a series of manoeuvres which would do credit to any political campaign, and was ultimately adopted by the Belpre company.

Out of this singular proceeding a warm contest has arisen, in which the parties engaged have diverged wider and wider apart, until the Belpre company have entirely lost sight of the objects for which they were originally chartered, and have bolted from the track in the most eccentric manner.

The position of the railway project through southern Ohio, has now taken the following extraordinary shape:—

1.—The Hillsborough company have resolved to extend their road from Hillsborough to Chillicothe, by the natural route along Point Valley. Total distance from Cincinnati to Chillicothe, 98 miles.

2.—The Belpre company, determined to avoid Hillsborough at every hazard, (even if their whole scheme should be wrecked,) have begun to work between Chillicothe and a little village called Greenfield, several miles out of the true line.

Arrived there, they hesitate what to do, and have two plans—first, to run an independent line to Cincinnati (a duplicate line,) by the winding valley of Stone Lick, long since tried with instruments and rejected; second, to run their line to Dayton, abandoning Cincinnati!

3.—The Belpre company looking eastward, and hearing Mr. Swann, the President of the Baltimore and Ohio railroad, declare that for good reason shown, Parkersburg must be the terminus of the Baltimore line, as it was always intended to be.

The Belpre company, I say, finding Parkersburg fixed as the point of junction on the Ohio, as was expected always, and which they were chartered to reach, instead of being pleased, fly off tangentially and enter into arrangements to run the road to Wheeling, by way of Marietta, and connect with Philadelphia through the Hempfield line!

There then we have a pretty piece of entanglement, unequalled out of Ohio, a road chartered to connect Cincinnati and Baltimore, suddenly shifts its western terminus to Dayton, and its eastern to Philadelphia!

So things stand now, if they stand at all, and of the further curiosities which may arise, you will be duly apprized, and you will scarcely find funnier railroad matters to

CHRONICLE.

Ohio and Pennsylvania Railroad.

The final letting of the Ohio and Pennsylvania railroad took place at Mansfield on the 12th inst. The work put under contract extends from Wooster, by Loudonville and Mansfield, to the Cleveland Columbus, and Cincinnati railroad at Crestline, near Galion, a distance of 53 miles. The whole road is now under contract from Pittsburgh to Crestline, 185 miles, and it will no doubt be completed next year. Steadily and firmly the board of directors have carried out the policy which they announced when the enterprise was undertaken, and they can now look forward to the speedy completion of the road. From the first they determined that the work should be a symmetrical whole, and not a series of discordant parts; and to the Chief Engineer was confided the duty of terminating the location, so that no local interest might vary the line from that which the surveys showed to be the best.

In their last annual report, the board expressed the expectation that the line would be opened for use from Pittsburg to Beaver and New Brighton in July, and to Alliance and Massillon in the autumn of this year. The laying of the track progresses rapidly, and everything indicates that the road will be ready at the specified time. But little more than a year has elapsed since the work was begun between Pittsburgh and Beaver, and it has been pressed forward with untiring energy in the face of many difficulties, and is now nearly completed for that distance, graded for a double track, and bridged with substantial stone arches. The road is unusually straight and level, and the track very substantial.

The work recently put under contract on the western division is generally light, and has been let on favorable terms. The bidders were numerous, and the competition great. Many of the successful bidders are old contractors on the line.

Connecticut.

"The legislature of Connecticut have granted a charter for a railroad from the line of the New Haven and New London road at Westbrook, to Norwich, a distance of twenty-six miles, through Essex on the Connecticut river to —; they have also given a charter for a road from Daysville on the line of the Norwich and Worcester road to the state line of Rhode Island, in the town of Killingly, a distance of six and a-half miles. When these two roads are completed the distance, by way of Westbrook and Norwich, from New York to Boston will be twenty-three miles shorter than the present route via Hartford and Springfield. The distance by this route (from Westbrook to Norwich) from New York to Boston is two hundred and fourteen miles—by the Springfield route it is two hundred and thirty-seven miles. The former being but three miles longer than the formerly contemplated air line route via Middletown, and having less grades and curves; by this Norwich route the time between New York and Boston will be reduced at least one hour. The distance will be regularly performed in seven and a half hours. It is understood that the Westbrook and Norwich company will be organized immediately, and the work be speedily prosecuted. The city of Norwich will probably become interested at least \$200,000, which, with private subscriptions already promised, will give ample means for the purpose. The Killingly road, six and a half miles, will also be constructed without delay."

Tennessee.

The principal railroad enterprises in progress in this state are—

1st—The Nashville and Chattanooga Railroad, extending from the Tennessee river at Chattanooga, to Nashville, a distance of 151 miles, with a branch to Shellyville of 8 miles, making the whole line 159 miles. We have frequently spoken of this work which is the leading enterprise of this state. Ample means are provided for its completion, which event will take place in the year 1852. The division extending from Nashville to Murfreesborough, 30 miles is finished, and in operation, and the grading of the whole line nearly completed.

2nd—The East Tennessee and Georgia railroad, extending from Dalton on the Georgia state road, to Knoxville, 110 miles. Twenty-one miles of this road is now in operation, and 60 miles more will be completed during the year; means for the balance of the line partially provided. The whole road will be completed in 1852 or '53.

3rd—The East Tennessee and Virginia railroad, extending from Knoxville to the state line of Virginia, a distance of 130 miles. Most of this road is under contract, and no doubt seems to be entertained that the state of Tennessee will aid in its construction at the next session of the Legislature. This is the connecting link between the Virginia and Tennessee, and the East Tennessee and Georgia roads, and cannot be brought into profitable use until the latter are completed. It will without doubt be completed simultaneously with the Virginia road.

4th—The Memphis and Charleston railroad.—But a small portion of the line of this road is in Tennessee, yet is regarded as a very important work for that state. It commences at Memphis, and runs by Lagrange, in Tennessee, Jacinto, in Mississippi; Decatur, Tuscumbia, and Huntsville, in Alabama, and strikes the Nashville and Chattanooga road at Crow Creek, in the latter lake, making an entire length of line of 281 miles. Nearly the whole amount of means necessary for this road are already secured, and the work of construction will undoubtedly be immediately commenced at various points, and prosecuted vigorously to its completion.

5th—The Nashville and Alabama railroad, com-

mencing at Nashville and running by Columbia to the Tennessee river, near Savannah, a distance of about 120 miles, for the purpose of forming a connection with the Mobile and Ohio railroad which approaches this point, and the Memphis and Charleston road. The friends of this road are now moving, and have already secured about one quarter the necessary amount of stock. The line traverses a very rich country, and the road is certain to be built without much delay.

6th—The Nashville and Mississippi railroad, extending from Nashville to the Mississippi river, at or near the dividing line between Tennessee and Kentucky, a distance of about 150 miles. We learn from good authority, that the construction of this road will be commenced as soon as a reasonable charter can be obtained. This is the last link to carry the road from Charleston and Savannah to the centre of the great Mississippi Valley, and is the natural prolongation of the Nashville and Chattanooga railroad to that river, and will doubtless receive efficient aid from the latter company.

7th—The Louisville and Nashville railroad, connecting the above cities by a line of about 180 miles. Two routes for this road in Kentucky are proposed, one by way of Glasgow, called the upper route, and the other by way of Bowling Green. Towards this project, the city of Louisville has subscribed \$1,000,000, and there can be no doubt that the necessary balance would be made up by the counties along its line. It traverses a country of great fertility, and there can be no doubt of the speedy completion of this road. It will soon be the only link wanting to unite the roads of South Carolina and Georgia, with these of Ohio and Indiana.

8—The Nashville and Henderson railroad, connecting the above points by a line of about 130 miles. The construction of this road is very problematical. The chances are against it, as a road will at all events be built from Nashville to Bowling Green, the head of Slackwater Navigation on Green River, by which produce can at all times be cheaply forwarded to Evansville, the leading town of the lower Ohio.

9th—The Cleveland and Chattanooga railroad. The object of this road is to connect the East Tennessee and Georgia railroad with the Nashville and Chattanooga and the Georgia roads, by a line of about 30 miles. A company has been organized for the construction of this road, and there can be no doubt of its speedy construction.

10th—The Winchester and Huntsville railroad. We understand that a large portion of the stock, necessary to build this road has been subscribed, and that there is every probability of its construction at no very remote period. It will constitute an important link between the Nashville and Chattanooga and the Memphis and Charleston railroad. Its length will be about 60 miles.

11th—The Mobile and Ohio railroad. This road passes entirely through the western part of the state in a northerly and southerly direction. Its length of line in Tennessee is about 119 miles. Only the southern portion of this road, lying in Alabama and Mississippi is under construction, but there can be no doubt of the rapid progress of the work north. The people of that portion of Tennessee through which it will run are amply able to build their part of the line, and we presume they will do so, as soon as the progress of the work northward reaches them.

The above list gives the following aggregate of the number and length of lines of roads which are

Nashville and Chattanooga.....	159 miles.
East Tennessee and Georgia.....	110 "
East Tennessee and Virginia.....	130 "
Memphis and Charleston.....	281½ "
Nashville and Alabama.....	120 "
Nashville and Mississippi.....	150 "
Louisville and Nashville.....	180 "
Nashville and Henderson.....	130 "
Cleveland and Chattanooga.....	30 "
Winchester and Huntsville.....	60 "
Mobile and Ohio in Tennessee.....	119½ "

1.470 "

From the above total should be deducted about 500 miles, for the portions of the above lines lying in neighboring states. This will leave about 1000 miles of road in Tennessee, which are either at the present time, or will soon be in progress, a pretty large extent for a state that has just commenced these enterprizes. Other roads will undoubtedly soon be projected, till they shall be found at convenient distances over the whole state.

A meeting of the citizens of Farmington was held a few days since, to hear the report of Messrs. Cushman and Currier, who had been employed to make a survey for the route of a railroad from Farmington to some point on the Androscoggin road. These gentlemen have surveyed a route commencing near Livermore Falls, on the Androscoggin road, via Chesterville, to Farmington Centre, a distance of 16 miles. They propose to construct a railroad upon this route, and furnish all the necessary facilities for running cars and engines over it, for \$200,000. Whether the citizens of Farmington will raise this amount, is a matter of uncertainty.

Ohio.

"This link to connect Pittsburgh and the Pennsylvania railroad with the Stubenville and Indiana railroad, is but forty miles in length, and can be made, it has been estimated, at a cost of eight or nine hundred thousand dollars. Once made it is undoubtedly true, as a single glance at the map will show, this link completes a chain of roads which must successfully compete with the Central Ohio railroad, and command the trade of Southern Ohio, which may find its way to the Baltimore and Ohio road, and will certainly if not intercepted by this work.

Mod River and Lake Erie Railroad.—The stockholders of the Mod River and Lake Erie railroad company, held their annual meeting in this city yesterday, and the following persons were elected directors:—

The Directors appointed by the Governor on behalf of the state are, R. E. Runkle, E. Smith, and John Ewing.

The annual report will be published in a few days. It shows the receipts of the year just ended to be \$442,926, which exceeds the receipts of the previous year by \$81,761. The receipts of 1851, up to the last monthly returns on the 1st of June, show an excess of \$6,946 15 over the corresponding month of last year.—*Sandusky Register*.

This road, which is a branch or feeder to the Western Vermont road and connecting it with the Troy and Boston road, is to be put immediately under construction. A meeting of the directors was held at North Hoosac, on Friday the 6th inst., at which Reuben Clark, Esq., was chosen President, and Palmer S. Shreves, Vice-President, Geo. M. Selden, Secretary and Treasurer. The following are the directors:—Reuben Clark, P. S. Sherever, David S. McNamara, O. R. Burnham, Samuel G. Doughty, John N. Willard, Henry Tator, William Orr, George M. Seldon, Russell Sage, Daniel Robbison, A. B. Olin and Elias Johnson.

The *Troy Whig* in speaking of this road, says:—This road, although a short one of five miles, is a very important road to our city, as well as to the valley of Western Vermont. It is the connecting link between the Western Vermont railroad and the Troy and Boston railroad—securing to Western Vermont an easy and expeditious outlet to market for her rich minerals, marble and manufactures, and secures to our city the trade from the best sections of Vermont, and by the connection at Rouse's Point, the trade on the Ogdensburg road. When this short road of five miles is completed, which we are informed is to be pushed through this season, our city will be connected by railroad with the northern towns of this county, with Bennington, Manchester, Rutland, Brandon, Middlebury, Burlington and Swanton, in Vermont, and with Ogdensburg and Montreal railroad at Rouse's Point, and all the intermediate towns in the beautiful valley of Otter Creek, and on the east shore of Lake Champlain.

Louisville and Frankfort Railroad.—We are glad to learn that the Louisville and Frankfort railroad is already doing a business far exceeding the expectations of the directors. The passenger trains are crowded both ways every day, and the receipts for passengers and freight, since the cars have been running all the way to the Kentucky river, have ranged from \$300 to \$400 daily, and in some instances even exceeding the latter sum. Since the 1st instant the receipts for passengers alone have amounted to \$2,495 40.

The wire bridge at Frankfort is so far completed that passengers on yesterday's cars crossed it on foot. This saves time and trouble, as heretofore they had to be ferried across the river. The bridge will be entirely completed and ready for the passage of the cars in some two or three weeks.—*Louisville Courier.*

Crawfordsville Railroad.—The *Lafayette* (Ind.) *Journal* says:—"Within a few days one thousand tons of the iron for the Lafayette and Crawfordsville railroad has arrived, and the company will commence laying track next week. It is a beautiful T rail of 55 lbs. per yard, American manufacture. On the 7th of May the entire purchases were completed in Wales of the rail for the Lafayette and Indianapolis road. It is a T rail of 55 lbs. per yard. The company expect to be in reception of cargoes at Lafayette, in August, and to have thirty miles of track laid this fall. The Michigan Central railroad, under the auspices of the New Albany and Salem company, are just completing a survey from Michigan city to Lafayette. Their corps of engineers having commenced at Michigan city have reached this neighborhood. The Michigan

Illinois.

Chicago and Galena Railroad.—Mr. Ogden, in consequence of the great amount of business thrown upon him by the lamented death of his brother-in-law, Mr. Jones, will retire from the board; and we have no doubt but John B. Turner Esq., will be the next president of the board, as the unanimous choice of all the stockholders. He has ever been the working man of the company.—*Chicago Democrat.*

Schenectady and Troy Railroad.—The annual meeting of the directors of the Schenectady and Troy railroad, held on Monday, June 9, 1851, organized as follows:—

Directors.—Messrs. Elias Plum, John N. Willars, Henry Ingraham, John S. Ide, John Paine, Hiram Smith, Thomas Symonds, Harvey Mosher, L. McChesney, M. I. Townsend, Russell Sage, Harvey Davis, and L. H. Tupper.

The following officers were unanimously re-elected:—

President, Elias Plum; Vice President, Russell Sage, Secretary, Hiram Smith.

Hartford Railroad Company.—At a meeting of the Hartford, Providence, and Fishkill railroad company, held on the 7th, a vote was passed authorizing the directors to negotiate with the Providence and Plainfield company, for a union of the two companies. Both directors, therefore, are fully empowered to make the necessary arrangements for a union, which will be so greatly for the interest of each.

Ware River Railroad Company.—This company has been organized at Barre, on the 18th instant, by the choice of the following gentlemen as directors, viz. :—Thomas W. Williams, New London; Jacob B. Merrick, Palmer; Geo. H. Gilbert, William Hyde, Ware; William Mixer, Hardwick; James B. Bardwell, New Braintree; John Smith, Seth Caldwell, Barre; Geo. Williams, Hubbardston; Artemas Lee, Templeton; Milton J. Morse, Winchendon.

The directors afterwards organized by the choice of Artemas Lee, President, William Mixter, Clerk, and William Hyde, Treasurer.

The route is to be surveyed immediately, preparatory to putting it under contract.

Genessee Valley Railroad.—By a survey of this road just completed, the route leaves Rochester on the west side of the river, and crossing it at the rapids near the Feeder Dam—thence up the Genesee to Genesee, crossing over to mount Morris, thence up the Kishaqua to Portage, in Allegany county—a distance of 49 miles. The maximum grade to Mount Morris would give an ascent of 29 feet per mile. The cost of construction, exclusive of depot accommodations, for 32½ miles will not exceed \$15,000 per mile, or an aggregate \$487,500. The balance, or 16½ miles, \$20,000, or a total of \$333,000. Whole cost from Rochester to Portage, \$817,500. For the sake of safety the cost is assumed to be \$1000,000. The distance from Rochester to New York by several routes, are put down as follows:

By way of Canandaigua and Jefferson	
railroad and E. Road at Ramapo....	370 miles.
Genesee Valley, via Avon & Conhocton	371 "
" " " "	
" " Dansville.....	386 "
" " Junct. with Buffalo	
N. Y., at Ramapo	405 "

The share of the city was the cost of building the road to Avon, amounting to \$295,000. If Rochester does this, the people south of Avon will supply the balance of the funds for completing the road.

Knox & Shain,

MANUFACTURERS OF
LEVELS, TRANSITS AND SURVEYING
COMPASSES.

No 72 Dock st. first door south of Walnut, west side,
PHILADELPHIA.

THE Fourth Annual Exhibition of AMERICAN MANUFACTURES, by the MARYLAND INSTITUTE for the Promotion of the Mechanic Arts, will be opened in Baltimore on the 20th October, 1851.


The Exhibition will be held in the SPLENDID NEW HALL of the Institute, (fronting on Baltimore street) now being rapidly completed. Their edifice is centrally situated, chaste in its architecture, solid in its construction, and is by far the largest and most complete building in the United States, devoted to the Mechanic Arts. It may be added that this building is 355 feet long by 60 in breadth, with an average height of 68 feet, containing some twelve apartments, the largest of which is 255 feet by 60, and that the cost will be over \$70,000.

To this Exhibition, the Managers ask the attention of all engaged in industrial pursuits throughout the country, and cordially invite them to contribute specimens of their best productions for public inspection, and to compete for the prizes offered by the Institute. These prizes consist of GOLD and SILVER MEDALS, DIPLOMAS, etc., which were last year distributed as follows:—Gold Medals, 16; Silver ditto, 90; Diplomas, 60; besides 85 articles of Jewelry, etc., to ladies. Fair play will be scrupulously observed towards all, and every facility of Steam power, shafting, fixture, labor, &c., &c., will be amply provided free of expense. The machinery will be under a special superintendent, and a fine display of it is looked for. The last exhibition of the Institute was visited by more than 40,000 persons, and with their vastly improved accommodations and alterations, this number will be doubled at the coming display, embracing many Virginians, Pennsylvanians, and other strangers from the South and West.

Joshua Vansant, President.
Ed. Needles, } Vice Presidents.
F. A. Fisher, }
Samuel Sands, Rec. Sec'y.
Wm. Prescott Smith, Cor. Sec.
F. J. Clare, Treasurer.

BOARD OF MANAGERS.

Ross Winans,	Simeon Alden,
P. S. Benson,	J. T. Watson,
Josiah Reynolds,	W. Robinson,
Thomas Stowe,	Wm. A. Boyd,
Thos. J. Lovegrove,	Adam Denmead,
A. Flannigain,	C. W. Bentley,
E. Larrabee,	Geo. R. Dodge,
John F. Davis,	Saml. E. Rice,
Wm. H. Keighler,	John F. Meredith,
Richard Edwards, Jr.,	W. Abrahams,
Wm. Bayley,	Thos. Trimble,
R. Eareskson,	Chas. Suler.

() The last nine in *Italics* are the Committee on Exhibition.)

The Hall will be opened for the reception of goods on MONDAY, 13th October; on the next Monday, 20th, at 7 P. M., the Exhibition will be formally opened to the public, and will positively close on Wednesday, 19th November. Articles for competition must be in the Hall by Thursday night, Oct. 16, unless delayed in shipment after starting in ample time.

Those who intend depositing, will give the Committee or the Agent, notice as early as possible, stating the nature of the goods, and probable amount of room required, to exhibit them to advantage.

Circulars, containing a view of the new Hall and the full regulations of the Committee, with special information, if required, may be had promptly, by addressing the undersigned, or the Institute's Agent, J. S. Selby, Baltimore. *post-paid.*

ADAM DENMEAD,
Chairman Com. on Exhibition for 1851.

Wilmington and Manchester Railroad.

\$300,000 Seven per cent. Mortgage Coupon Bonds.

SEALD PROPOSALS will be received by the subscribers, until THURSDAY, the 10th day of July next, for three hundred thousand dollars of the first and only Mortgage Bonds of the Wilmington and Manchester Railroad Company, bearing interest at the rate of 7 per cent. per annum; principal and interest redeemable in the city of New York; the principal on the 1st June, 1866.

The Bonds are in sums of \$1000 each, with coupons payable at the Merchants' Bank, New York, on the 1st December and 1st June in each year, convertible into the capital stock of the company, at the option of the holders.

They are issued under acts of the Legislatures of North and South Carolina, secured by a Mortgage or Deed of Trust, to Edward Sandford, Esq., of New York, in trust for the holders of the Bonds.

The Deed of Trust covers the entire line of road completed and to be completed from Wilmington, in N. C., to Manchester, in S. C., a distance of 162 miles, costing, when completed with a heavy T rail, and equipped, \$1,600,000. The extraordinary adaptedness of the country to the construction of a railway accounts for this low cost.

The Trustee is empowered, in case of 60 days' default in payment of principal or interest, to take possession of the entire line of road, with its equipments, stations, income, franchise, &c., the same to sell, at his discretion, to the highest bidder for cash to pay arrears of principal or interest.

The whole amount of bonds authorized to be issued by vote of the stockholders, at a meeting called for that purpose in April last, and an order of the Railroad Board, is \$600,000, to raise means to pay the residue of the iron rails and equipments, only \$300,000 of which are now offered for sale.

The Company will owe no other debt when the road is completed.

This road will prove an important link in the great chain of railroads from Boston, New York, and Philadelphia, to New Orleans, connecting at Wilmington with the Raleigh and Wilmington railway, now in successful operation at Manchester, with the great South Carolina railroad leading from Charleston, in the direction of Montgomery, Alabama, now in the receipt of near a million of dollars annually from its business; will avoid the present disagreeable sea voyage from Wilmington to Charleston, shorten the travel to New Orleans one day's time, facilitate the mails, and will bring the South in more immediate and direct communication with the North.

The position of this road, its connections North and South, its easy grades, (none over thirty feet to the mile,) freedom from curves, and cheap construction, is such as to put it beyond the competition of any other line of road, for the immense inland travel between the North and New Orleans.

The greater part of this road traverses the most populous and fertile portion of South Carolina, producing cotton, corn, &c., in great abundance. Its local business alone will support it handsomely.

The census of 1850 shows that the district of country which will be tributary to this road, and dependent on it for transportation to market, produced in 1849 seventy thousand bales of cotton, of an average weight each of 450 lbs.

The Company has one million of available stock subscribed, most of which has been paid in and applied to construction, to which can be added, at any time, at the option of the company, \$200,000, subscribed by the state of North Carolina on certain conditions.

It is estimated that the net annual profits will reach 12 per cent. per annum.

About one half of the entire line has been graded and bridged, the cross-ties being in the course of delivery and will be ready for the iron rails immediately.

The entire line is under contract for grading and bridging, and in a forward state towards completion.

Six thousand two hundred tons iron rails, T pattern, have been purchased and are in the course of delivery.

About \$700,000 has already been expended in

construction, including payment for the rails purchased.

It is expected that about 80 miles from Manchester East will be completed and in operation in the fall of this year, and the entire line to Wilmington early next year.

The management of this road is in highly respectable and competent hands. No work in the South undertaken or projected meets with more public favor than this.

For further and more particular information we refer to a printed "Exhibit" giving full details of the road and its affairs, which contains a Map of the line with its many connections, copies of the Bond and Mortgage, opinion of Counsel, &c., prepared by Gen. W. W. Harlee, President of the Company, which may be obtained on application at the office of the company, at Washington, N. C., or of the undersigned, by mail or otherwise, with any other information desired.

We deem the security a desirable one. The States of North and South Carolina, and the various corporations chartered within her limits, which have been borrowers of money, have uniformly, and under the most adverse circumstances, promptly met their pecuniary engagements. Public sentiment in these states has always taken high ground in regard to punctual fulfilment of public and private pecuniary obligations.

The \$300,000 will be disposed of absolutely and without reserve to the highest bidder.

Sealed proposals, for any amount not less than \$1000, will be received at the office of the undersigned until 3 o'clock on the 10th of July, proximo.

Proposals to be addressed to WINSLOW, LANIER & Co., 52 Wall Street, New York, endorsed "Proposals for W. and Manchester Railroad Bonds."

Parties whose bids are accepted will be required to pay twenty per cent. upon the amount awarded to them upon being notified of the acceptance of their bids, and the remainder in equal amounts on the first day of September, October, November and December next, but any party will be at liberty to pay in full at once if desired. Interest will commence from the day of payment.

WINSLOW, LANIER & Co.,
52 Wall St.

AMERICAN RAILROAD JOURNAL.

Saturday, June 28, 1851.

Stock and Money Market.

Money for speculative purposes is not so abundant as at our last report. The immense shipments of gold cannot but effect the market for the present, though the receipts exceed shipment. In the ordinary business channels money continues easy, but railroad securities are negotiated with more difficulty. There seems to be no cause of apprehension on account of the continued tightness of the market, which is probably merely temporary. Every branch of industry, save our iron and cotton manufacturing interests, are remarkably prosperous. The wheat crop, one of our great staples, is abundant beyond all former experience. Our other leading crops promise equally well.—While our production is so enormous, we cannot experience any very disastrous revulsion.

The receipts of all our great avenues of travel and transportation continue to show a steady increase. The earnings of the New York canals already exceed \$1,000,000, being a gain of over \$200,000, or 20 per cent. over those of last year, up to the same period, though there has been a reduction in the rate of tolls of at least 25 per cent. on many of the leading articles.

The Evening Journal gives the annexed statement of the quantity of flour, wheat, corn and barley, left at tide water during the 3d week in June, in the years 1850 and 1851, as follows:

	Flour. bbls.	Wheat. bush.	Corn. bush.	Barley. bush.
1850....	74,986	35,050	228,719	40
1851....	95,849	43,001	284,502	2,697
Increase.	20,863	7,951	55,783	2,657

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 22d June, inclusive, during the years 1850 and 1851, is as follows:

	Flour. bbls.	Wheat. bush.	Corn. bush.	Barley. bush.
1850....	573,310	197,824	921,752	110,625
1851....	1,095,025	490,003	2,570,069	98,416
Inc....	491,003	292,179	1,658,317	dec.12,209

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 22d June, inclusive, during the years 1849 and 1851, is as follows:

	Flour. bbls.	Wheat. bush.	Corn. bush.	Barley. bush.
1849....	664,767	364,105	1,723,884	94,081
1851....	1,065,025	490,104	2,570,069	98,416
Increase.	400,258	125,898	846,185	4,335

By reducing the wheat to flour, the quantity of the latter left at tide water this year, compared with the corresponding period of last year, shows an increase of 550,151 bbls. of flour.

The following table shows the quantity of some of the principal articles of produce left at tide water from the commencement of navigation to the 22d of June, inclusive, during the years 1849, 53 days; 1850, 61 days; 1851, 68 days.

	Flour, bbls.	Wheat, bush.	Corn, bush.	Barley, bush.
Canal open, May 1, '49.	664,767	364,105	1,723,884	94,081
April 22, '50.	573,310	197,824	921,752	110,625
April 15, '51.	1,065,025	490,003	2,570,069	98,416
Other grains..	571,950	572,740	1,060,119	24,701
Beef, bbls.....	16,964	25,568	41,019	12,758
Pork, bbls.....	58,607	40,969	778,682	9,258,100
Ashe, bbls.....	14,133	15,746	915,361	486,286
Butter, lbs.....	876,809	530,737	8,517,953	
Lard, lbs.....	6,182,968	5,159,026		
Cheese, lbs.....	2,329,657	2,332,823		
Wool, lbs.....	672,637	622,555		
Bacon, lbs.....	5,687,273	6,101,567		

This does not include Waterford.

In another column our readers will find an Advertisement of the Wilmington and Manchester railroad company, for money on their mortgage bonds. The object of the above road is to supply the only link wanting to connect the roads of the North and South. At the present time, after reaching Wilmington, travel is forced to take the dangerous route by sea to Charleston or Savannah.—The above would give us a continuous line of railroad from the interior of Maine to Montgomery, Ala. There are now in South Carolina, Georgia and Alabama, about 1000 miles of railroad, and for all these the Wilmington and Manchester railroad would constitute a great trunk line North.—The road will be economically built, is in good hands, and the bonds are based upon a sufficient amount of private subscriptions to make the security perfect. Persons wishing to invest in railroad securities will find nothing better.

A large sale was made during the past week of the Pennsylvania Coal company's 7 per cent bonds, at par, but the bonds we presume were taken by the stockholders, and the rate quoted is no indication of the state of the market.

The English iron market remains dull. Below we give an extract from the Circular of Wm. Bird & Co., London, with the quotations at the latest dates.

"Our iron market continues depressed, prices, therefore, rule low. Rails have this week been done at £5 2 6 in Wales, net cash.

Common Bars range from £4 10 to £4 15, 3 per cent discount, free on board. Wales according to mark.

Staffordshire Iron.—A fair demand for good qualities at list prices. Best marks, 'Crown' BBH, IB, Lion, etc.—say

Bars, £7 15. Hoops, £7 5. Sheets, £8 5. Nail rods, £6 7 6, at Liverpool, 1½ per cent. discount—lower qualities from 5s. to 10s. per ton less.

Scotch Pigs remain with very little variation at former quotations, viz: 41s. for No. 1 Garthsherrie; 40s. for No. 1 good manufactured bars; 39s. 6d. for mixed Nos.—net cash at Glasgow.

Tin Plates, dull at 31s. for best charcoal in London; 30s. to 30s. 6d. for do. in Liverpool, 3 per cent. discount.

Spelter is dull of sale at £14 15s., but found buyers at £14 10 for arrival—the stock on hand (over 13,000 tons) considerably exceeds the demand and prevents purchases to any extent being made."

Little Miami Railroad.—The receipts of the Little Miami railroad company for the six months ending June 1st, were.....\$220,439 73
Expenses during same period..... 98,361 41

Estimated earnings of stock in Columbus and Xenia road..... 10,000 00
Total net earnings.....\$132,078 32

Cleveland and Columbus Railroad.—The business of this road up to May 31st, 1851, is as follows:

	Rec'd from passengers.	Freight.	Total.
March.....	\$13,119 53	\$6,281 16	\$19,400 69
April.....	18,466 93	9,567 20	28,034 13
May.....	25,038 75	10,081 49	35,120 24
	\$56,625 21	\$25,929 85	

Total receipts for three months.....\$82,554 06
No. of Passengers carried, 31,679½.

Vermont Central Railroad Receipts.—Earnings for May, 1851.....\$47,960 99
Earnings for May, 1850..... 17,945 90

Increase.....\$30,015 09
or about 167 per cent. The receipts of the Vermont and Canada road are included in the above.

Boston, Concord and Montreal Railroad.—The earnings of the Boston, Concord, and Montreal railroad for the month of May, were.....\$11,746 92
In same month last year..... 9,948 78

Increase this year.....\$1,808 14
The road was in operation to Plymouth only during the month of May, and the above earnings, as compared with last year, are given on the same length of road.

Rutland and Burlington Railroad.—The annual meeting of the Rutland and Burlington railroad company, was held in Burlington on Wednesday, the 18th inst. It appears from the Treasurer's report:—

The cost of the road was.....	\$3,430,598 65
The cost of the furniture.....	324 647 12
The cost of other expenses.....	99,007 65
For dividends on preferred stock....	489,187 64
	\$4,343,441 06

The Superintendent's report states that the net earnings of the road were.....\$277,475 80
Running expenses..... 105,041 00

Balance.....\$172,434 80
This balance is sufficient to pay the interest on the whole debt, and leave a balance of 2 per cent.

Cape Cod Branch Railroad.—The annual meeting of the stockholders of this corporation is to be held in Middleboro', on the second Tuesday of July. The Yarmouth Register furnishes the following statement of the receipts of the road:

Net earnings for the year ending June 1, 1851.....\$29,330 36
For year ending June 1, 1850..... 25,890 27

Increase.....\$3,440 09

The net earnings pay the interest on the funded and floating debts, and six per cent. on the par value of the stock.

Boston and Providence Railroad.—Receipts for the year.....\$383,816 67
Expenses..... 184,218 24

Balance.....\$199,535 63

All payments of interest are included in the above statement of expenses, and the result shows a profit of 6½ per cent. upon the capital.

SALES OF STOCK IN NEW YORK.

	June 26. Sales.	June 19. Sales.
U. S '67 Loan.....	116½	116½
Erie R.R.....	83½	82½
Harlem R.R.....	73½	73½
Stonington.....	44½	44
L.I. R.R.....	18½	20
Norwich & Wor....	61	64
Del. & Hudson.....	121½	121½
Reading.....	56½	55½
Morris Canal.....	16½	16½
Erie income.....	97½	95½
" " Bonds.....	103	103½
Canton.....	73	73
Farmers Loan.....	69	68

SALES OF STOCKS IN BOSTON.

	June 25.	June 18.
Old Colony Railroad.....	68	69
Boston and Maine R.R.....	104	104
Eastern Railroad.....	102½	102½
Fitchburg Railroad.....	110	110
Michigan Central Railroad.....	103	103½
Northern Railroad.....	70½	71½
Vermont Central Railroad.....	35½	36
Vermont and Mass. R.R.....	30½	31
Western Railroad.....	100	107½
Ogdensburg Railroad.....	37½	39
Rutland Railroad.....	55	57
Boston and Worcester Railroad.....	103½	103
Rutland Railroad Bonds.....	97	97
Ogdensburg Railroad Bonds.....	99	99
Vermont Central R.R. Bonds.....	91½	91½
Boston and Providence R.R.....	90	93½
Philadelphia, Wilm'gton & Balt.	30	30½
Concord R.R.....	55	55

Trautwine on Railroad Curves.

By JOHN C. TRAUTWINE, Civil Engineer,
Philadelphia, Pa.

In press, and will be published in a few days; accompanied by a Table of Natural Sines and Tangents to single minutes, by means of which all the necessary calculations may be performed in the field.

This little volume is intended as a field-book for assistants; and will be found extremely useful, as it contains full instructions, (with wood cuts) for laying out, and adjusting curves; with Tables of Angles, ordinates etc., for Curves varying from 13 miles, down to 146 feet Radius.

A portable Table of Natural Sines and Tangents to minutes, has for a long time been a desideratum among Engineers, independently of its use in laying out curves.

The volume is neatly got up in duodecimo; and handsomely bound in pocket-book form.

Sold by Wm. Hamilton, Actuary of the Franklin Institute, Philadelphia. Price \$1.

Also in press, and will be issued in a few weeks, "Trautwine's Method of Calculating Excavation and Embankment."

By this method, which is entirely new, (being now made known for the first time) the cubic contents are ascertained with great ease, and rapidity,

by means of diagrams, and tables of level cuttings. Thin octavo; neatly half bound, \$1. For sale by Wm. Hamilton.

Charlotte and South Carolina Railroad.

A meeting of the directors of this company took place at Chester on the 23rd ult. We learn that the road is now completed ten miles this side of Winnsboro, and it is expected that it will progress at the rate of four or five miles per month, which will bring it to Chester about the 1st of October.

The income of the portion of the road opened since January 1, 1851, has been.....\$17,105 18
Expenses..... 5,013 42
Net income.....\$12,091 76

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff St.

JOHNSON, CAMMELL & Co's Celebrated Cast Steel,

AND
ENGINEERING AND MACHINE FILES,
which for quality and adaptation to mechanical uses, have been proved superior to any in the United States. Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cyclops Steel Works Sheffield.

JOHNSON, CAMMELL & CO.,
21 Cliff St., New York.

November 23 1843.

Bowling Tire Bars.

40 Best Flange Bars 5 1/2 x 2 inches, 11 feet long.
40 " " 5 1/2 x 2 " 7 feet 8 in. long.
40 " Flat " 6 x 2 " 11 feet long.
40 " " 6 x 2 " 7 feet 8 in. long.

Now in store and for sale by

RAYMOND & FULLERTON,
45 Cliff street.

Car Wheel Iron.

100 Tons "Columbia" No. 2 Cold Blast Charcoal Iron.

300 Tons "Salisbury" No. 1, do. do.
For sale by CHARLES T. GILBERT,
No. 60 Broad st.

New York, Sept. 21, 1850.

Railroad Spikes.

THE subscribers are prepared to make and execute contracts for Railroad Spikes of a superior quality, manufactured by the New Jersey Iron Company, at Boonton.

DUDLEY B. FULLER & CO.
139 Greenwich st. corner of Cedar.

S. S. Keyser & Co., IRON WAREHOUSE,

Corner of South and Pratt Streets,
BALTIMORE, MD.

Selling Agents for the Rough and Ready Bar Iron and Elk Boiler and Flue Iron Rolling Mills, Sarah and Taylor Furnaces, and Wrightsville Hollow Ware Foundry, and Dealers in Bar and Sheet Iron, and Cast, Sheer, German, Blister, Spring and Electroplated Steel, etc., etc.

To Railroad Companies. SALISBURY REFINED IRON.

THE Undersigned, having enlarged and perfected his Works, is now prepared to furnish Locomotive Tire of a better quality than have heretofore been used. Railroad Companies who may wish it, will be furnished with a set for trial, not to be paid for until they are satisfied of their superior quality over any other. Also made at short notice, and in the best manner, Locomotive Cranks, Engine and Car Axles, and other Locomotive Forgings.

All work ordered from me will be made of Salisbury Iron, and done in the best manner.

Address HORATIO AMES,
Falls Village, Conn.

May 1, 1851.

To Contractors.

PROPOSALS are invited for laying the superstructure on the first 38 miles of the Manassas Gap Railroad, up to Farrowville;—the work to be commenced in August next. Plans and specifications may be seen at the office in Alexandria, after the 28th inst. Bids will be received up to the 5th of July.

ENGINEER'S OFFICE, ALEXANDRIA.

Notice to Contractors.

Engineers Office, E. T. & V. R. R. Company.
Greenville, E. T., June 5th, 1851.

PROPOSALS will be received until the 1st day of October next, for the Grading and Masonry of that part of the E. T. & V. Railroad between the Eastern terminus of said road at King's Meadow, and Rheatown, in Greene County, a distance of about forty-seven miles. A large amount of very heavy work, both in Grading as well as Masonry, will be found on this division, offering strong inducements to able Contractors.

Maps, Profiles, and Specifications can be seen at this Office, on and after the 20th of July next.

The Company reserve the right to reject all, or any proposals that they deem unsatisfactory.

Proposals should be directed to the Treasurer and Secretary of the E. T. & V. Railroad Company, Jonesborough, E. T.

LLOYD TILGHMAN,
Chief Engineer.

SUPERIOR BLACK WRITING & COPYING INK.

Jones' Empire Ink.

87 Nassau st., Sun Building, New York city.

Net prices to the trade—

Quarts, per dozen,	\$1 50	6 oz. per dozen,	\$0 50
Pints,	1 00	4 " "	0 37 1/2
3 ounces,	0 62 1/2	2 " "	0 25

On draught per Gallon, 20 cents.

This is the best Ink manufactured, it flows freely, is a good copying ink, and will not mould, corrode, precipitate or decay. Orders for export, or home consumption, carefully and promptly attended to by

THEODORE LENT.

Lovegrove's Patent Cast Iron Water and Gas Pipes.

THE Subscriber, the Inventor and Patentee of the Centrifugal mode of giving form to metallic substances while in a molten state, is preparing to make Cast Iron Water and Gas Pipes, of any dimensions, at prices much lower than they can be made in the old manner, and the pipes warranted to stand a pressure of three hundred pounds to the square inch, and to be soft enough to drill. Steam Engines and all kinds of machinery. Cast Iron Doors and Frames, and Mill Castings of every description, made to order.

THOMAS J. LOVEGROVE,
Machinist and Founder,

West Falls Avenue, below Pratt st., Baltimore.

Railway Iron.

3000 TONS, 50, 57, and 60 lb. Rails, made of best English Iron and under particular specifications.

Also:

Rails imported on commission or at a fixed price, delivered at a port in England, or at any port in the United States. Apply to

DAVIS, BROOKS & CO.,
June 5, 1851. 23 Beaver st., New York.

Spikes, Spikes, Spikes.

ANY person wishing a simple and effective Spike Machine, or a number of them, may be supplied by addressing J. W. FLACK, Troy, N. Y. or MOORE HARDAWAY, Richmond, Va. March 6, 1850.

Wheel, Forge and Foundry Iron.

LOCUST GROVE Wheel Iron of great strength and superior chilling property.

Balt. Charcoal Forge Iron, from Patuxent, Curtis Creek and Gunpowder furnaces.

Elkridge Foundry Iron, of superior strength and softness. Anthracite and Charcoal Iron from Pennsylvania and Virginia. Gas and Water Pipes, Lamp Posts from Elkridge furnace.

LEMMON & GLENN,
62 Buchanan's Wharf, Baltimore.

TO CONTRACTORS.

Engineer's Office, S. S. R. Road Co.
Petersburg, Va., May 27, 1851.

PROPOSALS will be received at the Engineer's office, South Side Railroad, at Petersburg, Va., until the 31st of July next, for the construction of Appomattox Bridge, to be erected near Farmville.

The Bridge will be about 3000 feet long and 80 feet high; to consist of a wooden superstructure resting on abutments and piers.

The piers will be of brick or stone, to be determined after receiving the proposals.

Good brick earth can be obtained near the site of the Bridge.

The proposals may be made for the structure complete, or for the various items of work and materials, viz.: Masonry, furnishing Bricks or Timber; workmanship of laying Bricks and workmanship of superstructure.

Security will be required for the fulfilments of the contracts, and it will be necessary that each proposal be accompanied with a letter from a responsible person or persons, stating that they will become security.

C. O. SANFORD,
Ch. Engineer, S. Side R. Road.

To Contractors.

OFFICE PACIFIC RAILROAD CO.,
St. Louis, Mo., May 16, 1851.

THE Graduation, Masonry, and the Laying of the Superstructure of the first Division of the Pacific Railroad, comprising about 45 miles from the city of St. Louis, westward, will be ready for contract on the 20th of June next.

Proposals will be received at the Engineer's Office, St. Louis, from the 20th to the 30th of June, where plans and specifications will be shown. The line will be ready for inspection on and after the 20th of June.

The line will be divided into sections of about one mile each, but offerers can include as many of them in one bid as may suit their convenience.

The company will not bind itself to accept the lowest offer, unless in all other respects satisfactory, but reserves the power to dispose of the work in such manner as may appear most advantageous to the interests of the company.

The Division will embrace about one million three hundred thousand (1,300,000) cubic yards of graduation, and about thirty three thousand (33,000) cubic yards of masonry.

THOMAS ALLEN, President.
JAMES. P. KIRKWOOD, Chief Engineer.

Notice to Contractors.

Columbus, Piqua and Indiana Railroad.

SEALED PROPOSALS will be received at the Engineer's Office of the Columbus, Piqua and Indiana Railroad Company, at Urbana, on the 8th day of July, 1851, for the Grubbing, Grading and Masonry of that portion of the line extending from St. Paris, in Champaign county, to Columbus, a distance of fifty-six miles. Plans and specifications of the work may be seen from the 1st to the 8th of July, at the office. The Directors reserve the right to retain bids for twenty days after the 8th, before declaring the work.

The names in full of all the parties should be given in the proposals.

A. G. CONOVER, Engineer.
Piqua, May 20, 1851. 3122

Railroad Iron.

THE Subscribers, Agents for the Manufacturers, are prepared to contract for the delivery of Railroad iron at any port in the United States or Canada, or at a shipping port in Wales.

WAINWRIGHT & TAPPAN,
29 Central Wharf.

Boston, June 1, 1851.

Superintendent of a Railroad.

THE Post of Superintendent of a Railroad is wanted by a middle aged man, who can give satisfactory evidence of his capacity, integrity and qualifications for such a situation. Letters addressed to A. B., care of the Editor of the Railroad Journal, New York, (to whom the above would refer), will receive immediate attention.

New York, June 11, 1851.

To Railroad Companies, etc.



The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

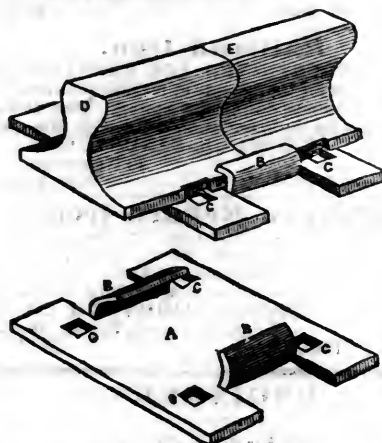
I also invite attention to an improved PATENT SPRING LOCK, for SLIDING Doors to Freight and Baggage Cars, now in use upon the Pennsylvania Central, Greenville and Columbia, S.C., Reading, Pa., and other Railroads.

Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH,
46 South 8th St. Philadelphia.

May 9, 1851.

The American Railroad Chair Manufacturing Co.



ARE prepared to make WROUGHT IRON RAIL ROAD CHAIRS, of various sizes, at short notice.

By use of the Wrought Iron Chair, the necessity of the wedge is entirely done away—the lips of the chair being set, by means of a sledge or hammer, close and firmly to the flange of the rail.

The less thickness of metal necessary in the Wrought Iron Chair gives much greater power and force to the spikes when driven—and consequently a much less liability to the spreading of the rails by reason of the spikes drawing or becoming bent.

The less weight necessary in the Wrought Iron Chair, will enable us to furnish them at a cost much below that of CAST IRON CHAIRS.

DESCRIPTION OF THE ABOVE CUTS.

Figure 1 is a perspective view of the rail secured in the chair, and fig. 2 is a perspective view of the chair itself. D, E, are sections of two rails placed together, and secured at the joint on the chair by the jaws B, B. The chair is bolted down by spikes C, C. In fig. 2, the chair is represented as made of a single block or plate A of wrought iron.

The chair is set in its proper place on the track, spiked down, and the ends of the two rails brought together within the jaws as represented in fig. 1.

For further information address,

N. C. TROWERIDGE, Secretary,
Poughkeepsie, N. Y.

June 1, 1851.

Railroad Commission Agency.

THE Subscriber offers his services to Railroad Co's and Car Makers for the purchase of equipment and furniture of roads and depots and all articles and materials required in the construction of cars, with cash or approved credit. No effort will be spared to select the best articles at the lowest market price.

He is sole Agent for the manufacture of the ENAMELED CAR LININGS, now in universal use. The best Artists are employed in designing new styles, and he will make to order pieces with appropriate designs for every part of the car, in all colors, or with silver grounds and bronzed or velvet figures.

He is also Agent for Page's Car Window Sash Fasteners, which is preferred by all who have used it to any other.

CHARLES STODDER,
75 Kilby st., Boston.

June 20, 1851.

3m.

LOWMOOR

AND

U. S. BEST FINCH IRON. To Iron Merchants.

JOHN FINCH & SONS, Iron Merchants, Liverpool, now are, and for more than twenty years past have been, sole Agents for the LOWMOOR IRON COMPANY, for the United States and Canada, for the sale of their well known Railway Tire Bars, and Axles, Piston Rods, Boiler Plates, Angle, Rivet, and all other kinds of Lowmoor Iron: also, sole Agents for the sale of the superior St. Ildershire Iron stamped "FINCH CROWN" and "U. S. BEST FINCH;" and Merchants and Wholesale Dealers in all other kinds of British Iron.

We hereby inform our friends and the public that we have this day appointed Mr. WM. BAILEY LANG, of Boston, as our only representative to receive orders and to transact our general business in the United States.

For JOHN FINCH & SONS.,
JOHN FINCH Sen.

Boston, April 11, 1851.

LOWMOOR and other Bent, Welded and Blocked RAILWAY TIRES, ready for use, E. FINCH'S Patent Dovetailed and other kinds of WROUGHT IRON RAILWAY WHEELS, with, or without the finished Axles, for Locomotives and for Passenger and Merchandise Cars, also Wrought Iron Railway Chairs, Railway Spikes, etc.

To the Managers of Railways, Engineers and others: Gentlemen:—We, FINCH & WILLEY, Engineers, Liverpool, Manufacturers of the above articles, respectfully inform you that we have this day appointed Mr. WM. BAILEY LANG, of Boston, as our sole Agent for the sale of said articles, and the transaction of our business in the United States of America, and for whom we solicit your kind attention and patronage.

For FINCH & WILLEY,
JOHN FINCH, Sen.

Boston, April 11, 1851.

Having accepted the above Agencies, I beg leave to solicit your orders, which shall at all times receive my prompt and careful attention. Please address all communications either to MESSRS. JOHN FINCH & SONS or MESSRS. FINCH & WILLEY, Liverpool; or to me, at my Steel Warehouse, No. 9 Liberty Square, Boston. Yours very respectfully,

WM. BAILEY LANG.

Boston, April 11, 1851.

The following are testimonials of the quality of FINCH & WILLEY'S WROUGHT IRON RAILWAY WHEELS from the Yorkshire and Lancashire Railway Co., one of the largest in Great Britain, and from the London and North Western Railway Co., the largest Railway Company in the world.

LONDON AND NORTH WESTERN RAILWAY,
(Northern Division),

WAGON DEPARTMENT, ODSALL LANE,
Manchester, January 4, 1851.

Gentlemen:—I have very great pleasure in bearing my testimony to the excellent quality of your Wrought Iron Railway Wheels.

This Company have many of them now in use on their lines, and during my experience, as their Superintendent, which is now upwards of 9 years standing, I have not known any of them to fail during that time.

I am, Gentlemen, yours, truly,

OWEN OWENS.

MESSRS. FINCH & WILLEY,
Windsor Foundry.

LANCASHIRE AND YORKSHIRE RAILWAY,
Wagon Department, Jan. 3, 1851.

Messrs. Finch & Willey,

Gentlemen: In reply to your request writing me to give my opinion of the 700 sets of Wrought Iron Wheels you furnished this company during the years 1847 and 1848, I have much pleasure in stating that we have not had a single instance of your Wheels failing in any respect, and I consider them equal if not superior to any Wheels we have on this line of railway. The Tires being LOWMOOR Iron, 1 1/4 inch thick, I have no doubt they will run under ordinary goods' wagons 12 years without any repairs more than the tires turning up. I am Gentlemen,

Yours, truly, WM. EMMETT.

NOTE.—4 Wheels and 2 Axles are one set, consequently this order contained 2000 WHEELS and 1400 AXLES; value over \$100,000.

Boston Locomotive Works,

—Late Hinkley & Drury—

No. 380 Harrison Avenue,
BOSTON.

Locomotive and Stationary Steam Engines; Boilers; Iron, Brass, Copper and Composition Castings; Coppersmith's Work, and all kinds of Railroad Machinery furnished at short notice.

ALSO



Van Kuran's Improved Railroad Wheel,

Patented May 1, 1849. Manufactured under the personal superintendence of the Patentee, as above.

Orders for any quantity of wheels executed with dispatch, and wheels and axles fitted in the very best manner and at the lowest rates. Address

DANIEL F. CHILD, Treasurer, Boston.



Providence Tool Co.,

MANUFACTURERS OF

Plane Irons, Tooth Irons, Soft Moulding and Rabbet Irons, Cornice Irons, Plow Bitts, and Planing Machine Knives:

NUTS, WASHERS AND BOLTS.

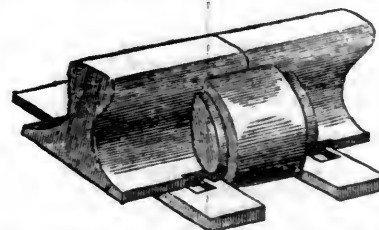
—ALSO—

PLATE HINGES AND PICK AXES.

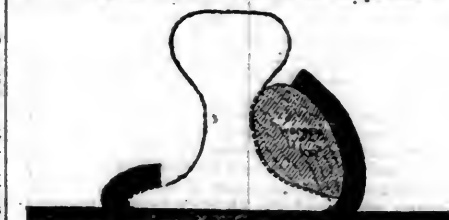
They are prepared to execute orders for all descriptions of Cold Punching and Job Work.

WM. FIELD, Agent. RUFUS WATERMAN, Treas.
PROVIDENCE, R. I.

Railroad Iron, SPIKES, AND WROUGHT IRON CHAIRS.



THE Undersigned, Agent for Manufacturers, is authorized to contract for Welsh Railroad Iron of the best quality, and deliverable at any port on favorable terms, also Spikes and Wrought Iron Chairs, made from the best iron, and of any pattern and weight. The new Wrought Iron Chair, with the introduction of a "Key," as per the annexed plan, will be found a great improvement on the old pattern.



Boiler Plates of superior quality, perfect regularity in the squaring and thickness, and made with great care.

Samples can be seen at the office, No. 20 Beaver St.
CHARLES ILLIUS.

RAILROAD CAR MANUFACTORY

TRACY & FALES,
GROVE WORKS, HARTFORD, CONN.Passage, Freight and all descriptions of
RAILROAD CARS,AS WELL AS
LOCOMOTIVE TENDERS,
Made to order promptly.

The above is the Largest Car Factory in the Union. In quality of Material, and in Workmanship, Beauty and Good Taste, as well as Strength and Durability, we are determined our work shall be unsurpassed.

JOHN R. TRACY. THOS. J. FALES.

**CHILLED TIRES FOR
LOCOMOTIVE ENGINES.
To Railroad Companies.**

THE Undersigned, Assignee of Letters Patent, respectfully invites the attention of Railroad Companies to the CHILLED TIRES for LOCOMOTIVE ENGINES, which he offers for sale.

These Tires were first introduced by Messrs. Perkins & McMahon, upon the Baltimore and Ohio Railroad, in 1843, where, after a long and severe trial, they were generally adopted, on both passenger and freight engines, and now have entirely superseded Wrought Tires on that road, on which are many engines of the heaviest class, which ascend grades of *eighty-five feet per mile*, taking with them *one hundred and twelve tons*, exclusive of cars. This performance shows in some measure the *adhesive* character and *strength* of the Tire.

During a service of seven years, these Tires have very much exceeded in *durability* those of wrought iron, while their first cost, and expense of repairs, is more than *fifty per cent. less*. They also retain more equally their *diameter and proper form of tread*, which is a point of much value in engines with *coupled wheels*.

It is believed these Tires are peculiarly well adapted to freight engines, as the objection to *coupling* the wheels of locomotives is the *increased friction*, arising principally from the *unequal wear* of wrought tires; and hence most of the freight engines where wrought tires are used, have but *four wheels as drivers*, with frequently a weight of *sixteen tons*, or more, upon them, which may be of no disadvantage to the engine, although its effect upon the *track* is like a car with *sixteen tons* upon *four wheels*, and it is presumed no one would permit cars so heavily loaded to pass over their road.

As Chilled Tires wear more *uniformly* than those of wrought iron, there can be no doubt when these are used, that the weight *necessary for adhesion* may be distributed upon more *driving wheels*, without any material disadvantage to the engine, and thus placing *less weight* upon a *single point*, would relieve the *track*, and secure, to a great extent, the object sought to be gained by the plan so frequently proposed, of using *light engines*, which would bring with it the necessity of *increasing* the number of trains and train hands.

The complete success of Chilled Tires upon the Baltimore and Ohio road for the last seven years, and upon other roads for a more subsequent period, is a strong proof of their *practical character*, while their *cheapness and durability*, it is believed, recommend their trial by every railroad company.

It may be thought by some that the *whole wheel* for *strength*, would be preferable to wheels with tires, but experience shows the latter to be a much *stronger and more durable wheel*, on account of its freedom from *tension*, which is never the case with a *whole wheel*. That *TENSION* has much to do with the breaking of wheels and tires, may be inferred from the fact, that a set of *chilled tires*, five feet diameter, on a first class passenger engine, have been in constant service during the past winter, on one of our Eastern roads, and have withstood the severities of the season, where *whole wheels and wrought tires* have broken. And it may be proper to remark, that wherever chilled tires have been introduced, *whole wheels as drivers* are invariably abandoned, they being far more expensive to maintain, as there is a *crank* to form as often as a wheel is renewed, which is *not* the case on the renewal of a tire.

The peculiar manner of *fastening* these tires to the wheel without *shrink*, applies equally well to wrought tires, and is of much importance where they are used, as it secures them against the *TENSION or STRAIN* they receive by the present plan of *shrinking* them to the wheels, which undoubtedly is the cause of wrought tires breaking so frequently, particularly in cold weather, which produces a greater *contraction* of the tire, thereby increasing the *strain*. This plan makes the tire perfectly secure upon the wheel, and is attended with *less expense*, as will be seen by the following testimonials, which are respectfully submitted.

Lowell, March. 1851.

L. B. TYNG.

TESTIMONIALS.

Baltimore and Ohio R. R. Office, }
Jan. 2, 1850.

Mr. L. B. TYNG, Lowell, Mass.—Sir: Your favor of the 26th ult., is before me, asking my opinion of the Chilled Cast Iron Tires, of Messrs. Perkins & McMahon, patentees. I do not hesitate to speak favorably of them, nor to say that I would give them the preference over wrought iron tires, whenever the adhesive tenacity of the latter to the rails is not all called for, there being somewhat less adhesion to the chilled wheel.

This can, however, scarcely be called a practical point, as nearly all of the Passenger Engines now in use have a *surplus of adhesion*, and nearly all Freight Engines being provided with the sand box, for emergencies arising from sharp curves, heavy grades or wet rails.

The Chilled Tire is very much cheaper in first cost, will last longer, and offers a facility for putting it on the wheel, rendering comparison with the wrought iron tire an absurdity—it not being necessary even to take the wheels from the machine for the purpose.—Many of them are in successful use on this road, and I consider its curves and other peculiarities the most severe of all existing tests. One set of five feet in diameter, has run 50,000 miles under one of our Passenger Engines, and will to all appearance, run as many more; and, in the mean time, they have not cost a dollar for repairs or adjustment.

It may be suggested that they might not stand a Northern frost. This is possible; but I believe otherwise, as the weather here is occasionally as severe as in Boston, and if I had charge of a northern road, after the experience I have had here, I would make their trial one of my very first acts.

Respectfully your Ob't Serv't,

WM. PARKER, General Supt., etc.

January 29, 1851.

Philadelphia, Wilm. and Balt. R. R. Office, }
Wilmington, Del.

Mr. L. B. TYNG—Sir: We have used the solid Cast Iron Chilled Wheel, and Cast Iron Chilled Tire, for engine drivers, on this road since 1842. When wrought iron tires under new engines, purchased from time to time, wear out, I invariably replace them with the Chilled Tire of Messrs. Perkins & McMahon, patentees.

These Tires will last, on the average, three times as long as wrought tires; seldom requiring renewals under three years, and lasting much longer usually. We have a set which has been in constant use for five years, and still in fair order. The adhesion supplied by the Chilled Tires, I find in practice with engines of the same model and weight, to be equal to that given by wrought tires. This is certainly a fact, though not an acknowledged one, in general. Those who think otherwise, will in time change their opinions.

I am of opinion that the Chilled Tire is as safe as the wrought, at any temperature. In eight years use, we have broken but one tire out of more than fifty, and that by a violent concussion on the occasion of a run off.

The use of the Chilled Tire, and the ease and rapidity with which it may be replaced, would certainly enable a road to do the same amount of work with fewer engines—since but little time would be lost in laying up an engine for new tires, or for turning down old ones, as must be done when wrought tires are used.

I am yours respectfully,

I. R. TRIMBLE,
Engineer and General Supt.

Office Eastern R. R., Salem, Dec. 23, 1850.

L. B. TYNG, Esq.—Sir: Your favor of Nov. 30th, inquiring respecting the Chilled Cast Iron Tires, came duly to hand, and in answer, I will say, that this road have in use one set cast and fitted to the wheel, by Messrs. Bush & Lobdell, upon a twenty ton first class Passenger Engine, which has run in eight months, 26,639 miles, and to all appearance, are about as good as when they first commenced running.

In regard to the comparative expense of the cast or wrought iron tires, I do not hesitate to say that the difference would be vastly in favor of the former.

I have ordered a second set, and they will be put on to the engine immediately. Respectfully,

JOHN KINSMAN, Supt. E. R. R.

Chilled Tires for the various sized wheels, or wheels with either chilled or wrought tires fitted up upon this plan, may be had of the following persons:

ALDRICH, TYNG & Co, Lowell, Mass.
SMITH & PERKINS, Alexandria, Va.

Rights for using Tires upon the above plan, may be had on reasonable terms, of L. B. TYNG, Lowell, and at N. York.

Railroad Iron.

THE UNDERSIGNED, HAVING made arrangements abroad, are prepared to contract for the delivery of Foreign rails, of approved brands upon the most favorable terms.

They will also make contracts for American rails, made at their Trenton works, from Andover Iron, in whole or in part, as may be agreed upon.

They are prepared to furnish Telegraph, Spring and Market Wire; Braziers and Wire Rods; Rivets and Merchant Bars to order, all made exclusively from Andover Iron. The attention of parties who require iron of the very best quality for special purposes, is respectfully invited.

COOPER & HEWITT,
17 Burling Slip, New York.

February 15, 1850.

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.

August, 16, 1849.

6m33

Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron.

THOMAS B. SANDS & CO.,

73 New street,
New York.

February 3, 1849.

Glendon Refined Iron.

Round Iron, Band Iron, Hoop Iron,
Square " Flat " Scroll "

Axles, Locomotive Tyres,
Manufactured at the Glendon Mills, East Boston, for sale by
GEORGE GARDNER & CO.,
5 Liberty Square, Boston, Mass.

Sept. 15, 1849.

3m37

ENGINEERS.

Atkinson, T. C.,

Mining and Civil Engineer,
Orange and Alexandria Railroad, Alexandria, Va.

Clement, Wm. H.,

Little Miami Railroad, Cincinnati, Ohio.

Cozzens, W. H.,

Engineer and Surveyor, St. Louis, Mo.

Alfred W. Craven,

Chief Engineer Croton Aqueduct, New York.

C. Floyd-Jones,

Central Railroad, Decatur, Illinois.

Gay, Edward F.,

Columbia and Philadelphia Railroad, Philadelphia Pa.

Gilbert, Wm. B.,

Rutland and Burlington Railroad, Rutland, Vt.

Gzowski, Mr.,

St. Lawrence & Atlantic Railroad, Montreal, Canada.

Grant, James H.,

Nashville and Chattanooga R. R., Nashville, Tenn.

S. W. Hill,

Mining Engineer and Surveyor, Eagle River,
Lake Superior.

Holcomb, F. P.

Southwestern Railroad, Macon, Ga.

Latrobe, B. H.,

Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,

Buffalo and Conhocton Valley Railroad, Bath, N. Y.

Morris, Elwood,

Engineer, Chartiers Co., Pittsburgh, Penn.

Nott, Samuel,

Lawrence and Manchester Railroad, Boston,

Osborne, Richard B.,

Civil Engineer, Philadelphia.

Prichard, M. B.,
East Tennessee and Georgia R. R., Cleveland, Tenn.

W. Milnor Roberts,
Bellefontaine and Indiana Railroad, Marion, Ohio.

Roberts, Solomon W.,
Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Sanford, C. O.,
South Side Railroad, Virginia.

Schlatter, Charles L.,
Northern Railroad (Ogdensburg), Malone, N. Y.

Steele, J. Dutton,
Pottstown, Pa.

Trautwine, John C.,
Civil Engineer and Architect, Philadelphia.

Tinkham, A. W.,
United States Fort, Bucksport, Me.

Troost, Lewis,
Alabama and Tennessee Railroad, Selma, Ala.

Whipple, S.,
Civil Engineer and Bridge Builder, Utica, N. Y.

HOTELS.

**DAVIS'S
ALHAMBRA HALL,**
No. 136 Pratt street,
BALTIMORE.

Exchange Hotel,
Adjoining Eastern Railroad Depot,
BUFFALO, N. Y.
BY.....**FISK & SPERRY,**
Late of Delevan House, Albany.

MANSSION,
Corner of Maine and Exchange Streets,
P. DORSHIMER. **BUFFALO.**

Barnum's City Hotel,
MONUMENT SQUARE, BALTIMORE.
This Extensive Establishment, erected expressly for a Hotel, with every regard to comfort and convenience, is situated in the centre and most fashionable part of the city, and but a few minutes' walk from the Railroad Depots and Steamboat Landings.
The House has lately undergone a thorough repair, embracing many valuable improvements, and will accommodate 250 Guests. **BARNUM & CO.**

American Hotel,
Pratt street, opposite the Railroad Depot,
BALTIMORE.
HENRY M. SMITH.....Proprietor.
Late of the Exchange & St. Charles Hotels, Pittsburg

Washington Hotel,
BY **JOHN GILMAN,**
\$1 Per Day.
No. 206 Pratt street, (near the Depot,) **BALTIMORE.**

**GUY'S
United States Hotel,**
(Opposite Pratt street Railroad Depot,) **BALTIMORE.**
JOHN GUY. **WILLIAM GUY.**

DUNLAP'S HOTEL,
On the European Plan,
NO. 136 FULTON STREET,
Between Broadway and Nassau St.,
NEW YORK.

JONES' HOTEL,
NO. 152 CHESTNUT STREET,
PHILADELPHIA.
BAIDERS & WEST,.....Proprietors.

Fountain Hotel,
LIGHT STREET, BALTIMORE,
THURSTON.....Proprietor.

BUSINESS CARDS.

Walter R. Johnson,
CIVIL AND MINING ENGINEER AND AT-
torney for Patents. Office and Laboratory, F St.,
opposite the Patent office, Washington, D. C.

Lithography.
JOHN P. HALL & CO.,
161 Main st., Buffalo, (Commercial Advertiser Build.)
Are prepared to execute all kinds of Lithography in good style and at reasonable rates. Particular attention will be paid to Engraving Railroad Maps, Engineer's Plans and drafts, etc., and orders in this line are respectfully solicited.

**Cumberland, (Md.) Coals for
Steaming, etc.**
ORDERS RECEIVED FOR AND FILLED
by **J. COWLES, 27 Wall St., N. Y.**

J. & L. Tuckerman,
IRON COMMISSION MERCHANTS,
AND MANUFACTURERS OF
ULSTER BAR & POUGHKEEPSIE PIG IRON,
69 WEST STREET,
NEW YORK

Henry I. Ibbotson,
IMPORTER of Sheffield and Birmingham Goods.
Also, Agent for the Manufacture of Telegraph
Wire. **218 PEARL ST., NEW YORK.**

Charles T. Jackson, M. D.,
STATE ASSAYER, late Geologist to Maine, Rhode
Island, New Hampshire, and the United States,
offers his services to his friends and the public in mak-
ing any Chemical, Mineralogical or Geological re-
searches that may be required for the improvement of
Agriculture and the Manufacturing Arts. Particular
attention will be paid to the exploration of mines and
to assaying of ores of the metals.
State Assayer's office, 31 Somerset st.
Boston Sept. 3, 1850.

STEEL AND FILES.
R. S. Stenton,
20 CLIFF STREET, NEW YORK,
AGENT FOR
J. & RILEY CARR,
BAILEY-LANE WORKS, SHEFFIELD,
Manufacturers of Cast, Shear, German, Blister, and
Spring Steel,
Of all descriptions, Warranted Good.
FILES.

Manufacturers of Machinists' Warranted Best Cast
Steel Files, expressly for working upon Iron and Steel,
made very heavy for recutting.
A full Stock of Steel and Files at all times on
hand. 6m4

Dudley B. Fuller & Co.,
IRON COMMISSION MERCHANTS,
No. 139 GREENWICH STREET,
NEW YORK.

Manning & Lee,
GENERAL COMMISSION MERCHANTS,
NO. 51 EXCHANGE PLACE,
BALTIMORE.

Agents for Avalon Railroad Iron and Nail Works,
Maryland Mining Company's Cumberland Coal 'CED'
—'Potomac' and other good brands of Pig Iron.

Samuel Kimber & Co.,
COMMISSION MERCHANTS
WILLOW ST. WHARVES, PHILADELPHIA.
AGENTS for the sale of Charcoal and Anthracite
Pig Iron, Hammered Railroad Car and Locomo-
tive Axles, Force Pumps of the most approved con-
struction for Railroad Water Stations and Hydraulic
Rams, etc., etc.
July, 27, 1849.

James Herron, Civil Engineer,
OF THE UNITED STATES NAVY YARD,
PENSACOLA, FLORIDA.,
PATENTEE OF THE
HERRON RAILWAY TRACK.
Models of this Track, on the most improved plans,
may be seen at the Engineer's office of the New York
and Erie Railroad.

PLUSHES

FOR
Railway Cars & Omnibuses.
F. S. & S. A. MARTINE,
112 WILLIAM ST., NEAR JOHN.

ARE now receiving a large and complete assort-
ment of Plain and Figured PLUSHES, of their
own importation, which will be sold at the lowest
market price, viz: Crimson, Maroon, Scarlet, Green,
Blue, Purple, etc.
ALSO—CURLED HAIR, the best manufactured
in market.

**To Railroad Companies,
Machinists, Car Man-
ufacturers, etc., etc.**

CHARLES T. GILBERT,
NO. 80 BROAD ST., NEW YORK,
IS prepared to contract for furnishing at manufac-
turer's prices—
Railroad iron,
Locomotive Engines,
Passenger and Freight Cars,
Car Wheels and Axles,
Chairs and Spikes.
Orders are invited; and all inquiries in relation to
any of the above articles will receive immediate atten-
tion

**Manufacture of Patent Wire
ROPE AND CABLES,**
For Inclined Planes, Suspension Bridges, Standing
Rigging, Mines, Cranes, Derrick, Tilters, &c., by
JOHN A. ROEBLING, Civil Engineer,
TRENTON, N. J.

FORGING.
Ranstead, Dearborn & Co.,
MANUFACTURERS OF
LOCOMOTIVE CRANKS AND CAR AXLES,
ALSO
WROUGHT IRON SHAFTING,
And All Kinds of Hammered Shapes.
Office 25 Foster's Wharf, Boston.

Samuel D. Willmott,
MERCHANT, AND MANUFACTURER OF
CAST STEEL WARRANTED SAWS,
—AND FILES—
IMPORTER OF THE
GENUINE WICKESRLY GRINDSTONES
NO. 8 LIBERTY STREET,
NEW YORK.

Railroad Instruments.
THEODOLITES, TRANSIT COMPASSES,
and Levels, with Fraunhoffer's Munich Glasses,
Surveyor's Compasses, Chains, Drawing Instru-
ments, Barometers, etc., all of the best quality and
workmanship, for sale at unusually low prices, by
E. & G. W. BLUNT,
No. 179 Water St., cor. Burling Slip.
New York, May 19, 1849.

IRON.

Iron.
Pig Iron, Anthracite and Charcoal; Boiler and Flue
Iron, Spring and Blistered Steel, Nail Rods, Best Re-
fined Bar Iron, Railroad Iron, Car Axles, Nails, Stove
Castings, Cast Iron Pipes of all sizes, Railway Chairs
of approved patterns for sale by
COLEMAN, KELTON & CAMPBELL,
109 N. Water St., Philadelphia.

Iron Store.

THE Subscribers, having the selling agency of the
following named Rolling Mills, viz: Norristown,
Rough and Ready, Kensington, Triadelphia, Potts-
grove and Thorndale, can supply Railroad Companies,
Merchants and others, at the wholesale mill prices for
bars of all sizes, sheets cut to order as large as 58 in.
diameter; Railroad Iron, domestic and foreign; Loco-
motive tire welded to given size; Chairs and Spikes;
Iron for shafting, locomotive and general machinery
purposes; Cast, Shear, Blister and Spring Steel; Boil-
er rivets; Copper; Pig iron, etc., etc.
MORRIS, JONES & CO.,
Iron Merchants,
Schuylkill 7th and Market Sts., Philadelphia.
August 16, 1849. 1733

Bowling Iron. Stamped B.O.

Railway Tire Bars
Locomotive and other Axles
Boiler Plates
Stamped Iron
Locomotive Frame do
Bars,
and every other description of this superior Iron.

The subscribers, agents for the sale of Bowling Iron, are prepared to execute orders for importation, especially for railway and machinery uses, with despatch from the manufacturers.

RAYMOND & FULLERTON, 45 Cliff st.

**Ibbotson, Brothers & Co's
CELEBRATED CAST STEEL**

AND

Best Cast Steel Royal Improved Files, well known as better adapted for Engineers' and Machinists' purposes than any now in use in the United States.

Every description of Square, Octagon, Flat and Round Cast Steel, Sheet, Shovel and Railway Spring Steel, etc., and Steel to order for any purposes—manufactured at their works in Sheffield—and universally known by the old stamp "Globe."

HENRY I. IBBOTSON, Agent,
218 Pearl st., New York.

**Smith & Tyson,,
IRON COMMISSION MERCHANTS,
BALTIMORE.**

REFINED Juniata Charcoal Billet Iron for Wire.
Do. for Bridging, of great strength.

Flat Rock, Boiler and Flue Iron, rolled to pattern.
Elba, Wheel Iron of great strength and superior chiling properties. Elba Forge Iron, American Shot Iron, Cut Nails, Spikes and Brads, Nail and Spike rods, Railroad Spikes of superior quality, Wrought Chair plates of any pattern, punched or plain.

**WILLIAM JESSOP & SONS',
CELEBRATED CAST-STEEL.**

The subscribers have on hand, and are constantly receiving from their manufactory,

PARK WORKS, SHEFFIELD.

Double Refined Cast Steel—square, flat and octagon.
Best warranted Cast Steel—square, flat and octagon.
Best double and single Shear Steel—warranted.
Machinery Steel—round.

Best and 2d gy. Sheet Steel—for saws and other purposes.

German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.

Genuine "Sykes," L Blister Steel.
Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by

WM. JESSOP & SONS,
91 John street, New York.

Also by their Agents—

Curtus & Hand, 47 Commerce street, Philadelphia.
Alex'r Fullerton & Co., 119 Milk street, Boston.
Stickney & Beatty, South Charles street, Baltimore.
May 6, 1848.

Railroad Iron.

B. O. Railway Tires, Railway Wheels,
Scotch Pig Iron, Tin Plates and Banca Tin,
Muntz Patent Metal Sheathing,
Baltimore Copper.

Contracts for Rail's made on behalf of the manufacturers, for delivery at any ports in the United States, at fixed prices.

Bowling Tires and Tire Bars and Scotch Pigs imported to order.

Muntz's Ship-sheathing, and a general stock of Tin Plates and Banca Tin in store, and for sale by
RAYMOND & FULLERTON, 45 Cliff st.

IRONDALE PIG METAL, MANUFACTURED
and for sale by the Bloomsburg Railroad Iron Co.
LINDLEY FISHER, Treasurer.
75 N. Water St., Philadelphia.

Car Wheel Iron.

THE celebrated cold blast "Conowingo" Pig Iron, for Railroad Wheels, Chilled Rolls, etc., for sale by
E. PRATT & BROTHER,
Baltimore, Md.

Railroad Iron.

3,000 TONS C. L. MAKE 63½ lbs. per yard, now landing and to arrive.

Also contracts made for future delivery of above superior make English Iron.

300 Tons Banks Best Iron, Round, Square and Flat.
200 " English Bar " " " "
10 " 9-16 Square Iron for Railroad Spikes.

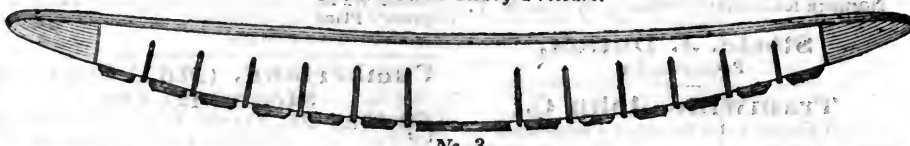
For sale in lots to suit purchasers by
DAVID W. WETMORE.
New York, March 26, 1850. 3m

**PATENT EXCELSIOR SPRING
for Railroad Cars, Locomotives, etc.**

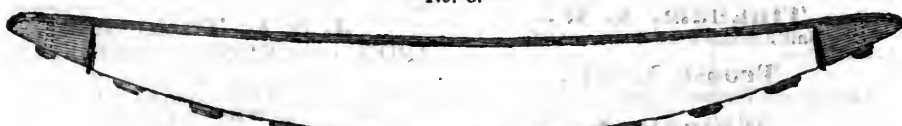
No. 1.—At Rest.



No. 2.—Under Heavy Pressure.



No. 3.



THESE Springs are composed of a Plate of Steel with Oak or Ash Wood, firmly riveted thereto, having saw kerfs in which are inserted flat plates of metal. The Spring is very powerful and yet sensitive. They are now being manufactured and sold by the Excelsior Spring Company, under a Patent granted on 20th May, 1851.

The above Drawing, No. 1, represents a side view of the Spring when it is at rest. No. 2, shows the same when under heavy pressure. No. 3, represents a Spring having only two plates instead of the usual number inserted in the wood.

This is undoubtedly the best Spring of the day—it is very simple—easy of application—light—cannot get out of order—and it is without any exception the most adjustable spring now made—for it will spring fifty

or five thousand pounds with the same ease.

The cost of the springs is very much less than that of any other.

The Excelsior Spring Co., determined that every spring shall be of the best quality, have established a Factory, where each spring is made directly under the eye of Mr. Bissell, the inventor—and before a spring is allowed to leave the factory it is subjected to a much severer test than it ever can be when at work. Each Spring is guaranteed to perform the required work.

Any person infringing on this patent will be prosecuted.

Office of EXCELSIOR SPRING COMPANY.
33 Broadway, New York.

June 7, 1851.

Railroad Spikes, Boiler Rivets, etc.

THE Subscribers, Agents for the sale of James S. Spencer's, Jr., Railroad and Boat Spikes, Boiler Rivets, and Wrought Iron Chairs for Railroads, made at his Works near this city, will execute all orders with promptness, despatch, and of the best quality.

ALSO IMPORTERS of English refined and Merchant bar Iron; Extra refined Car and Locomotive Axles (from 3½ to 6½ inches in diameter); B. O. Locomotive Tire (welded by Baldwin). Also, supply Boiler and Flue Iron cut to pattern or otherwise.—Spring, Shear, and Cast Steel, etc., etc., etc.

T. & E. GEORGE.

Philadelphia, November 14, 1850.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract for the delivery of English, Welsh and Scotch Rails, of any pattern and weight, also for every description of English, Welsh, Scotch, and Swedish Iron, Railway Chairs and Spikes, Rivets, Bolts, Nuts, Washers, Chain Cables, Anchors, Tin Plates, German Spelter, Iron Castings, and every description of Machinery.

WILLIAM BIRD & CO.,

Iron and Tin Plate Merchants,
44 Wall st., New York.

And at 5 Martin's Lane, City, London,
and 140 Buchanan st. Glasgow.

July 27th, 1850.

Railroad Iron.

THE "Montour Iron Company" is prepared to execute orders for Rails of the usual patterns and weights, and of any required length not exceeding 30 feet per rail. Apply to

THOS. CHAMBERS, President,
66 Broadway, N. Y.,

Or to the Agents,
CHOUTEAU, MERLE & SANFORD,
NO. 51 New st., New York.

September, 1850.

Railroad Iron.

THE Undersigned, Agents for the Manufacturers, are prepared to contract to deliver free on board at shipping port in England, or at port of discharge in the United States, Rails of superior quality, and of such weight or pattern as may be required.

VOSE, PERKINS & CO.,
74 South St.

New York, June 1, 1851.

Railroad Iron.

1650 Tons, weighing about 61 lbs. per yard, 40 tons, weighing about 52 lbs. per yard, and 825 tons, weighing about 53½ lbs. per yard, of the latest and most approved patterns of T rail, for sale by
BOORMAN, JOHNSTON & CO.,
119 Greenwich street.

New York, Aug. 26, 1850.

N.B.—B. J. & Co are also prepared to take contracts for English rails, delivered in any of the Atlantic ports of the United States.

Tredegar Iron Works.

ROLLING MILL FOUNDRY AND MACHINE SHOPS. The undersigned continues to manufacture at his Works in this city (from best charcoal metal) Bar Iron of every description, embracing—Rounds and Squares, from ½ to 5 inches diameter. Flats, from ½ to 7 inches, all thicknesses. Bands and Scrolls, all sizes. Boiler plate and Plough Iron. Railroad and Locomotive Axles and Tires. Locomotive Frames, Spikes and Plates. Hoops, Ovals, Half Ovals, Half Rounds, Angle, T, L, and indeed every description of Iron usually manufactured, all of which he warrants to be equal to any made in this country. He also manufactures at his Foundry and Machine Shops all descriptions of Railroad Work, say, Locomotives, Railroad Wheels and Axles complete and ready for the road, Railroad Chairs, etc. Also, Marine and Stationary Engines all sizes, Sugar mills and Engines, Horse mills, and every kind of Machinery usually required for the operations of the country. He has paid particular attention to getting up machinery, etc., for Gold Mine operations, and those in want of such work might find it to their advantage to give him a call.
J. R. ANDERSON.

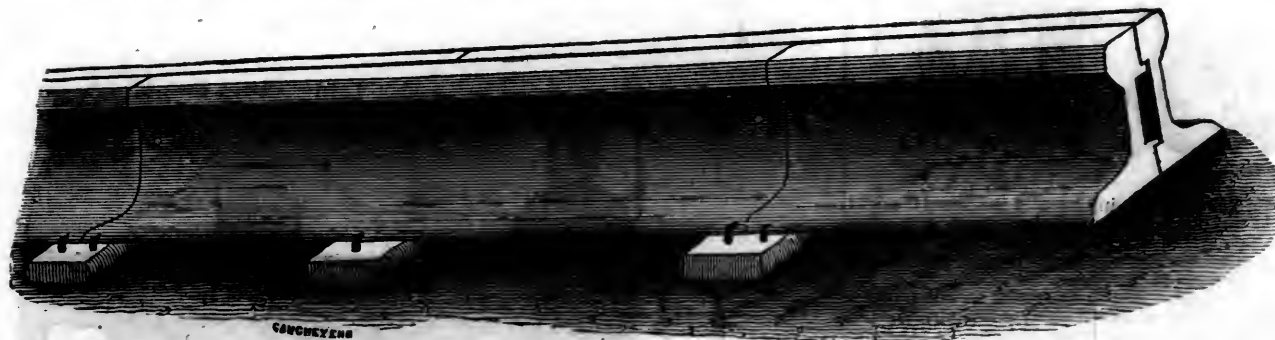
Richmond, Va., Sept. 10, 1850.

CUT NAILS OF BEST QUALITY, BAR IRON
(including Flat Rails) manufactured and for sale by
FISHER, MORGAN & CO.,
75 N. Water St., Philadelphia.

TO RAILROAD COMPANIES, CAR MANUFACTURERS, etc.

THE Undersigned hereby gives public notice, that the Commissioner of Patents, pursuant to his decision in relation thereto, on the 8th day of October, 1850, issued to him a Patent for the sole right to manufacture, and exclusive use of the INDIA RUBBER CAR SPRING, on account of priority of invention of said Spring.
F. M. RAY.
New York, Oct. 23, 1850.

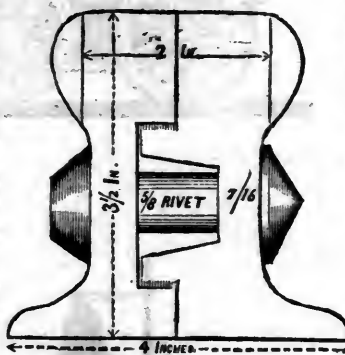
PATENT COMPOUND RAIL.



THE UNDERSIGNED NOW OFFER TO THE Railroad Public a new Compound Railroad Bar, which possesses, as they believe, a decided superiority over every kind now in use. The Cuts annexed will give a good idea of the form of the Rail, and the mode of combination.

This Rail has now been in use on the New York and Erie and the Utica and Schenectady Railroads for nearly two years, and has proved itself to be a *durable and continuous* rail, realizing the advantages of a theoretically perfect rail, over the one in common use. We invite the attention of Railroad Companies to a careful examination of the merits of the form now offered.

The advantages of this Rail are: first, it effects a saving of from 25 to 50 per cent. in the wear and tear of the machinery; secondly, it saves to a vastly greater extent in the repairs of track; thirdly, it secures a much higher rate of speed with the same power; and what is of still



greater importance, it offers complete protection against most of the accidents to which companies are liable. For these reasons, it is believed to be not only the best, but the cheapest rail that can be used. In enumerating its advantages, the proprietors only repeat the statements of competent persons, who have had the best opportunities of judging of its merits.

This improved Rail is now being manufactured at the Works of the Mount Savage Iron Co. in Maryland. Any communications or enquiries addressed to either of the undersigned will receive prompt attention.

J. F. WINSLOW, President,
Troy, N. Y.
ERASTUS CORNING, Albany.
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore.

April 8, 1851.

Faggotted Car and Engine Axles

FORGED by RANSTEAD, DEARBORN & Co., Boston, Mass. These Axles enjoy the highest reputation for excellence, and are all warranted.

Iron Trade of Pennsylvania.

DOCUMENTS and Statistics relating to the Manufacture of Iron in the State of Pennsylvania—giving a history of the manufacture from its commencement to this date, illustrated by diagrams. Also tables giving the address and capacity of every establishment in the State. Prepared by direction of the late convention of the trade held in Philadelphia. For sale by

LINDSAY & BLACKISTON, Philadelphia.
FIELDING LUCUS, Jr., Baltimore.
HENRY G. NICHOLS, 79 Water st., N. Y.
or at this office—price \$1 00.

It will be sent by mail to any order enclosing the money, and post paid.

Ulster Iron.

THE ULSTER IRON WORKS, Saugerties, N. Y., continue in full operation. Orders for round, square, flat, band, hoop and scroll iron, will be received and promptly executed by

J. & L. TUCKERMAN,
69 West St., New York.

India-rubber for Railroad Cos.

RUBBER SPRINGS—Bearing and Buffer—Fuller's Patent—Hose from 1 to 12" diameter. Suction Hose. Steam Packing—1/2 to 2 in thick. Rubber and Gutta Percha Bands. These articles are all warranted to give satisfaction, made under Tyer & Helm's patent, issued January, 1849. No lead used in the composition. Will stand much higher heat than that called "Goodyear's," and is in all respects better than any in use. Proprietors of rail roads do not be overcharged by pretenders.

HORACE H. DAY,
Warehouse 23 Courtlandt street
New York, May 21, 1849.

Railroad Iron.

2000 TONS T. RAILS, of desirable pattern, arrived, and to arrive, for sale by
RAYMOND & FULLERTON,
45 Cliff st.

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. J. F. WINSLOW, President

Troy, N. Y.
ERASTUS CORNING, Albany
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md

November 6, 1848.

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phoenix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehanna river; which two establishments are now turning out upwards of 1800 tons of finished rails per month.

Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.

REEVES, BUCK & CO.
45 North Water St. Philadelphia.

March 15, 1849.

LAP—WELDED WROUGHT IRON TUBES

FOR

TUBULAR BOILERS, FROM ONE AND A QUARTER TO SEVEN INCHES IN DIAMETER.

THE ONLY Tubes of the same quality and manufacture as those so extensively used in England Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER & SON, Patentees,
28 Platt street, New York.

AMERICAN PIG IRON.

"POUGHKEEPSIE" brand, Dutchess Co., N. Y.
"GLEDON" brand, Lehigh county, Pa.
Orders for the above two well known brands will be received, and promptly executed, by
J. & L. TUCKERMAN,
69 West St., New York.

American Cast Steel.

THE ADIRONDAC STEEL MANUFACTURING CO. is now producing, from American iron, at their works at Jersey City, N. J., Cast Steel of extraordinary quality, and is prepared to supply orders for the same at prices below that of the imported article of like quality. Consumers will find it to their interest to give this a trial. Orders for all sizes of hammered cast steel, directed as above, will meet with prompt attention.
May 28, 1849.

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for rail roads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.

JOHN F. WINSLOW, Agent.
Albany Iron and Nail Works, Troy, N. Y.
The above Spikes may be had at factory prices, of Erastus Corning & Co Albany; Meritt & Co., New York; E. Pratt & Co., Baltimore, Md.

Stickney & Beatty, DEALERS IN IRON AND MANUFACTURERS.

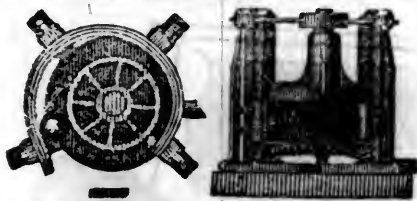
AGENTS for the Baltimore City Rolling Mill (Works of Messrs. Ellicott) also agents for the sale of the Laurel, Locust Grove and Gunpowder (Balt.) Forge Pig Irons; Hupp's Cold Blast Columbia Wheel Iron, Fort and anti-Eatam Pig Irons. Caledonia, Columbia and Capon Cold Blast Boiler Blooms, warranted; Wm. Jessop & Son's Steel; Old Colony and anti-Eatam Nails; Bar Iron, Boiler Plates, Hoop, Sheet, Oval, Half Oval, Horse Shoe and other Iron. Exchange Place, Baltimore.

Railroad Iron.

2000 Tons, weighing 58 pounds per lineal yard, of the most approved pattern of T rails, in store and to arrive, for sale by
COLLINS, VOSE & CO.,
74 South St.
New York, June 1, 1850.

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phoenixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll sounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y. P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery for making Spikes, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

CHILLED RAILROAD WHEELS.—THE UNDERSIGNED are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

Brown's Old Established SCALE WARE HOUSE,
NO. 234 WATER ST., NEW YORK.

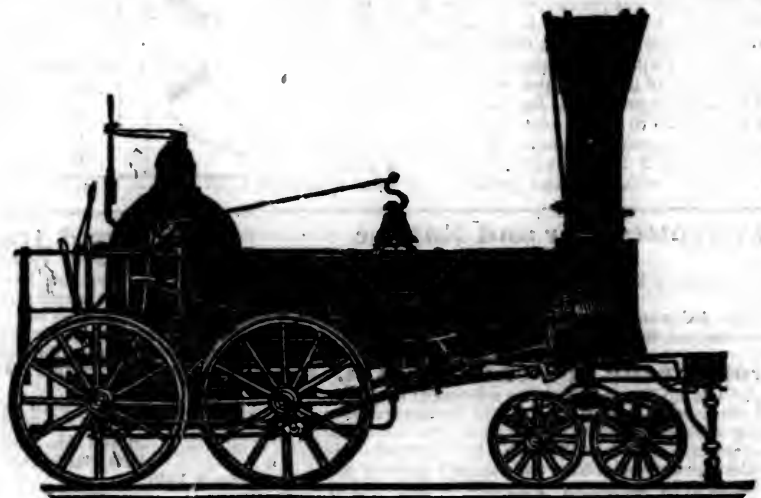
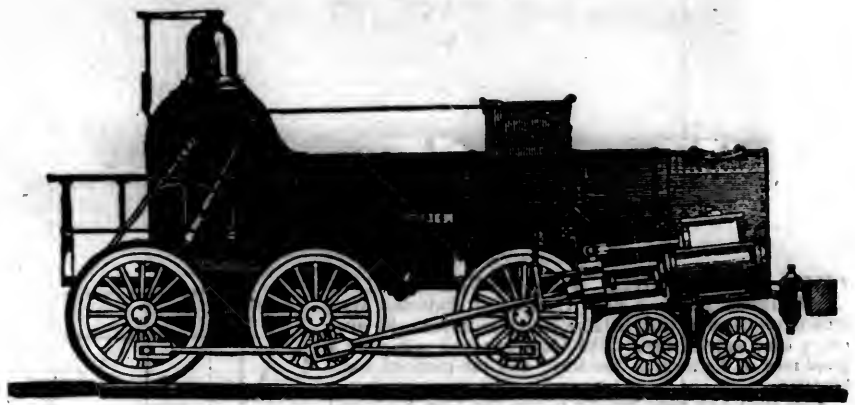
THE Subscriber, Practical Manufacturer of Scales of every description, respectfully asks the attention of Railroad Companies to his Improved Wrought Iron Railroad Track and Depot Scales which for strength, durability, accuracy, convenience in weighing, and beauty of workmanship, are not surpassed by any others in this country.

He is aware that this is rather a bold assertion for him to make, yet he can say with confidence that they have but to be tried to give them precedence over all others.

J. L. BROWN.

Bank Scales made to order, and all Scales of his make Warranted in every particular.

References given; required

NORRIS' LOCOMOTIVE WORKS.
BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,

THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size. Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tyres are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS

PATENT MACHINE MADE HORSE-SHOES.

The Troy Iron and Nail Factory have always on hand a general assortment of Horse Shoes, made from Refined American Iron.

Four sizes being made, it will be well for those ordering to remember that the size of the shoe increases as the numbers—No. 1 being the smallest.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

Etna Safety Fuse.

THIS superior article for igniting the charge in wet or dry blasting, made with DUPONT'S best powder, is kept for sale at the office and depot of

REYNOLDS & BROTHER,

Sole Manufacturers, 51

No. 85 Liberty St.

NEW YORK.

And in the principal cities and towns in the U. States.

The Premium of the AMERICAN INSTITUTE was awarded to the Etna Safety Fuse at the late Fair held in this city.

November 3, 1849.

ly

UNION WORKS,

North street, opposite the Railroad Depot,
BALTIMORE.

Poole & Hunt,

Manufacturers of Steam Engines and Mill Gearing, Machinists' Tools, and all kinds of heavy and light Machinery.

Also put up Arrangements of Wrought Iron Pipes for heating buildings and conveying steam or water. Castings of every kind furnished at short notice.

Every exertion will be made to insure the satisfaction of customers.

Patent Machine Picket Fence

SIX DIFFERENT STYLES of this fence are now made by patent machinery; and is by far the most economical fence for Railroads, Farms, Yards, etc., ever yet offered to the public, costing only from 4 to 30 cents per foot, according to pattern; and is so put up as to be shipped at a trifling expense. Full particulars will be furnished, by addressing the subscriber, to whom all orders could be sent.

N. STRATTON, Troy N.Y.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 136 NASSAU ST., NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.
SECOND QUARTO SERIES, VOL. VII., No. 27! SATURDAY, JULY 5, 1851. [WHOLE No. 794, VOL. XXIV.]

ASSISTANT EDITORS,

J. T. HODGE, *For Mining and Metallurgy.*
GEN. CHAS. T. JAMES, *For Manufactures and the Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & Co., 136 NASSAU ST.

Saturday, July 5, 1851.

LETTER I.

Kentucky, June 16, 1851.

TO THE EDITOR OF THE R. R. JOURNAL:

Dear Sir—As I see but little said in the columns of your valuable Journal about Kentucky and her railroads, and the mode of raising means to build them, I have taken the liberty of troubling you with a sketch of them.

Kentucky has for a long time been asleep to her own interests, and has allowed her younger sister States to pass her in the great internal improvement race; so far, that the friends of internal improvements within her limits had almost despaired of her ever awakening to her own true interests. She has never yet been characterised as a railroad State, but the time is fast coming when she will yet be known as among the foremost.

Her citizens were among the first in the United States to undertake the construction of a railway. They commenced almost simultaneously with the Baltimore and Ohio road, the construction of the Lexington and Frankfort railroad, 28 miles long.

The citizens of Lexington, "the Athens (then) of the West," commenced and completed it at great cost. The result was a most disastrous one to Kentucky, for the stockholders in that road, many of them the leading men in the State, lost all the money they invested. They never, I believe, received one cent in return; and as many of the private citizens stepped forward, subscribed and paid their \$20,000 and \$30,000 each, and lost it all—the result can readily be understood. It gave almost a death blow to individual aid to internal improvements throughout the entire State. The cause of such a disastrous operation was principally owing to a want of knowledge in the construction of railroads at that early period of their history. The road was faulty in its location and construction. It was cursed with an inclined plane at Frankfort, and was laid with a light flat rail. The great secret, however, of its failure was, that there was not business enough then between Frankfort and Lexington, with no further connections, to support so short a road, constructed at so great a cost. The result was, that the road, after a few years, went to decay; and for a time the business upon it was almost entirely suspended. This was the case, when, about two years or so ago, a new company was organised, who purchased the old road from the State (into whose hands it had fallen), constructed four or five miles of new road at great expense, to avoid the plane at Frankfort, relaid the entire road with a heavy rail at a total cost of \$650,000, and it is now doing a fair business.

The great losses suffered in the construction of this road were a complete damper to the construction of any more railroads in Kentucky; for people made up their minds, that if a railroad from Lexington to Frankfort would not pay, why, a railroad in any other part of Kentucky would meet with the same result. They had tried the experiment, and were satisfied.

The next experiment, was the construction of the Slack Water Improvements. The State took this matter in hand, and prosecuted it with vigor, until some two or three rivers were partially slackwatered, when the crash came on, and the State suspended all further operations, never to be resumed. The State spent in this kind of improvement several millions, and partially succeeded in making the Green, Barren, and Kentucky rivers navigable.

The result was, that the investment proved a bad one, as the rivers have never as yet done business enough to keep the locks and dams in repair, and all the money invested in these works is nearly if not quite a dead loss. So ended experiment No. 2 in Kentucky. This second result fully satisfied the citizens of the State (if we except a few) that Kentucky was a State in which it was no use to undertake internal improvements, and they were perfectly satisfied to travel on horseback; for this mode of travelling, if not very cheap or rapid, certainly required no very great outlay of money, and they were at least safe in this respect.

While this latter experiment was going forward, the State also appropriated largely to turnpikes (Macadamised). This system of improvements was extended throughout the State, and with but few exceptions was also a bad investment, as but few if any roads of this nature paid fair dividends upon their cost. The result of this, experiment No. 3, "was a settler," and Kentucky for several years was a finished State—at all events, it was a fixed fact in the minds of a great majority of her citizens, that nothing in the shape of improvement within her bounds would pay; and they therefore, when they made their new constitution, inserted a clause, which entirely prohibited the State from advancing money or credit to any improvement.

Such was the state of things in Kentucky, when the citizens of Louisville (a city, by-the-by, that possesses more natural advantages than any city west of the mountains,) awoke to the consciousness that railways *might* be of some service to their city, and they set about the construction of the railroad to Frankfort, 65 miles. It was for a long time, however, hard work—for individuals would not subscribe—until the citizens voted upon themselves a tax of \$500,000, which was paid to the last cent. This secured the construction of the road, although the city council has from time to time advanced its credit to aid it; and it is now in successful operation through to the Kentucky river, awaiting the completion of a suspension bridge over the river, which will soon be completed, to allow the cars to pass to Frankfort and Lexington. The means for this road were raised almost entirely in Louisville—for I am informed that less than \$40,000 was all the money ever subscribed along the line of road. The private citizens yet remembered with vividness the fate of the private subscriptions to the Lex-

ington and Frankfort road, and would not subscribe to build a railroad.

The stock of the company has been from the commencement of the work much depreciated in value, and a few months since it could be got for 50 to 60. The completion of the road to the Kentucky river, and the large business it is even now doing, although unfinished, some \$12,000 to \$15,000 per month, has opened the eyes of the Kentuckians to the probability that a railroad, if properly constructed, and judiciously managed, may pay in Kentucky—more particularly as the stock has advanced from 50 and 60 to 80 and 90; and it is now confidently believed, that the road when completed will pay not less than eight per cent stock. This is the commencement of a new era in Kentucky, and thus ends experiment 4—successfully. More in my next.

Yours, LOCOMOTIVE.

LETTER II.

Kentucky, June 23d, 1851.

TO THE EDITOR OF THE R. R. JOURNAL:

Dear Sir—In my last I stated that experiment 4 had proved successful. Since then I have seen a report of the operations of the road for the past year and the result is one highly satisfactory to all parties, and fully verifies my prediction that the road will pay 8 per cent. when completed. During the construction of the railroad from Louisville to Lexington, the citizens of Maysville became alive to the importance of a railroad to their city from Lexington, a distance of about 70 miles. They procured a charter in the spring of 1850; engaged an engineer, organised the company by a vote of \$150,000 to the stock of the road by the city, and paid for the expenses of the necessary surveys by direct taxation. The subscription of \$150,000 by the city formed a nucleus around which they proceeded to gather means. The surveys proved the practicability of a road; and the directors and officers of the company have prosecuted every advantage by a policy and energy rarely equalled in the West, until they have, as I am informed, located their entire road to Lexington. They have also placed it under contract for its entire length, to be completed in the fall of '53, and intend breaking ground on the 4th of July; and they have also secured subscriptions to their stock to the amount of nearly \$1,250,000. The entire road is to cost 1½ millions, so that the completion of this road is secured.

A railroad from Covington, opposite Cincinnati, towards Lexington, was also projected about the same time; and it is, I believe, under contract to Paris, 77 miles, where it intersects the Maysville and Lexington road. The Covington company have exhibited great energy and perseverance in urging their road forward, and have, as I observe by the statements of the board in the public journals, some 7 or \$800,000 subscribed towards building it; and the completion of it is, I think, placed beyond a doubt. These two roads are all that are at present in course of actual construction in the State.

The citizens of Danville and the beautiful country around it, lying 35 miles southwest of Lexington and west of the Kentucky river, have procured a charter for a road from Lexington to Danville, and they are busily engaged raising the necessary means to construct it. Their efforts will, I doubt not, prove successful. It is proposed, in case they can succeed in building their road, to eventually extend it southwest to Nashville, or southeasterly

to Knoxville, Tennessee. They have as yet not organised a company, nor made surveys, although they have some \$100,000 subscribed to the road; but I am informed they will soon organise, and have the surveys under way. The crossing of the cliffs of the Kentucky river I hear spoken of as an objection to this road; and a wire suspension bridge of 6 to 800 feet span, elevated some 800 feet above the river, is spoken of. The surveys however, it is hoped, may develop some more economical mode of crossing this formidable barrier.—This road, when completed, will form a most important extension of the Maysville and Covington roads, but will be of great injury to the interest of Louisville, as it will divert the trade of an immense section of interior Kentucky to other points. The probable loss of this important trade to Louisville, has stirred up a warm feeling in that city, and a road is now spoken of to diverge from the Louisville and Frankfort road, a few miles out from Louisville, and to pass to Shelbyville, and thence on to Harrodsburg Springs and Danville, a distance of 45 miles, and eventually to Knoxville. A company is already organised for this purpose; and subscriptions have thus far been obtained to the amount of about \$150,000 towards building it; and it is confidently hoped by the friends of that road, that Louisville and the section of country interested will furnish the necessary means to construct it.

A road is also spoken of to run from Lexington to Georgetown, and thence to Cynthiana or Falmouth, some 25 or 30 miles, where it will connect with the Covington road. An independent charter has not yet been obtained, but will probably be secured this winter if necessary—although the friends of this road contend that the charter of the Covington company permits the construction of a branch from Falmouth or Cynthiana to Lexington via Georgetown. The construction of this road is however problematical, as the citizens of Louisville and Maysville are, I understand, about urging the propriety of constructing a railroad from Frankfort to Georgetown, and then to Paris, where it will intersect with the Maysville road, and also with the Covington road—thus giving the citizens of Georgetown, and the supplies of that rich and fertile section of country, an outlet in three directions, instead of one, as proposed by the branch of the Covington road. That the connection will be formed I think highly probable, as the distance is only 35 miles, and the construction of it would secure to Louisville the trade of a most valuable section of country, that will otherwise be lost to her entirely. It will also shorten the distance from Louisville to Maysville some 15 miles; and I am informed that Louisville is alive to the importance of it.

A charter was obtained last winter for a railroad from Maysville to the Virginia line, at the mouth of the Big Sandy, a distance of about 75 or 80 miles. This road will I think ultimately be constructed; it will certainly be built if the State of Virginia constructs her great central road to the Ohio. The citizens of this part of Kentucky are looking with great anxiety to the action of Virginia in this matter. The construction of the central road from Richmond to Big Sandy, will most assuredly be the means of building the road from Maysville to Big Sandy; and will make the cities of Richmond and Norfolk the importing and exporting ports for all of Kentucky, of western Virginia, of southern Ohio and Indiana, and of all Tennessee. This cannot but be the case, as Rich-

mond is the nearest tide water city to the territory above named by some 2 or 300 miles; and in this age of short distances and speedy transit, this trifle of 2 or 300 miles becomes a matter that will build or ruin a city. I understand that the citizens of Maysville, with characteristic energy, are about raising the means necessary to prosecute the surveys for the road; and it may be set down as a certainty that the road will be built—more particularly, as about 45 miles from Maysville towards Big Sandy will give a railway connection via the Scioto and Hocking Valley road, now under construction, with all of the great lines now constructing through Ohio. The construction of a railway from Maysville to the Big Sandy is also of great importance to Baltimore—as it will permit a person residing in any of the slave States southwest to pass entirely to that city with his servants; and it will also offer to Baltimore the shortest and cheapest connection with Kentucky.

A charter was also obtained last winter for a railroad from Lexington via Owingsville to the Virginia line, at the mouth of Big Sandy; the distance is about 135 miles; and as the country through which it will pass is extremely poor, and very much broken, there is not much hope of its being early constructed—more particularly as it has such a powerful rival in the Lexington and Maysville and Big Sandy roads.

A charter was also obtained some few years since for a railroad from Nashville to Henderson. This is lying at present entirely quiet, and but little hopes are entertained of its being constructed. A charter was obtained likewise for a road from Bowling Green to Nashville, and I am informed that a company has been organised; but I do not know what are the probabilities of the work being carried forward to completion.

The Mobile and Ohio railroad company have a charter in this State, allowing them to build their road from the Tennessee line to Columbus on the Mississippi, or to a point opposite Cairo; and it is I believe conceded that this road will be built.

These are all the present proposed roads in Kentucky; except the great road from Louisville to Nashville and its branches. The distance to Nashville is about 180 miles; and a branch to Columbus, where it intersects the Mobile and Ohio road, is about 200 miles more—thus making about 400 miles in all under one charter.

This is the most important road in the southwest, and will surely be constructed at an early day—as Louisville has signified already her willingness to subscribe one million towards its construction. Thus much for the roads in progress and proposed. In my next I will give you a description of the importance and connections of some of the roads.

Yours, LOCOMOTIVE.

Kentucky.

Louisville and Frankfort Railroad.—We find in the Louisville Courier an abstract of the third annual report of this company, submitted to a meeting of the stockholders held on the 2d ult. The affairs of the company, says the Courier, seem to have been managed with the strictest economy, and with a commendable spirit to promote the interest of the stockholders, in both of which respects the president, directors and chief engineer, seem to have been pre-eminently successful. The road is completed to Frankfort, over which two trains of passenger cars pass every morning and afternoon, between Louisville and the seat of government, each way.

The road has earned, while in the course of construction, the sum of \$16,196 77, and since its completion, the receipts upon the road have augmented in a ratio that surpassed the most sanguine expectation of its friends. The total receipts during the past year ending on the 1st June, were \$40,263 80, against \$22,730 03 for expenditures and outlays of all kinds: leaving the net profits of the road during its progress of construction, in the past 12 months, at \$16,533 77. The following table shows its receipts during each month of the past year, for passengers and freight in the aggregate:

1850—June.....	\$2,112 75
July.....	1,706 05
August.....	1,564 41
September.....	2,197 50
October.....	2,848 41
November.....	2,854 24
December.....	4,527 89
1851—January.....	3,077 72
February.....	3,559 50
March.....	4,668 88
April.....	3,230 05
May.....	5,581 40
	\$39,928 80
Mail service.....	335 00
Total.....	\$40,263 80

Of the above sums, \$25,531 55 was received for passengers, and \$14,397 25 for freight. In the engineer's report, the opinion is expressed with great confidence that the receipts of this road will hereafter reach the sum, annually, of one hundred and fifty thousand dollars, thus enabling the directors to declare a dividend to the stockholders hereafter, equal to 8 per cent per annum.

During the past year, as shown by the engineer's report, the cost per mile run was....38-6 cents.
Receipts per mile run.....65-0 cents.
Ratio of expenses to receipts.....59-38 per ct.

South Carolina.

We give below a statement of the railroads in operation and progress in South Carolina, viz:

1st. *The South Carolina Railroad.* The main trunk line of this road extends from Charleston to Augusta, a distance of 137 miles, with branches to Columbia and Camden; the first 67, and the latter 37 miles—making in the whole 241 miles.

2d. *The Greenville and Columbia Railroad,* extending from Columbia to Greenville, a distance of 142 miles, with branches to Anderson and Abbeville; the former 11, and the latter 12 miles—making the whole length of road 165 miles. Fifty three miles of this road, commencing at the Columbia end, are completed. After leaving Columbia, the road runs up the west bank of Broad river to Alston, 25½ miles, where it crosses. It then runs pretty nearly a west course, by way of Newberry, (which is 47 miles from Columbia) to the Saluda, which it crosses twice before reaching Greenville. The whole line will probably be completed in one year from the present month. Greenville is in the northwest corner of the State, and will be 271 miles from Charleston by railroad. The President of the company is Hon. John B. O'Neale, of Newberry.

3d. *The Charlotte and South Carolina Railroad,* extending from Charlotte, N. C., to Columbia, about 110 miles, some 20 or 30 miles being in North Carolina. The principal points on this road in South Carolina, are Winnsboro and Chester. The road is now completed to a point about 10 miles north of Winnsboro, and is pushing forward rapidly towards Charlotte. At that place it will connect with the North Carolina Central road, through which it will have a northern outlet. The Presi-

dent of this road is E. G. Palmer, Esq., of Chester.

4th. *The King's Mountain Railroad.* We gave a few weeks since a short sketch of this road, which branches off from the Charlotte and South Carolina road at Chester, and runs to York, a distance of about 25 miles. This road, we presume, will be completed during the coming fall or winter. President of this road, Wm. Wright, Esq., of Yorkville.

5th. *Wilmington and Manchester Railroad,* extending from Wilmington to the South Carolina railroad, near Manchester, a distance of 162 miles. About 67 miles of the line of this road are in North Carolina. The whole line is nearly graded, and it is believed, will be completed within one year from the present time. Gen. W. W. Harlee, of Marion, S. C., is President.

6th. *The Laurens Road.* The line of this road branches off from the Greenville and Columbia road, a short distance above Newberry, and runs to Laurens, 31 miles. Eight miles of this road will be completed in October next, and the whole line in two years. President, J. H. Irby, Laurens.

7th. *The Spartanburgh and Union Railroad,* extending from Newberry to Spartanburgh, a distance of about 66 miles. The work on this line has not been commenced. A survey has been made, and a large amount of stock has been subscribed, but no steps have yet been taken towards the commencement of operations in the field.

The following is the aggregate of line of railroad in South Carolina, in progress and operation, viz:

South Carolina railroad.....	241 miles.
Greenville and Columbia railroad.....	165 "
Charlotte and South Carolina railroad.....	110 "
King's Mountain railroad.....	25 "
Wilmington and Manchester railroad.....	162 "
Laurens railroad.....	31 "
Add Spartanburgh and Union railroad, projected.....	66 "
Total.....	800 miles.

Deducting the Spartanburgh and Union road, we have 735 miles of line that either are, or will soon be in operation. It will also be recollected that South Carolina contains 28,000 square miles.—When her area, and the extent of her railroads are taken into consideration, she occupies a very respectable position as a railroad State. When all her works are completed, we may expect that a decided impulse will be given to all her great interests.

Ohio.

Eaton and Hamilton Railroad.—This road, says the Cincinnati Gazette, is progressing most rapidly, and every nerve is strained to bring it into operation as soon as possible, and it is believed that on that part next to Hamilton the cars may be run soon after the cars run from Cincinnati to Hamilton. When the cars commence running, the road will begin to pay the interest on construction and a large profit. There can be no richer country in the world—there is none more prospering than that portion of Ohio and Indiana through which this road passes—and the connections of this road with others, west, north and east, in Ohio and Indiana, are with those which are equally promising as to profit. Mr. Haines, the president, is indefatigable in his exertions to promote the interest of the road. He has made his purchases of iron on advantageous terms, and is having the work done in the best manner.

We also learn that the line which connects this from Eaton west with Richmond and Newcastle is rapidly and vigorously progressing.

Franklin and Warren Railroad.—A meeting of the stockholders of this company was held at Franklin on the 19th ult. We are informed that the best feeling prevailed and a determination expressed to push the work forward. We understand the route will be immediately surveyed, and every effort made by the friends along the line, to raise the necessary funds to complete the work at an early day.

The following named gentlemen were chosen directors:—Zenas Kent, of Ravenna; L. J. Iddings, Warren; Daniel Upson, Tallmadge; Sylvester Huggins, Marvin Kent, Fred. Whipple, of Franklin; Wm. Porter, Newton Falls.

The board of directors will meet on the second Tuesday in July to elect their officers.—*Portage Co. Whig.*

Atlantic and St. Lawrence Railroad.

We learn from the Portland Advertiser, that passenger trains now run daily between Portland and Gilead, distance 60 miles. The cars run to Wild river, which is about two miles this side of the New Hampshire line. The reconstruction at Pleasant river is going on rapidly, and in the most substantial manner. The contractor expects that passengers will reach Gorham, N. H., in the cars on the 4th of July—and that the cars will be able to run regularly every day, as early as the 10th, and to the White Mountain railroad house, which will by that time be open for the reception of travellers, guests, and parties of pleasure and recreation.

Railroad around the Southern Shore of Lake Michigan.

The great "Railroad Conference," held in this city during the last week, did not result in a compromise between the rival interests. Each party made a proposition to the other, which was not acceded to, and the conference adjourned *sine die*. All future attempts at compromise will most likely be made before the courts. The Southern Michigan company, we are informed, claims the exclusive right, by its charter, of constructing a road around the southern shore of Lake Michigan, for 16 years, and during the conference they notified the Central company of their intention to maintain that right by a resort to the legal tribunals of the State of Indiana. On the other hand, the Central feel confident of their right to construct a road from Michigan City to the Indiana State line under the New Albany and Salem charter, and express great confidence of being sustained in that right by the courts, should the Southern company undertake to enjoin them.—*Chicago Tribune.*

New York.

Ogdensburg Railroad.—From the recent report of this company, we learn that the total amount expended upon the road to May 1, 1851, including construction, interest, loss on bonds, equipment, and for every other purpose whatsoever, was \$3,641,426 03.

Of this there is in stock paid in.....	\$1,468,738 82
" " mortgage bonds.....	1,500,000 00
And the balance has been obtained from income, or now exists as a floating debt.....	672,687 21

\$3,641,426 03

The capital of the Ogdensburg was originally \$2,000,000; there remain, therefore, in the hands of the directors, shares to the value of more than \$530,000. These are forfeited to the company and will finally be sold, when par can be realised, to wipe off the floating debt. The gross earnings of the Ogdensburg road from October 1, 1850, to June 1, 1851, the first eight months of its operation, were \$170,646 49. The present floating debt has been diminished by the net profit on these earnings, and there is little doubt, indeed, that the forfeited stock now under control of the directors, will be sufficient to liquidate the floating debt, with the aid of some of the surplus income of the next six

months, over and above the amount required for a fair dividend.

The St. John's railroad to Rouse's Point will be opened in July, which will give Ogdensburgh a railroad communication with Montreal, and send the travel between the Canadas to the Ogdensburgh road. A railroad, also, is now in progress from Bytown, on the Ottawa, to Prescott, opposite Ogdensburgh. This will contribute largely to the income of the Ogdensburgh road. Of the whole earnings in April, less than \$1,000 were for the transportation of western produce that arrived at Ogdensburgh last autumn. The directors speak also of having trusted to their local business, this season, in consequence of the low prices of through freight, and their lack of motive power. They say—

The addition of six locomotives, soon to be delivered, will give us sufficient force to increase our western freights, whenever desirable, without the danger of interference with the through and passenger business, and the continuance of the gravel trains. It has been thought more for the interest of the road to establish a character for promptness and despatch, than to be blocked up by an overflow of western flour, which pays but little profit, and which, with a limited motive power, would most seriously interfere with our great local trade.

The freight earnings of this road were greater in the month of April than the freight earnings of the Michigan Central road in April of last year, although that road is one hundred miles longer than this, and is considered one of the most highly favored in the country. Our earnings from freight are believed to be now greater than the Western railroad between Albany and Boston yielded after it had been two years in operation, although that road is nearly one third longer than this, cost ten millions dollars, and has been one of the most successful freight roads ever built.

The present equipment of the Ogdensburgh railroad consists of 20 locomotives, with tenders, 16 passenger and 401 freight cars, 188 gravel cars, 4 postoffice and baggage cars, and 2 large snow ploughs.

Railroad from Pittsburg to Steubenville.

We are pleased to learn that a bold and decided movement is about to be made between this city and Steubenville, with the view of supplying this link in the great railroad chain from Philadelphia and Pittsburg to Columbus, Cincinnati and St. Louis. A meeting of the incorporators will be held on Thursday next at the Half-way house, on the Steubenville turnpike, when Capt. Chas. Naylor, of this city, will be present, and submit some important facts to the consideration of the meeting. The farmers of Washington and Allegheny counties are determined that this road shall be built without delay; and many of our enterprising citizens have promised their money and their influence to assist in pushing the project forward to final completion.—*Pittsburg Post.*

Ohio.

Columbus, Piqua and Indiana Railroad.—The notice we are able to give of the progress of this road is highly favorable and encouraging to all interested in its advancement.

We learn that at a meeting of the directors, held at Urbana on the 16th ult., the line between St. Paris and this city, of 56 miles, was determined upon for location, and is now under preparation for letting by the 18th of July next. By that time the entire line from the Indiana State line to our capital will be in readiness for contracting. Active measures are taken to complete the connection of this road with the Indianapolis and Bellefontaine road, so that at an early day we may look for a sure, speedy and direct mode of transit between the capitals of Ohio and Indiana. We are also informed that the company lately effected an arrangement with one of our citizens, by which they have secured for the road, if needed, a tract of land contiguous to the city, and favorably adapted for freight depots, engine houses, etc. In addition to this,

\$50,000 was subscribed at the meeting towards its stock.

In view of the district of country through which the route of this road lays—the towns located upon it, and the important connection which it forms with the canal and other railroads, a large way and through traffic is secured for it. Its prominent position as a link in a grand chain extending from the Ohio to the Mississippi river, its consequent office in collecting, carrying and disbursing the products of the far west, all constitute it a constituent part of one of the most important roads of the west.

Under the direction of A. G. Conover, Esq., the chief engineer, we have every assurance that the road will be in no way inferior to any other in the State, as to the character of its construction; and with the ample means in the hands of the directors, we have no doubt of its speedy completion.—*State Journal.*

Maine.

Androscoggin and Kennebec Railroad.—The annual meeting of the stockholders of this road was held at Lewiston on the 1st instant. The following is a list of the directors chosen:

Wm. Goodenow, of Portland; Edward Crane, Boston; Wm. C. Taber, New Bedford; Anson P. Morrill, Readfield; Samuel Taylor, Jr., Fairfield; R. B. Dunn, Waterville; Benjamin E. Bates, Boston.

A resolve was passed that the directors be authorized to offer to the Atlantic and St. Lawrence railroad company the same terms that were last offered by the committee—31 cents for passengers, and 33 cents per ton for freight from the Junction to Portland, 27 miles—and if not acceded to within 60 days, then a committee (which was raised) was instructed to procure signatures to a petition for a new road to connect with the York and Cumberland railroad at Gorham or Saccarappa; so as to take the through travel entirely from Portland.

An unfortunate misunderstanding has for a long time existed between the above companies, as to the amount that should be allowed the A. & K. for freight and passengers delivered at the junction. Without presuming to know anything of the merits of the case, we can see no reason in the rejection by the Androscoggin and Kennebec company of the proposition of the Atlantic and St. Lawrence to submit their difference to the arbitration of indifferent persons. To differ in opinion does not imply anything censurable; but in business matters, to refuse to submit differences to the decision of an impartial umpire, certainly raises the presumption that the party refusing has no confidence in his case. We hope that the Androscoggin and Kennebec company will not build their proposed extension, as it will add a still greater weight to the burden that oppresses them. Their road has already cost a great deal too much, and the extension would only add to its debt, without materially increasing its receipts.

Pennsylvania.

Lackawanna and Western Railroad.—This road is to be opened for traffic on the 1st of September next. It extends from the Lackawanna coal mines to the Erie road at Great Bend, 48 miles, and is of the same gauge as the Erie. It will add largely to the business of the Erie railroad, and will supply the central and western portions of this State with coal at a very low cost.

If, as is contemplated, this road should be extended to the water gap, to meet the Morris and Essex, now in progress to that point, a double track would be formed over the most difficult and dangerous part of the Erie railroad; and by the completion of

the Hornellsville and Conhocton Valley roads, nearly the whole distance to Lake Erie.

Land Damages in Ohio.

Land damages are settled in a very sensible and summary way in Ohio. The Central railroad company having occasion to take a lot, containing about 14½ acres, and being a part of a large tract belonging to the estate of John McIntire, applied for a commission to ascertain damages. The commission (appointed by court) decided that the road, and the location of the depot grounds, would benefit the remainder of the land to a greater extent than the value of that taken, and appraised *no damage*; so that the company got 14½ acres for *nothing*.

In another instance, the company took lands to the value of \$3,000; but as the owner was benefited to the amount of \$1,500 by the road, the commission allowed him only \$1,500, or one half the value of the land.

We see nothing wrong in this; there certainly can be no reason in paying a man \$1,000 for taking his land for a railroad, when the very act adds \$10,000 to the value of what remains. The Hudson River road paid something like \$500,000 for right of way between New York and Poughkeepsie; while the persons to whom this was paid were benefited by the road to an amount equal to twenty times that sum.

Indiana.

Indianapolis and Bellefontaine Railroad.—The Madison, Ia., Tribune, of the 10th ult., states that the opening of the Indianapolis and Bellefontaine railroad to Anderson, the county seat of Madison county, being a distance of thirty-six miles, will be celebrated on Thursday, the 26th inst., on which occasion addresses will be delivered by Governor Wright, Gov. Wallace, Senator Bright, Caleb B. Smith, and others.

The Baltimore and Ohio Railroad.

The accounts from along the whole line of the railroad, now in progress of being constructed from Cumberland to the Ohio river, are most encouraging, and there is now no longer reason to fear that it will not be completed to the several points at the time designated by the chief engineer. The following table designates the several points, and the times when the roads will be completed to them:—

Piedmont.....	July 4, 1851.
Cheat River.....	November 1, 1851.
Tygart's Valley Bridge,	February 1, 1852.
Fairmont.....	April 1, 1852.
Wheeling.....	January 1, 1853.

At the last monthly meeting of the board of directors, Mr. Swann, the President, announced that the road would be ready to be opened to Piedmont on the 4th of July, and he was authorized to make arrangements for an excursion about that time, to that point.

When the road is completed to Tygart's Valley Bridge, which it will be next February, a line of stages will run from that place by the Northwestern Turnpike, to Parkersburg, (Va.) on the Ohio river. This will shorten the distance materially in Cincinnati, and all points south and west of that city, and passengers will pass between Baltimore and Cincinnati in something like a day less time than now. When completed to Wheeling, the journey from Baltimore to Cincinnati may, with the use of the other railroads which will then be completed on the Ohio side of the river, be made in something like twenty-four hours! It will not be long thereafter when the railroad will be completed to the Mississippi, and then the traveller will be carried from Baltimore to St. Louis, it may be in forty-eight hours. To do this, however, it will be essential that the branch road from Tygart's Valley Bridge to Parkersburg, should be made. In view of the time, when the law of Virginia contemplates that road to be commenced to be made, it is every

way proper that the people of Baltimore should at once begin to prepare to take their part in the enterprise, so that when it is commenced no time should be lost in its earliest possible completion.—*Baltimore Patriot*.

Massachusetts.

Amherst and Belchertown Railroad.—A meeting of the Amherst and Belchertown railroad company, was held in Amherst on the 30th ult., for the purpose of organization and other preliminary measures. The meeting was large and spirited. Seven directors were chosen as follows:—Hon. Edward Dickinson, Hon. Ithamar Conkey, and Luke Sweetser, Esq. of Amherst; Col. T. W. Williams and A. C. Lippert, Esq., of New-London; Joseph Brown, Esq., of Palmer, and Hon. Myron Lawrence, of Belchertown. By-laws were adopted, and a proposition made by the New London company, to run the road when built, and pay therefor one half the gross receipts.

Genesee Valley Canal.

We learn that the water was let into the Genesee Valley Canal from the Shaker settlement, in Groveland, to Oramel, 36 miles, on Saturday, the 14th ult. The people of Nunda, Portage, and the northern towns of Allegany county are to be largely benefited by this new thoroughfare. Large amounts of lumber, shingles and staves, which had been deposited upon the banks of the canal in the town of Canadaca and Belfast, in anticipation of the opening of this section, are now being crowded to market. We hope the day is not far distant when the Packet's bugle will be heard reverberating through the valleys of the Cattaraugus. Already we see in the Allegany papers, an advertisement of the "New York and Olean Line" of Canal boats.

Indiana.

Indiana Central Railroad.—Our readers are perhaps aware that the last legislature separated the Terre Haute and Richmond railroad east of this city from that part west, and that the name of Indiana Central Railway was given to the eastern division of the road extending from the state line east of Richmond to this city. Soon after the passage of the law referred to, the new company organized by the election of thirteen directors, who are amongst the most wealthy and influential citizens of the eastern part of the state. Of this board Samuel Hannah, Esq., of this city, late State Treasurer, is President. The organization is such as to command the entire confidence of the country and furnish a guarantee that the business of the company will be well and properly managed, and its funds judiciously expended. The directors have just had the line of road permanently located by H. C. Moore, an engineer of high standing from the eastern part of the state, and the location is said to be a very favorable one. The length of the road is 71½ miles, of which but 3½ miles, or about 5 per cent. is curved road, leaving 95 per cent. of straight lines, one of which is over 21 miles in length, another 14 miles. This is believed to be entirely unprecedented in this country. The company design having the road constructed in the most substantial manner, and when so built, it must be a road which can be travelled with very high speed.

The road has been divided for the purpose of construction, into five divisions, and as fast as stock is subscribed on each division, enough to do the grading, the work is to be put under contract. Under this arrangement the first division extending from the state line to Centerville, 10 miles, and the fourth division from Knightsville to Greenfield, 13 miles, have been put under contract, and the contractors are now actively at work on them. On the 2nd and 3rd divisions, extending from Centerville to Knightstown, a considerable amount of stock is taken, and it is confidently expected that a sufficient amount will be obtained to authorize the commencement of these divisions within the next six weeks. On the fifth division, from Greenfield to this city, no effort has yet been made to obtain stock, but we learn that in a short time the citizens along the line and in this city, will be called on to subscribe. We hope soon to be able to announce that the whole

line is in the hands of contractors, and rapidly going ahead. In this connection we may state that we have information from a reliable source, that the Dayton and Western railway, which is a continuation of the Indiana Central road from the state line to Dayton, is now rapidly approaching completion. The grading is nearly finished, the iron has been purchased, and in August they will commence to lay it down; and in January next they expect to have the cars running over the road to the state line and perhaps to Richmond. By that time also the western end of this road from this city to Terre Haute, will be finished, and the cars running regularly. Who then can doubt the success of the "Indiana Central railway?"—*Indiana State Journal*.

New York.

The *Yates County Whig* states that the work on the Canandaigua and Corning railroad has been retarded by several causes, and among others an immense rock excavation about three miles south of Penn Yan, from which marketable stone has been taken to the amount of \$7,000 worth, on the ground. The company will not be able to make the contemplated excursion to Penn Yan from Jefferson on the Fourth of July, but it is their intention to complete the road and make trial trips in the latter part of July, and commence the regular business trips on or about the 1st of August.

A meeting of the Rochester common council was held on Thursday evening, to take into consideration the propriety of petitioning the legislature to pass an act, submitting to the people of that city the question whether the common council shall issue city bonds for the amount of stock required to be taken in the Genesee Valley railroad.

For the American Railroad Journal.

The Hempfield Railroad.

In this age of progressive improvement, everything connected with the progress of railroads in any part of the country, is interesting to the public. The New York and Erie railroad lately opened is the longest continuous road in the United States, and now forms a most important line of communication by the lakes between the city of New-York and the great West.

There is, however, another line of communication between the Atlantic cities and the valleys of the Ohio and Mississippi, which, from the shortness and directness of its route, is attracting a great deal of attention and which promises to be one of the most important thoroughfares in the United States. It is known that the great central road of Pennsylvania, from the city of Philadelphia to Pittsburg, is in a considerable state of forwardness and will ere long be completed. Connected with this road and diverging from it at Greensburg, in Westmoreland county, about 30 miles east of Pittsburg, a company has been organized, called "The Hempfield Railroad Company," to construct a road directly through Washington, in Washington county, to the city of Wheeling, where in its course west it will connect with the central railroad of Ohio, which passes through Zanesville and Columbus, in the direction of Indianapolis, and will be extended through Terre Haute to the city of St. Louis. From Zanesville, on the line of this central railroad of Ohio, a company has been incorporated to construct a road through Lancaster, Circleville and Wilmington directly to the city of Cincinnati. An inspection of the map will satisfy any enquirer that this route will be by far the shortest route of any road now in progress or in contemplation between the city of New-York and Cincinnati and St. Louis, and promises

to secure to it an immense amount of trade and travel from the growing West.

It will be found, on examination, that an air line drawn from St. Louis to New York passes nearly through Columbus, Zanesville, Wheeling, Washington and Greensburg, and a particular scrutiny is invited into the merits and claims of this new line of communication. It is believed that it possesses superior claims to any other line which has been proposed or which is now in existence.

The Hempfield railroad, forming the connecting link between the central railroad of Pennsylvania and the central railroad of Ohio, will be less than 80 miles in length, and passes through a fertile, well cultivated, productive and thickly settled region of country. Its location and construction have been placed under the charge of Chas. Ellet, Jr. Esq., the distinguished artist who constructed the Niagara and Wheeling river suspension bridges, and who is favorably known throughout the country as an accomplished engineer and as an efficient business man. He has examined the route of the road and found it entirely practicable. By his recommendation the Board have authorised the definitive surveys to be made without delay with a view to the early commencement and final completion of the work. It will go on speedily and promptly, and although this link of the Hempfield connection is a short one, yet, it is believed that no one can be found in the country which will surpass it in importance, usefulness or profit.

Rouse's Point Bridge.

This vexed question is at last disposed of. The bill which has just passed the legislature of this State, provides that the Northern railroad company may, in the first instance, extend their pier at Rouse's point, to a point two hundred and fifty feet from the centre of the channel of the outlet of the Lake, being the dividing line between the States of Vermont and New-York. If the legislature of Vermont shall authorise the Vermont and Canada railroad company to advance their pier on the east side of the Lake to a point one hundred and twenty-five feet from the centre of the channel, then the Northern railroad company may advance their pier a corresponding distance, thus leaving only a space of two hundred and fifty feet.

The law strongly guards the interests of the navigator. The pier is to be supplied with spring piles, as fenders, snubbing posts, &c. Vessels may moor beside the pier, at all times free of charge. The pier is to be kept lighted during the night in the season of navigation.

"It is believed," says the *Albany Evening Journal*, "that the law secures to the inhabitants of the Northern counties what they have so long and ardently desired—a safe and dry crossing in the winter season. The boat now constructing by the Vermont and Canada company being fifty feet longer than the space between the ends of the piers—each end resting and being supported in the slips to be constructed within the pier—will remain firm in its place, and afford a permanent track.

"We rejoice in the result—not less on account of its benefits to our Northern friends, than the cheering indication it affords of the disposition exhibited, to open wide all our avenues of trade—to lay aside all petty jealousies and rivalries, and to share alike and compete manfully for the benefits of the commerce of the country. This disposition

may safely be indulged. The West is yet in its cradle. When its manhood shall have become developed, she will cry for increased facilities for her products."

Ohio.

Akron Branch Railroad.—The last week was one of interest to this enterprise.

On Tuesday the county of Summit voted by a majority of seven or eight hundred, to subscribe one hundred thousand dollars to the stock of the company. On Saturday, the grading and masonry on the northern division of thirteen miles from Hudson to Akron, was let to several different contractors, believed to be men of high character and responsibility, at prices varying somewhat below the engineer's estimates. The contractors are already busy in preparing for the work.

The portion of the line between Hudson and Cuyahoga Falls, is to be finished by the 15th of October next, the remainder by the 1st of April next.

Contracts are made for locomotives to be delivered in September; and negotiations are pending for the iron which will probably bring it here in time for laying the track as soon as the road bed is prepared for it.

The commissioners of Holmes county have agreed to subscribe \$75,000 to the stock of the company, in case the work should be prosecuted immediately into that county. To this amount, from forty to fifty thousand dollars in addition are understood to be pledged by individual subscribers.

Engineers will be immediately put on the survey and location of the line beyond Akron, and the work carried forward with all practicable dispatch to completion.

We may reasonably hope, therefore, that in a year or a little more, the cars will be running from this point to the Ohio and Pennsylvania road, which with its connections will open a direct communication with Cincinnati, and also across the Ohio and Pennsylvania road to Millersburg, the county seat of Holmes county.

Few railroad enterprises, in our opinion, promise better than this at the present time.—*Hudson Ohio Observer.*

Lead in Missouri.

We learn from the *Southwestern Flag*, that the lead mines in Jasper and Newton counties, in this State, are now worked with great activity, and that recent discoveries of large quantities of ore have been made. The *Flag* says, of the Turkey creek mines:

"In several places we see where the miners had struck leads of from nine to twelve inches thick. These leads or veins all appeared to be standing on edge, a sure indication, we believe, of a large quantity of mineral. As to the depth or extent of the veins or leads, we could form no idea. Mr. Cox showed us one shaft, out of which had been taken from 80 to 100 pounds of ore. This mineral was of the richest quality, and was on the land owned by the firm of the Messrs. Scott's and Judge McKee. From Turkey creek mines, we visited the Mammoth mines, on Shoal creek, belonging to Mr. George Mosely, of Neosho. Here we found the miners, to whom we return our thanks for their kind treatment in showing us the mines, and answering our many inquiries. Mr. Mosely has a furnace in full blast, and is making a large amount of lead. We were down in the mines and picked out the richest of mineral, sixty feet under ground.

"The ore was struck in these mines at about the depth of forty feet, and still continues down. There appears to be sheets of ore from nine to fifteen inches thick, running horizontally, about every four feet. These sheets have the appearance of extending to a great distance. In addition there is one lead or vein, standing on edge, which furnishes great quantities of the very richest of mineral. Mr. Mosely appears to be working these mines with great energy and enterprise, and is melting a large amount of lead. We also visited the mines at Mr. Johnson's, on Grove creek, near Carthage, where there is another prospect of large

quantities of mineral. From what we understood when at the mines we did not see the finest prospect for mineral. The mines of Mr. Gilstrap, near the Mammoth mines on Shoal creek, are said to be the richest yet discovered. The Gilstrap mines were anxious to see, but failed for want of an opportunity. We, however, saw sufficient to satisfy us there is any quantity of mineral in that section of country. The mineral discoveries have in this very short time caused a very large emigration to those counties, and it is thought the population will be doubled in two years.

"Miners from south-east Missouri, from Galena and Wisconsin, are flocking to these new discoveries, confident their labor in mining will be paid with an abundant yield of mineral. We have no doubt their labor will be amply rewarded. Since our return, we understand additional discoveries have been made near Carthage."

From the London Times.

Whitney's Great Atlantic and Pacific Railway Project.

On Monday evening, a meeting of the Geographical Society of London was held at the King's College, (Sir Roderick Impey Murchison in the chair,) when Mr. Asa Whitney, the proprietor of the gigantic scheme of a railway from Michigan to the shores of the Pacific ocean, attended and read, before a distinguished assemblage of members and visitors, an interesting paper on the general features and importance of the enterprise.

Mr. Robert Stephenson, C. E., stated as his opinion that the only difficulty, as regarded a long railway, was a commercial one. He had no means of offering any opinion as to the facilities for the execution of Mr. Whitney's project; but he would take it that what Mr. Whitney himself stated on that point was correct, and that the plains abounded with timber and every requisite for constructing the line from the Atlantic to the Pacific. Yet the commercial question outweighed almost everything which Mr. Whitney had adduced as to distances; for, as regarded navigation, it all depended on the amount of money charged for conveying goods from one place to another, rather than on the number of miles. This was plain from the case of the line by the Isthmus of Suez, as compared with that via the Cape of Good Hope to India, owing to the difficulties of navigation in the Mediterranean, where you must have a lee shore everywhere, if you have a gale. The effect was, that the freights of goods from Liverpool to Alexandria, exceeded those from Liverpool to Bombay round the Cape of Good Hope. This almost satisfied his mind that the opening of a communication between the Red Sea and the Mediterranean, by water, would be of no avail, commercially speaking. The construction of a railway to save time, for mails and passengers, was a feasible project, and deserving of the attention of England; but with regard to the opening of a canal, supposing the facilities to be so great, and that, in fact, the money in question was as much sunk as Mr. Whitney supposed it to be sunk as regarded this project, he (Mr. Stephenson) believed that if a canal was made, the commerce between England and India would not then go by the Mediterranean and the Red Sea. In fact, he thought it the Isthmus of Suez were swept from the face of the globe, as Mr. Whitney supposed the Isthmus of Panama to be, that still the commerce of the world would not pass through it.

But he preferred the Northern route of the railway to the Southern, believing that in our territory there were greater mineral resources, and that large fields of labor would be opened up there. Doubtless a great project of that description ought to be for the benefit of the whole world; but he could not but see that if Mr. Whitney's original plan were carried out, all the local advantages and profit would go to the United States, and he should prefer that some of the benefit was secured to our own colonies. If Mr. Whitney's original plan were not carried out in the territory of the United States, he was satisfied that nobody could render more assistance than that gentleman could in carrying the project out for our own country.

Col. Lloyd said it would take 220 years to complete this project, and we could not afford to wait so long as that. Besides it would place the whole of our commerce at the mercy of the United States

and our North American Colonies. Another project was, that all our merchandise coming from the tropics, the East Indies, China, and all those parts, would have to traverse so vast an extent of country, and having arrived at New York or Nova Scotia, would have then to undergo the transit to England by a passage which was the most injurious of all to goods during three or four months of the year. These considerations appeared to him to strike a deadly blow at the projected railway across the American Continent.

Sir Edward Belcher, R. N., considered the project untenable as a route for commerce, and thought that if the land was settled, and gold should be found in the interior, the gold would not pay for the expense of carriage to the coast.

Capt. Fitzroy, R. N., said his humble opinion, as a seaman, was, that in case of the route by Panama being opened, the commerce of Asia would, as a matter of course, take that line, for the simple reason that it was the easiest line of navigation with all parts of the world. The commerce of Europe and of the greater part of North America would find favorable winds to carry it to the Isthmus, and also to carry it on its route across the Pacific to the whole of the Australian colonies and Asia generally. Sailing ships, in returning from the Australian colonies, or from the south of the Equator, would return by the westerly winds below the tropic, and then through the Isthmus of Panama by the West India islands, and taking the course home now followed by the West India traders, thus avoiding the Cape of Good Hope and Cape Horn.

A ship from China and the north of the line would go by the Northern Pacific, taking the Western winds which there come down from California, until she got into the trades, which again would carry her to the eastward until she got to the Isthmus of Panama, and from the Isthmus the passage would be as before. That the opening of the Isthmus of Suez would not have the same advantage he believed, for reasons assigned by Mr. Stephenson, viz.: the dangers of that narrow passage of the Mediterranean, the Red Sea, and also Indian Ocean. Therefore, the open route to India was preferable for commerce, as having less risk, however easy might be the passage by water through the Isthmus of Suez itself; but, of course, a railway by Suez would have great advantage as regarded the transmission of passengers and mails.

He objected to Mr. Whitney's project on account of the great elevation of 7000 feet to be overcome. Now a rise from a level country to a height of 6000 or 7000 feet, was an elevation altogether unprecedented in railway enterprise. A rise of some hundreds of feet was a formidable objection to the engineer; but to carry a railway through a wild and totally uninhabited country, advancing ten miles at a time, would take a very considerable number of years to complete the first 700 or 800 miles; and although the settlement of the route was contemplated, yet the increase of population must be gradual, and the building of houses for them must occupy a considerable period. He hoped the Indians in these regions would be made friends; but if they became enemies, there might be great difficulty in pushing their way with a railroad in that manner. That, however, was perhaps but a minor difficulty—the 7000 feet of elevation was the greatest obstacle. Then again with regard to the transport of goods, there was little likelihood of a transshipment, because with the powers of steam in the present day, water carriage of any distance was a very small expense, and the time was certain. Therefore the prospect of commercial remuneration in the sequel appeared to be very remote. The character of the winds between the different countries, and the currents, was so well known that the voyage even of sailing vessels could be calculated to a very short time. But he thought Mr. Whitney was mistaken in saying that the voyage could be made from Oregon or Vancouver's Island, across to Canton, with equal facility either way. The voyage could be made from the west side to America, with great ease; but from the trade winds, the voyage in the contrary direction was attended with difficulty. However valuable the project, therefore, might be to the United States, it could not possibly be of use to Europe and the Asiatic world. It seemed to him a ques-

tion more relating to the United States and the Canadas than to Europe.

Mr. Whitney is treading on dangerous ground. He should never unfold his scheme to men of sense or experience. This will never do. Mr. Stevenson in his remarks, has only repeated the opinion of every engineer of reputation in this country. Mr. Whitney took very good care to keep clear of this class of our citizens, but it seems he ventured a little in England, thinking, probably, his plan would escape detection there. If he had any strength in this country, the remarks of Mr. Stevenson and others would seriously damage his case.

Missouri.

Pacific Railroad Company.

We have received the first annual report of the board of directors of the Pacific railroad, submitted to a meeting of the stockholders held at St. Louis, on the 30th March, 1851. The preliminary organization of this company took place on the 31st January, 1850. On the 4th of February following, books for subscriptions to the stock of the company were opened at the Merchants' Exchange, in St. Louis, and 4,416 shares were taken in that city alone. On the last Monday in March following, the board of directors were elected, as prescribed by the charter, and the services of James P. Kirkwood, Esq., of New York, were obtained as chief engineer. Under his charge the preliminary surveys were commenced, with two parties, on the 24th of May, and embraced the Merrimack Valley route, crossing the Gasconade and Osage rivers, south of Jefferson city, and subsequently the Missouri river route as far as Jefferson city, and also a line from the main line, near Cass county, to the Missouri river, near the mouth of the Kansas. The field work of these surveys was closed on the 29th of November, and the report of the Chief Engineer (which accompanies the report of the board of directors) was completed in January of this year. These surveys were conducted with the greatest intelligence and ability, and comprehended a general examination of the country, and an instrumental survey of three routes to the Gasconade river, viz.:—1st by the Merrimack Valley; 2d by Union Ridge, and 3d by the Missouri Valley, with continuations condensed into two routes to Jefferson city—one route crossing Osage river, south of Jefferson city, and passing by Versailles, and surveys continued to the state line in Cass county; and also by Independence to Kansas. These surveys embraced an extent of country of over three hundred miles in length, and of from twenty to thirty miles in width, the aggregate length of the different lines being 825 miles.

To meet the expenses of these surveys, the board of directors, in May, made a call upon the stockholders for an instalment of five per cent. upon their subscriptions, one half of which was made payable on the first of June, and the remainder on the first of August, 1850. The instalments were paid, in most cases, with great promptitude, the amount received therefrom being \$24,517 50. There yet remain unpaid \$2,687 50, which it is believed will be nearly all collected.

The total amount expended last year for instruments, outfits, engineering, rent, &c., is \$20,056 65, leaving a balance in the treasury on the 31st March 1851, of \$4,943 78.

Among other favorable indications, it may be mentioned that a general disposition prevails among the people of those counties situated on or near the proposed line of road, to aid this work by every means in their power. In many cases votes have been taken in favor of subscriptions by the

respective counties. Only two counties, however have as yet actually subscribed, viz.:—St. Louis county, which has subscribed \$100,000, and paid the first instalment of five per cent., and Jackson county, which made a conditional subscription of \$100,000, payable when the road is completed up to the Jackson county line.

The total amount of actual subscriptions to the stock, of all kinds, to the time of making the report, is.....	\$544,100
To this add the conditional subscription of Jackson county.....	100,000
Individual subscriptions in Cole & Franklin counties, about.....	14,000
Subscription voted by people of St. Louis.	500,000
	\$1,158,100

Before any part of the state loan can be made available, it will be necessary to raise by subscriptions the further sum of \$341,900, making a total of a million and a half of dollars, upon which the state will make a loan of an equal sum, making a capital of \$3,000,000. If, however, the stock subscriptions should amount to two millions, the state will advance an equal sum, when the available means of the company would amount to \$4,000,000. To secure to the state the payment of the annual interest, and the ultimate redemption of the principal of this loan, the company are to mortgage their road and its appertences, to the state, from time to time, as the bonds are issued and accepted by the company.

The application of the company to Congress for a grant of the right of way through the public land, and also for a donation of alternate sections of land along the proposed route of the road, although supported by numerous petitions from people in different parts of the state, and by the entire delegation of Missouri in Congress, was not so successful. A bill granting the state, in aid of this work, alternate sections of land in a space six miles wide, on each side of the road, passed the Senate of the United States, and the report states would probably have passed the house of representatives could it have been reached. The board anticipate a favorable action upon the bill, at the next session of Congress, as that grant, added to the other available means of the company, would enable them to construct the entire road to the state line. It is believed that the value of the remaining sections would be sufficiently enhanced to render the United States gainers by the operation; and already large amounts of lands subject to private entry, have been taken up in the vicinity of the lines of survey. The board of directors, however, believing that it is important that a commencement should be made of the work, have concluded that some 40 or 45 miles of the road may be located and put under construction the present year, without necessarily fixing the route of the remaining part of the line, leaving the location of that part undecided, until another appeal shall be made to the liberality of Congress.

The first part of the line will be the most costly, and the forty miles proposed may be estimated at about \$1,000,000, including lands for buildings in St. Louis, land damages, superstructure, buildings, machinery and cars. The estimated cost for the whole road of about 300 miles, will be about six millions of dollars, including everything necessary to put the road in complete working order. The maximum grade is about fifty feet to the mile, but this may possibly be reduced. The general plane of the country south of the Missouri river, is shown by these surveys to be somewhat higher than has been generally supposed. In going west forty

miles, there is a rise of four hundred feet above high water of the Mississippi; at 110 miles distant, near the Gasconade, is an elevation of six hundred and fifty feet; at 200 miles, seven hundred and fifty five feet; and at the state line, six hundred and sixty-six feet above high water at St. Louis. The valley of the Gasconade is 490, and that of the Osage 380 feet below this general plane, and the country as far west as the Osage is much broken, making considerable curvature and undulation in the line necessary. The valleys of the Missouri and of the Merrimack, however, as far as they can be followed, both admit nearly level grades. The former route is somewhat the shortest, being at the same time per mile the most costly. The selection of the route was left to the new board of directors, who held a meeting on the 18th of June, and unanimously adopted what is termed the Merrimack route by the following resolution:—

Resolved, That the route through Chouteau Pond valley, and the valley of the Des Peres, to the Merrimack valley, and up that valley for a distance of about thirty-nine miles from St. Louis, commencing in St. Louis at Fourteenth street, be adopted as the first division of the Pacific railroad.

Accompanying the report of the directors, we have the report of the chief engineer, which we shall present to our readers in our next number.

Catawissa Railroad.

A large and enthusiastic meeting of the citizens of Tamaqua was held at that place on the 26th ult., to take into consideration the best means of aiding and securing the construction of the Catawissa, Williamsport and Erie railroad, and for the purpose of impressing upon the minds of the people of Pennsylvania the importance of completing a direct line of communication between Lake Erie and the city of Philadelphia. Dr. W. W. McGuigan was appointed chairman of the meeting; Messrs. R. Ratcliff, R. A. Heaton, J. Carter, J. Johnson, J. S. Boyer, C. Dannehauser, H. S. Denniston, A. H. Deuel, and Wm. Taggart, jr. vice-presidents, and E. J. Fry, secretary.

Several spirited addresses were made by the chairman, Mr. Richard B. Osborne, the engineer of the line, and other gentlemen; in which the advantages of the proposed line were set forth, as enabling the citizens of Pennsylvania to secure a share of the trade flowing from the great West, which now is almost entirely monopolized by New York. The enterprise and increasing prosperity of Baltimore was also adverted to: and it was stated that she too was alive to her interests in this respect, and through the State of Pennsylvania was about to construct a line to the very point which the Catawissa, Williamsport and Erie road was first aiming to reach: viz. the town of Williamsport. As the latter line would be speedily put under construction, the race would be between the two companies for completion. Baltimore, from Harrisburg to Williamsport, has ninety three miles to construct, while Philadelphia has but fifty-one miles, and the superstructure of thirty-six to lay down.

The following are the resolutions adopted by the meeting:

Resolved, That in the opinion of the inhabitants of Tamaqua, it is the duty of the people of Pennsylvania to remain no longer passive and indifferent to the humiliating condition of seeing her sister States, New York and Maryland, by their superior foresight and energy, monopolize the whole of the traffic of the Great West; thereby undermining the commercial prospects of Pennsylvania, and drawing from her those advantages which her natural position legitimately proffers.

Resolved, That as citizens of the Keystone State, it is of paramount importance that Pennsylvania should have without further loss of time an independent communication to Erie—the first port on the western lakes. That in view of this, as Pennsylvanians, we are but performing a duty by appealing in the strongest terms to all our citizens, to support and secure the construction of the Catawissa, Williamsport and Erie road. That inasmuch as the contractors are now on the line, the iron purchased for the whole distance to Williamsport, and it is known to us that the engineers have received instructions to push the work on this portion of the route, we do feel impatient to contribute to the commercial prosperity of our whole State, and call upon all—and particularly the people of Philadelphia, the corporation of that growing city, our State legislators and our worthy governor Johnson, to make common cause, and by united efforts at once supply the means of putting the rest of the route from Williamsport to Erie under contract.

Resolved, That we look forward with anxiety to meetings being held in Philadelphia, Reading, Catawissa, Williamsport and Erie, as points more immediately interested, to bring before the people the true prospects that await them as a reward for the long delayed, but still timely enterprise of forming a main avenue from Philadelphia to her own port of Erie and through her own territory.

Resolved, That we the citizens of Tamaqua, do hereby pledge ourselves collectively and individually to use every effort in our power to aid in the completion of the Catawissa, Williamsport and Erie railroad.

Resolved, That a committee be appointed to confer with our fellow citizens along the line, and to make arrangements for a general meeting of the friends of the road from all points, to be held at Catawissa at such time as the committee may determine.

Wilmington and Manchester Railroad.

\$300,000 Seven per cent. Mortgage Coupon Bonds.

SEALED PROPOSALS will be received by the subscribers, until **THURSDAY**, the 10th day of July next, for three hundred thousand dollars of the first and only Mortgage Bonds of the Wilmington and Manchester Railroad Company, bearing interest at the rate of 7 per cent. per annum; principal and interest redeemable in the city of New York; the principal on the 1st June, 1866.

The Bonds are in sums of \$1000 each, with coupons payable at the Merchants' Bank, New York, on the 1st December and 1st June in each year, convertible into the capital stock of the company, at the option of the holders.

They are issued under acts of the Legislatures of North and South Carolina, secured by a Mortgage or Deed of Trust, to Edward Sanford, Esq., of New York, in trust for the holders of the Bonds.

The Deed of Trust covers the entire line of road completed and to be completed from Wilmington, in N. C., to Manchester, in S. C., a distance of 162 miles, costing, when completed with a heavy T rail, and equipped, \$1,600,000. The extraordinary adaptedness of the country to the construction of a railway accounts for this low cost.

The Trustee is empowered, in case of 60 days' default in payment of principal or interest, to take possession of the entire line of road, with its equipments, stations, income, franchise, &c., the same to sell, at his discretion, to the highest bidder for cash to pay arrears of principal or interest.

The whole amount of bonds authorized to be issued by vote of the stockholders, at a meeting called for that purpose in April last, and an order of the Railroad Board, is \$600,000, to raise means to pay the residue of the iron rails and equipments, only \$300,000 of which are now offered for sale.

The Company will owe no other debt when the road is completed.

This road will prove an important link in the great chain of railroads from Boston, New York, and Philadelphia, to New Orleans, connecting at Wilmington with the Raleigh and Wilmington railway, now in successful operation at Manchester, with the great South Carolina railroad leading

from Charleston, in the direction of Montgomery, Alabama, now in the receipt of near a million of dollars annually from its business; will avoid the present disagreeable sea voyage from Wilmington to Charleston, shorten the travel to New Orleans one day's time, facilitate the mails, and will bring the South in more immediate and direct communication with the North.

The position of this road, its connections North and South, its easy grades, (none over thirty feet to the mile,) freedom from curves, and cheap construction, is such as to put it beyond the competition of any other line of road, for the immense inland travel between the North and New Orleans.

The greater part of this road traverses the most populous and fertile portion of South Carolina, producing cotton, corn, &c., in great abundance. Its local business alone will support it handsomely.

The census of 1850 shows that the district of country which will be tributary to this road, and dependent on it for transportation to market, produced in 1849 seventy thousand bales of cotton, of an average weight each of 450 lbs.

The Company has one million of available stock subscribed, most of which has been paid in and applied to construction, to which can be added, at any time, at the option of the company, \$200,000, subscribed by the state of North Carolina on certain conditions.

It is estimated that the net annual profits will reach 12 per cent. per annum.

About one half of the entire line has been graded and bridged, the cross-ties being in the course of delivery and will be ready for the iron rails immediately.

The entire line is under contract for grading and bridging, and in a forward state towards completion.

Six thousand two hundred tons iron rails, T pattern, have been purchased and are in the course of delivery.

About \$700,000 has already been expended in construction, including payment for the rails purchased.

It is expected that about 80 miles from Manchester East will be completed and in operation in the fall of this year, and the entire line to Wilmington early next year.

The management of this road is in highly respectable and competent hands. No work in the South undertaken or projected meets with more public favor than this.

For further and more particular information we refer to a printed "Exhibit" giving full details of the road and its affairs, which contains a Map of the line with its many connections, copies of the Bond and Mortgage, opinion of Counsel, &c., prepared by Gen. W. W. Harlee, President of the Company, which may be obtained on application at the office of the company, at Washington, N. C., or of the undersigned, by mail or otherwise, with any other information desired.

We deem the security a desirable one. The States of North and South Carolina, and the various corporations chartered within her limits, which have been borrowers of money, have uniformly, and under the most adverse circumstances, promptly met their pecuniary engagements. Public sentiment in these states has always taken high ground in regard to punctual fulfilment of public and private pecuniary obligations.

The \$300,000 will be disposed of absolutely and without reserve to the highest bidder.

Sealed proposals, for any amount not less than \$1000, will be received at the office of the undersigned until 3 o'clock on the 10th of July, proximo.

Proposals to be addressed to **WINSLOW, LANIER & Co.**, 52 Wall Street, New York, endorsed "Proposals for W. and Manchester Railroad Bonds."

Parties whose bids are accepted will be required to pay twenty per cent. upon the amount awarded to them upon being notified of the acceptance of their bids, and the remainder in equal amounts on the first day of September, October, November and December next, but any party will be at liberty to pay in full at once if desired. Interest will commence from the day of payment.

WINSLOW, LANIER & Co.,
52 Wall St.

THE Fourth Annual Exhibition of AMERICAN MANUFACTURES, by the MARYLAND INSTITUTE for the Promotion of the Mechanic Arts, will be opened in Baltimore on the 20th October, 1851.

The Exhibition will be held in the **SPLENDID NEW HALL** of the Institute, (fronting on Baltimore street) now being rapidly completed. Their edifice is centrally situated, chaste in its architecture, solid in its construction, and is by far the largest and most complete building in the United States, devoted to the Mechanic Arts. It may be added that this building is 355 feet long by 60 in breadth, with an average height of 68 feet, containing some twelve apartments, the largest of which is 255 feet by 60, and that the cost will be over \$70,000.

To this Exhibition, the Managers ask the attention of all engaged in industrial pursuits throughout the country, and cordially invite them to contribute specimens of their best productions for public inspection, and to compete for the prizes offered by the Institute. These prizes consist of **GOLD and SILVER MEDALS, DIPLOMAS**, etc., which were last year distributed as follows:—**Gold Medals**, 16; **Silver ditto**, 90; **Diplomas**, 60; besides 85 articles of Jewelry, etc., to ladies. *Fair play will be scrupulously observed towards all, and every facility of Steam power, shafting, fixture, labor, &c., &c., will be amply provided free of expense.* The machinery will be under a special superintendent, and a fine display of it is looked for. The last exhibition of the Institute was visited by more than 40,000 persons, and with their vastly improved accommodations and alterations, this number will be doubled at the coming display, embracing many Virginians, Pennsylvanians, and other strangers from the South and West.

Joshua Vansant, President.

Ed. Needles, } Vice Presidents.

F. A. Fisher, }

Samuel Sands, Rec. Sec'y.

Wm. Prescott Smith, Cor. Sec.

F. J. Clare, Treasurer.

BOARD OF MANAGERS.

Ross Winans,	Simeon Alden,
P. S. Benson,	J. T. Watson,
Josiah Reynolds,	W. Robinson,
Thomas Stowe,	Wm. A. Boyd,
Thos. J. Lovegrove,	Adam Denmead,
A. Flannigan,	C. W. Bentley,
E. Larrabee,	Geo. R. Dodge,
John F. Davis,	Saml. E. Rice,
Wm. H. Keighler,	John F. Meredith,
Richard Edwards, Jr.,	W. Abrahams,
Wm. Bayley,	Thos. Trimble,
R. Eareskron,	Chas. Suter.

(The last nine in *Italics* are the Committee on Exhibition.)

The Hall will be opened for the reception of goods on **MONDAY, 13th October**; on the next Monday, 20th, at 7 P. M., the Exhibition will be formally opened to the public, and will positively close on Wednesday, 19th November. Articles for competition must be in the Hall by **Thursday night, Oct. 16, unless delayed in shipment after starting in ample time.**

Those who intend depositing, will give the Committee or the Agent, notice as early as possible, stating the nature of the goods, and probable amount of room required, to exhibit them to advantage.

Circulars, containing a view of the new Hall and the full regulations of the Committee, with special information, if required, may be had promptly, by addressing the undersigned, or the Institute's Agent, J. S. Selby, Baltimore, *post-paid*.

ADAM DENMEAD,
Chairman Com. on Exhibition for 1851.

Knox & Shain,

MANUFACTURERS OF
**LEVELS, TRANSITS AND SURVEYING
COMPASSES.**

No 72 Dock st. first door south of Walnut, west side,
PHILADELPHIA.

North Carolina.

Central Railroad.—The ceremony of breaking ground on the North Carolina Central railroad, will take place at Greensborough on the 11th inst.

Trautwine on R. R. Curves.

By JOHN C. TRAUTWINE, Civil Engineer,
Philadelphia, Pa.

IN press, and will be published in a few days; accompanied by a Table of Natural Sines and Tangents to single minutes, by means of which all the necessary calculations may be performed in the field.

This little volume is intended as a field-book for assistants; and will be found extremely useful, as it contains full instructions, (with wood cuts) for laying out, and adjusting curves; with Tables of Angles, Ordinates, etc., for Curves varying from 13 miles, down to 146 feet Radius.

A portable Table of Natural Sines and Tangents to minutes, has for a long time been a desideratum among Engineers, independently of its use in laying out curves.

The volume is neatly got up in duodecimo; and handsomely bound in pocket-book form.

Sold by Wm. Hamilton, Actuary of the Franklin Institute, Philadelphia. Price \$1.

Also in press, and will be issued in a few weeks, "Trautwine's Method of Calculating Excavation and Embankment."

By this method, which is entirely new, (being now made known for the first time) the cubic contents are ascertained with great ease, and rapidly, by means of diagrams, and tables of level cuttings. Thin octavo; neatly half bound, \$1. For sale by Wm. Hamilton.

AMERICAN RAILROAD JOURNAL.

Saturday, July 5, 1851.

Stock and Money Market.

There has been for some time past an increasing tightness in the money market, owing rather to apprehensions in reference to the future, than to a scarcity of money, which continues abundant in all the ordinary business channels. The immense shipments of specie cause a good deal of disquiet; and as these must continue for some time to come, capitalists move cautiously. Our importations exceed our exports largely, which is another bad feature.

But little is doing in new securities, though pretty large amounts are now offering. The stocks and bonds of our western roads are steadily gaining upon public confidence; and they are believed to be not only safe, but to promise a large return upon capital. All our roads are doing remarkably well, and as far as receipts are concerned, the present bids fair to be a season of remarkable prosperity. Crops of every description throughout all the States we believe are unusually abundant, and this fact will add largely to the fall business.

The foreign iron market continues dull, as will be seen by the report of Wm. Bird & Co., which we annex:

"During the past week our pig iron market has been quiet and dull, transactions being limited as heretofore to immediate wants. In spite of the downward tendency, however, it is difficult to obtain iron against purchases, nor is any particular disposition evinced as yet by holders to force sales: expectations of a speedy reaction remain on the contrary strong.

Shipments are not quite so extensive, yet large for the time of year, and the demand for home consumption still both regular and good.

Our quotations are to-day as follows:

	No. 1.	Mixed	No. 1.	No. 3.
Good manufactured bars..	39s. 6d.	39s. 6d.	39s. 6d.	39s. 3d.
Garthsherrie.....	41 3	41 0	40 6	6
Langlois.....	39 9	39 6	39 3	3
Free on board at Glasgow.				
Forth.....	43 0	42 6	42 0	

Free on board Charlestown.
Kinneil.....42 6 42 3 42 0
Free on board Bo'ness.
Eglinton and Glengarnock.40 6 40 0 39 9
Free on board Ardrossan.
"Garthsherrie" delivered free on board at East Coast at 1s. 6d. per ton additional; other brands 2s. 6d. per ton.

The demand for manufactured iron remains limited at the rates annexed.

Bar Iron.—"Monkland," and similar quality, £5 5; "Dundyvan," do., £5 5; "Govan," do., £5 15. Sheets and plates, £7 10; Hoops, £7 10; Nail rods, £6 5 per ton, free on board at Glasgow, usual discount.

Founders are all well supplied with orders."

The receipts of the Erie railroad from the month of June, were as follows:—

Passengers.....	\$124,586 62
Freight.....	100,135 83

Total.....	\$224,722 44
June, 1850.....	120,324 42

Increase in 1851.....\$104,398 02

Connecticut and Passumpsic Railroad.—The receipts on the Connecticut and Passumpsic rivers railroad for the year ending June 1,

1851, were.....	\$149,583 11
Expenses same time.....	65,458 19

Net Earnings.....	84,124 92
Interest and two dividends of 3 per cent. each.....	79,311 00

Surplus for the year.....	4,813 92
Surplus previously on hand.....	3,556 31

Total surplus June 1, 1851.....\$8,370 23

From this the directors have appropriated sufficient to meet the entire loss by the freshet, which occurred in the spring of 1850, and which could not be ascertained until some time after its occurrence. The amount of extraordinary expense charged off for this purpose is about \$6,000.

Dividends and interest to the amount of about \$1,600,000 will be paid in Boston in the course of the present week. Among some of the most prominent are the following:

	Capital.	Amount.
Western Railroad...	\$5,150,000 4 pr. ct.	\$206,000
Boston & Worcester...	4,500,000 3½	157,500
Boston and Maine...	4,155,700 3½	145,449
Fitchburg.....	3,320,000 4	132,800
Taunton Branch.....	250,000 4	10,000
Boston & Providence...	3,160,000 3	94,800
Boston & Lowell.....	1,830,000 4	73,200
Connecticut & Passump.	1,090,000 3	32,700
Fall River.....	1,000,000 3	30,000
Pittsfield & N. Adams.	450,000 3	13,500
Worcester & Nashua...	1,267,800 2	25,350
S. Reading Branch...	200,000 5	10,000
Old Colony Railroad...	1,854,200 2	37,084
Mass. 5 percent. issued		
West Railroad.....		24,875

The following statement shows the operations of the United States Mint at Philadelphia, for June 1851:—

May 31—Balance.....	\$1,424,815 91
June 30—Rec'ts Customs, \$267,569 20	
P. O. Money.....	15,081 34
Fund per int. on Loans	181,193 06
Miscellaneous.....	3,344 19
Total.....	\$1,892,003 70
Payment Treas Dratts.....	\$438,949 75
P. O. Warrants.....	33,870 34
Interest on Loans, Pen-	
sions, &c.....	14,497 63
June 30—Balance.....	\$1,404,655 98

Gold bullion deposited for coinage from 1st to 30th June, 1851, inclusive:

From California.....	\$3,570,000
From other sources.....	60,000

Total.....\$3,630,000

Silver Bullion deposited in same time.....\$11,700

COINAGE FOR JUNE.

Gold.

130,515 Double Eagles.....	\$2,610,300 00
12,127 Eagles.....	121,270 00
71,236 Half Eagles.....	356,180 00
114,244 Quarter Eagles.....	285,610 00
279,888 Gold Dollars.....	279,888 00

608,010 Pieces.....\$3,653,248 00

Silver.

1,300 Dollars.....	\$1,300 10
12,500 Half Dollars.....	6,250 00
16,000 Quarter Dollars.....	4,000 00
65,000 Dimes.....	6,500 00
946,500 Three Cent Pieces.....	28,395 00

1,041,310 Pieces.....\$46,435 00

Copper.

1,016,517 Cents.....\$10,165 17

2,665,827 Pieces.....\$3,709,858 17

A large surplus of Gold Dollars and Quarter Eagles, beyond the demands of the depositors, still remain in the Treasury.

EXPORTS FROM NEW YORK—JUNE.

	1848.	1849.
Dom. Mdse.....	\$2,235,844	\$3,317,740
For. free.....	12,213	29,464
For. Dut'le.....	147,017	416,428
Spe. & Bul.....	1,971,915	596,411
Total.....	\$4,366,989	\$4,360,043
	1850.	1851.
Dom. Mdse.....	\$3,971,207	\$3,778,289
For. free.....	51,887	56,435
For Dut'le.....	442,493	265,290
Spe. & Bull.....	880,434	6,462,367

Total.....\$5,346,021 \$10,562,381

The aggregate of March—and in deducting the specie is:—

June, 1848.....	\$2,395,074	1850.....	\$4,465,587
June, 1849.....	3,763,632	1851.....	4,099,014

SALES OF STOCK IN NEW YORK.

	June 26.	July 3.
Sales.	Sales.	
U. S '67 Loan.....	116½	116½
Erie R.R.....	83½	83½
Harlem R.R.....	73½	74
Stonington.....	44½	44½
L.I. R.R.....	18½	17½
Norwich & Wor....	61	60
Del. & Hudson.....	121½	121½
Reading.....	56½	57½
Morris Canal.....	16½	16½
Erie income.....	97½	96½
" " Bonds.	103	103½
Canton.....	73	70
Farmers Loan.....	69	69

SALES OF STOCKS IN BOSTON.

	June 25.	July 2.
Sales.	Sales.	
Old Colony Railroad.....	68	67½
Boston and Maine R.R.....	104	103½
Eastern Railroad.....	102½	102
Fitchburg Railroad.....	110	109½
Michigan Central Railroad.....	103	103½
Northern Railroad.....	70½	70
Vermont Central Railroad.....	35½	36
Vermont and Mass. R.R.....	30½	30½
Western Railroad.....	100	103½
Ogdensburg Railroad.....	37½	37½
Rutland Railroad.....	55	53
Boston and Worcester Railroad.....	103½	103½
Rutland Railroad Bonds.....	97	97
Ogdensburg Railroad Bonds.....	99	98
Vermont Central R.R. Bonds.....	91½	91½
Boston and Providence R.R.....	90	89½
Philadelphia, Wilm'gton & Balt.	30	30
Concord R.R.....	55	54½

Manufacturing of Pittsburgh.

Thirteen rolling mills. Capital 5,000,000—2,500 hands. Consume 60,000 tons of pig metal, and produce bar iron and nails amounting to \$4,000,000 annually.

Thirty large foundries, with several smaller ones. Capital in all 2,000,000—2,500 hands. Consume 20,000 tons pig metal, and yield annually articles amounting to \$2,000,000.

Two establishments for manufacturing locks, latches, coffee mills, scales and other iron castings. Capital \$250,000—500 hands. Consume 1,200 tons metal, and producing goods amounting to \$3,000,000 annually.

Five large cotton factories, and several smaller ones. Capital \$1,500,000—1,500 hands. Consume 15,000 bales of cotton, and return yarns, sheeting, batting, &c., to upwards of \$1,500,000 per annum.

Eight flint glass manufactories. Capital \$300,000—500 hands. Consuming 150 tons lead and 200 tons pearl ash; and producing various articles of glass ware amounting to \$400,000 annually.

Seven phat furnaces and eleven window glass manufactories. Capital \$250,000, employing 600 hands, and producing \$600,000 annually.

One soda ash manufactory, producing 1,500 tons annually—75 hands.

One copper smelting establishment, producing 600 tons refined copper annually, valued at \$380 per ton, and amounting to \$250,000.

One copper rolling mill in operation, producing 300 tons sheathing and brazier's copper, amounting to 150,000 annually.

Five white lead factories. Capital \$150,000. Produce 150,000 kegs lead annually, worth \$200,000—employing 60 hands.

There are also a number of manufactories of the smaller sizes of iron, several extensive manufactories of axes, hatchets, &c., and spring steel, steel springs, axles, anvils, vices, mill, cross-cut and other saws, gun barrels, shovels, spades, forks, hoes, cut tacks, brads, &c. After careful investigation the full value does not fall short of \$50,000,000 annually. There is also consumed about 12,000,000 bushels of coal per year, worth \$600,000, and an equal number of bushels exported to markets near the city, giving employment constantly to 4,000 hands.

Superintendent of a Railroad.

THE Post of Superintendent of a Railroad is wanted by a middle aged man, who can give satisfactory evidence of his capacity, integrity and qualifications for such a situation. Letters addressed to A. B., care of the Editor of the Railroad Journal, New York, (to whom the above would refer), will receive immediate attention.

New York, June 11, 1851.

**S. S. Keyser & Co.,
IRON WAREHOUSE,**

Corner of South and Pratt Streets,
BALTIMORE, MD.

Selling Agents for the Rough and Ready Bar Iron and Elk Boiler and Flue Iron Rolling Mills, Sarah and Taylor Furnaces, and Wrightsville Hollow Ware Foundry, and Dealers in Bar and Sheet Iron, and Cast, Sheer, German, Blister, Spring and Electrolysed Steel, etc., etc.

**To Railroad Companies.
SALISBURY REFINED IRON.**

THE Undersigned, having enlarged and perfected his Works, is now prepared to furnish Locomotive Tire of a better quality than have heretofore been used. Railroad Companies who may wish it, will be furnished with a set for trial, not to be paid for until they are satisfied of their superior quality over any other. Also made at short notice, and in the best manner, Locomotive Cranks, Engine and Car Axles, and other Locomotive Forgings.

All work ordered from me will be made of Salisbury Iron, and done in the best manner.

Address HORATIO AMES,
Falls Village, Conn.

May 1, 1851.

Spikes, Spikes, Spikes.

ANY person wishing a simple and effective Spike Machine, or a number of them, may be supplied by addressing J. W. FLACK, Troy, N. Y. or, MOORE HARDAWAY, Richmond, Va.
March 6, 1850.

To Contractors.

PROPOSALS are invited for laying the superstructure on the first 38 miles of the Manassas Gap Railroad, up to Farrowville;—the work to be commenced in August next. Plans and specifications may be seen at the office in Alexandria, after the 28th inst. Bids will be received up to the 5th of July.

ENGINEER'S OFFICE, ALEXANDRIA.

Notice to Contractors.

Engineers Office, E. T. & V. R. R. Company,
Greenville, E. T., June 5th, 1851.

PROPOSALS will be received until the 1st day of October next, for the Grading and Masonry of that part of the E. T. & V. Railroad between the Eastern terminus of said road at King's Meadow, and Rheatown, in Greene County, a distance of about forty seven miles. A large amount of very heavy work, both in Grading as well as Masonry, will be found on this division, offering strong inducements to able Contractors.

Maps, Profiles, and Specifications can be seen at this Office, on and after the 20th of July next.

The Company reserve the right to reject all, or any proposals that they deem unsatisfactory.

Proposals should be directed to the Treasurer and Secretary of the E. T. & V. Railroad Company, Jonesborough, E. T.

LYLOYD TILGHMAN,
Chief Engineer.

**SUPERIOR BLACK WRITING & COPYING
INK.****Jones' Empire Ink.**

87 Nassau st., Sun Building, New York city.

Net prices to the trade—

Quarts, per dozen,	\$1 50	6 oz. per dozen,	\$0 50
Pints, " "	1 00	4 " "	0 37½
3 ounces, " "	0 62½	2 " "	0 25

On draught per Gallon, 20 cents.

This is the best Ink manufactured. It flows freely, is a good copying ink, and will not mould, corrode, precipitate or decay. Orders for export, or home consumption, carefully and promptly attended to by
211f THEODORE LENT.

**Lovegrove's Patent Cast Iron
Water and Gas Pipes.**

THE Subscriber, the Inventor and Patentee of the Centrifugal mode of giving form to metallic substances while in a molten state, is preparing to make Cast Iron Water and Gas Pipes, of any dimensions, at prices much lower than they can be made in the old manner, and the pipes warranted to stand a pressure of three hundred pounds to the square inch, and to be soft enough to drill. Steam Engines and all kinds of machinery. Cast Iron Doors and Frames, and Mill Castings of every description, made to order.

THOMAS J. LOVEGROVE,

Machinist and Founder,
West Falls Avenue, below Pratt st., Baltimore.

Railway Iron.

3000 TONS, 50, 57, and 60 lb. Rails, made of best English Iron and under particular specifications.

Also:

Rails imported on commission or at a fixed price, delivered at a port in England, or at any port in the United States. Apply to

DAVIS, BROOKS & CO.,
June 5, 1851. 28 Beaver st., New York.

**Wheel, Forge and Foundry
Iron.**

LOCUST GROVE Wheel Iron of great strength and superior chilling property.

Balt. Charcoal Forge Iron, from Patuxent, Curtis Creek and Gunpowder furnaces.

Elkridge Foundry Iron, of superior strength and softness. Anthracite and Charcoal Iron from Pennsylvania and Virginia. Gas and Water Pipes, Lamp Posts from Elkridge furnace.

LEMMON & GLENN,
62 Buchanan's Wharf, Baltimore.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff St.

TO CONTRACTORS.

Engineer's Office, S. S. R. Road Co.

Petersburg, Va., May 27, 1851.

PROPOSALS will be received at the Engineer's office, South Side Railroad, at Petersburg, Va., until the 31st of July next, for the construction of Appomattox Bridge, to be erected near Farmville.

The Bridge will be about 3000 feet long and 80 feet high; to consist of a wooden superstructure resting on abutments and piers.

The piers will be of brick or stone, to be determined after receiving the proposals.

Good brick earth can be obtained near the site of the Bridge.

The proposals may be made for the structure complete, or for the various items of work and materials, viz.: Masonry, furnishing Bricks or Timber; workmanship of laying Bricks and workmanship of superstructure.

Security will be required for the fulfilments of the contracts, and it will be necessary that each proposal be accompanied with a letter from a responsible person or persons, stating that they will become security.

C. O. SANFORD,
Ch. Engineer, S. Side R. Road.

Notice to Contractors.

Columbus, Piqua and Indiana Railroad.

SEALED PROPOSALS will be received at the Engineer's Office of the Columbus, Piqua and Indiana Railroad Company, at Urbana, on the 8th day of July, 1851, for the Grubbing, Grading and Masonry of that portion of the line extending from St. Paris, in Champaign county, to Columbus, a distance of fifty-six miles. Plans and specifications of the work may be seen from the 1st to the 8th of July, at the office. The Directors reserve the right to retain bids for twenty days after the 8th, before declaring the work.

The names in full of all the parties should be given in the proposals.

A. G. CONOVER, Engineer.
Piqua, May 20, 1851. 3122

Railroad Iron.

THE Subscribers, Agents for the Manufacturers, are prepared to contract for the delivery of Railroad iron at any port in the United States or Canada, or at a shipping port in Wales.

WAINWRIGHT & TAPPAN,
29 Central Wharf.

Boston, June 1, 1851.

Bowling Tire Bars.

40 Best Flange Bars 5½x2 inches,	11 feet long.
40 " " 5½x2 " "	7 feet 8 in. long.
40 " Flat " 6x2 " "	11 feet long.
40 " " 6x2 " "	7 feet 8 in. long.

Now in store and for sale by

RAYMOND & FULLERTON,
45 Cliff street.

Car Wheel Iron.

100 Tons "Columbia" No. 2 Cold Blast Charcoal Iron.

300 Tons "Salisbury" No. 1, do. do.

For sale by CHARLES T. GILBERT,
No. 80 Broad st.

New York, Sept. 21, 1850.

**JOHNSON, CAMMELL & Co's
Celebrated Cast Steel,**

AND

ENGINEERING AND MACHINE FILES, which for quality and adaptation to mechanical uses, have been proved superior to any in the United States. Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cy-clops Steel Works Sheffield.

JOHNSON, CAMMELL & CO.,
21 Cliff St., New York.

November 23 1849.

Railroad Spikes.

THE subscribers are prepared to make and execute contracts for Railroad Spikes of a superior quality, manufactured by the New Jersey Iron Company, at Boonton.

DUDLEY B. FULLER & CO.,
139 Greenwich st. corner of Cedar.

To Railroad Companies, etc.

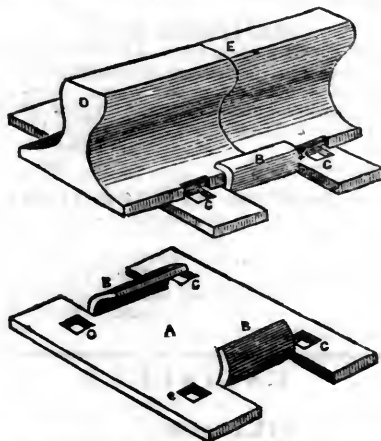
The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

I also invite attention to an improved PATENT SPRING LOCK, for SLIDING Doors to Freight and Baggage Cars, now in use upon the Pennsylvania Central, Greenville and Columbia, S.C., Reading, Pa., and other Railroads.

Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH,
46 South 8th St. Philadelphia.

May 9, 1851.

The American Railroad Chair Manufacturing Co.

ARE prepared to make WROUGHT IRON RAIL ROAD CHAIRS, of various sizes, at short notice.

By use of the WROUGHT IRON CHAIR, the necessity of the wedge is entirely done away—the lips of the chair being set, by means of a sledge or hammer, close and firmly to the flange of the rail.

The less thickness of metal necessary in the Wrought Iron Chair gives much greater power and force to the spikes when driven—and consequently a much less liability to the spreading of the rails by reason of the spikes drawing or becoming bent.

The less weight necessary in the Wrought Iron Chair, will enable us to furnish them at a cost much below that of CAST IRON CHAIRS.

DESCRIPTION OF THE ABOVE CUTS.

Figure 1 is a perspective view of the rail secured in the chair, and fig. 2 is a perspective view of the chair itself. D, E, are sections of two rails placed together, and secured at the joint on the chair by the jaws B, B. The chair is bolted down by spikes C, C. In fig. 2, the chair is represented as made of a single block or plate A of wrought iron.

The chair is set in its proper place on the track, spiked down, and the ends of the two rails brought together within the jaws as represented in fig. 1.

For further information address,

N. C. TROWBRIDGE, Secretary,
Poughkeepsie, N. Y.

June 1, 1851.

Railroad Commission Agency.

THE Subscriber offers his services to Railroad Co's and Car Makers for the purchase of equipment and furniture of roads and depots and all articles and materials required in the construction of cars, with cash or approved credit. No effort will be spared to select the best articles at the lowest market price.

He is sole Agent for the manufacture of the ENAMELED CAR LININGS, now in universal use. The best Artists are employed in designing new styles, and he will make to order pieces with appropriate designs for every part of the car, in all colors, or with silver grounds and bronzed or velvet figures.

He is also Agent for Page's Car Window Sash Fasteners, which is preferred by all who have used it to any other.

CHARLES STODDER,
75 Kilby st., Boston.

June 20, 1851.

3m.

LOWMOOR

AND

**U. S. BEST FINCH IRON.
To Iron Merchants.**

JOHN FINCH & SONS, Iron Merchants, Liverpool, now are, and for more than twenty years past have been, sole Agents for the **LOWMOOR IRON COMPANY**, for the United States and Canada, for the sale of their well known Railway Tire Bars, and Axles, Piston Rods, Boiler Plates, Angle, Rivet, and all other kinds of Lowmoor Iron: also, sole Agents for the sale of the superior St. Hordshire Iron stamped "FINCH CROWN" and "U. S. BEST FINCH," and Merchants and Wholesale Dealers in all other kinds of British Iron.

We hereby inform our friends and the public that we have this day appointed Mr. WM. BAILEY LANG, of Boston, as our only representative to receive orders and to transact our general business in the United States.

For **JOHN FINCH & SONS**,
JOHN FINCH Sen.

Boston, April 11, 1851.

LOWMOOR and other Bent, Welded and Blocked RAILWAY TIRES, ready for use, E. FINCH'S Patent Dovetailed and other kinds of WROUGHT IRON RAILWAY WHEELS, with, or without the finished Axles, for Locomotives and for Passenger and Merchandise Cars, also Wrought Iron Railway Chairs, Railway Spikes, etc.

To the Managers of Railways, Engineers and others: Gentlemen:—We, **FINCH & WILLEY**, Engineers, Liverpool, Manufacturers of the above articles, respectfully inform you that we have this day appointed Mr. WM. BAILEY LANG, of Boston, as our sole Agent for the sale of said articles, and the transaction of our business in the United States of America, and for whom we solicit your kind attention and patronage.

For **FINCH & WILLEY**,
JOHN FINCH, Sen.

Boston, April 11, 1851.

Having accepted the above Agencies, I beg leave to solicit your orders, which shall at all times receive my prompt and careful attention. Please address all communications either to MESSRS. JOHN FINCH & SONS or MESSRS. FINCH & WILLEY, Liverpool; or to me, at my Steel Warehouse, No. 9 Liberty Square, Boston. Yours very respectfully,

WM. BAILEY LANG.

Boston, April 11, 1851.

The following are testimonials of the quality of **FINCH & WILLEY'S** WROUGHT IRON RAILWAY WHEELS from the Yorkshire and Lancashire Railway Co., one of the largest in Great Britain, and from the London and North Western Railway Co., the largest Railway Company in the world.

LONDON AND NORTH WESTERN RAILWAY,
(Northern Division.)

WAGON DEPARTMENT, ORDSALL LANE,
Manchester, January 4, 1851.

Gentlemen:—I have very great pleasure in bearing my testimony to the excellent quality of your Wrought Iron Railway Wheels.

This Company have many of them now in use on their lines, and during my experience, as their Superintendent, which is now upwards of 9 years standing, I have not known any of them to fail during that time.

I am, Gentlemen, yours, truly,

OWEN OWENS.

MESSRS. FINCH & WILLEY,
Windsor Foundry.

LANCASHIRE AND YORKSHIRE RAILWAY,
Wagon Department, Jan. 3, 1851.

Messrs. Finch & Willey,

Gentlemen: In reply to your request writing me to give my opinion of the 700 sets of Wrought Iron Wheels you furnished this company during the years 1847 and 1848, I have much pleasure in stating that we have not had a single instance of your Wheels failing in any respect, and I consider them equal if not superior to any Wheels we have on this line of railway. The Tires being **LOWMOOR** iron, 1 1/2 inch thick, I have no doubt they will run under ordinary goods' wagons 12 years without any repairs more than the tires turning up.

I am Gentlemen,

Yours, truly, **WM. EMMETT.**

NOTE.—4 Wheels and 2 Axles are one set, consequently this order contained 200 WHEELS and 100 AXLES; value over \$100,000.

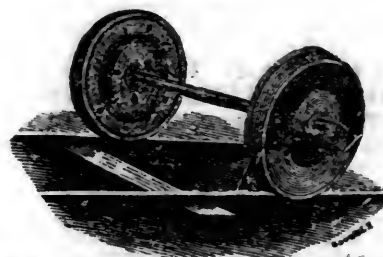
Boston Locomotive Works,

—Late Hinkley & Drury—

No. 380 Harrison Avenue,
BOSTON.

Locomotive and Stationary Steam Engines; Boilers; Iron, Brass, Copper and Composition Castings; Coppersmith's Work, and all kinds of Railroad Machinery furnished at short notice.

ALSO

**Van Kuran's Improved Railroad Wheel,**

Patented May 1, 1849. Manufactured under the personal superintendence of the Patentee, as above.

Orders for any quantity of wheels executed with dispatch, and wheels and axles fitted in the very best manner and at the lowest rates. Address

DANIEL F. CHILD, Treasurer, Boston.

**Providence Tool Co.,**

MANUFACTURERS OF

Plane Irons, Tooth Irons, Soft Moulding and Rabbit Irons, Cornice Irons, Plow Bits, and Planing Machine Knives:

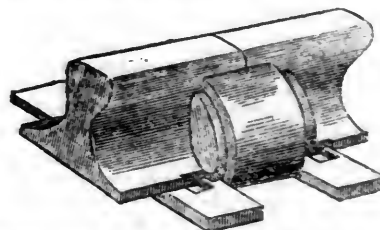
NUTS, WASHERS AND BOLTS.

—ALSO—

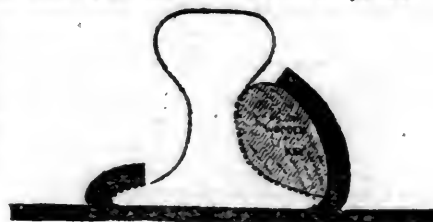
PLATE HINGES AND PICK AXES.

They are prepared to execute orders for all descriptions of Cold Punching and Job Work.

WM. FIELD, Agent. **RUFUS WATERMAN**, Treas.
PROVIDENCE, R. I.

**Railroad Iron,
SPIKES, AND
WROUGHT IRON CHAIRS.**

THE Undersigned, Agent for Manufacturers, is authorized to contract for Welsh Railroad Iron of the best quality, and deliverable at any port on favorable terms, also Spikes and Wrought Iron Chairs, made from the best iron, and of any pattern and weight. The new Wrought Iron Chair, with the introduction of a "Key," as per the annexed plan, will be found a great improvement on the old pattern.



Boiler Plates of superior quality, perfect regularity in the squaring and thickness, and made with great care.

Samples can be seen at our office, No. 20 Beaver's

CHARLES HILLIS

RAILROAD CAR MANUFACTORY

TRACY & FALES,
GROVE WORKS, HARTFORD, CONN.Passage, Freight and all descriptions of
RAILROAD CARS,AS WELL AS
LOCOMOTIVE TENDERS,
Made to order promptly.

The above is the Largest Car Factory in the Union. In quality of Material, and in Workmanship, Beauty and Good Taste, as well as Strength and Durability, we are determined our work shall be unsurpassed.

JOHN R. TRACY. THOS. J. FALES.

**CHILLED TIRES FOR
LOCOMOTIVE ENGINES.
To Railroad Companies.**

THE Undersigned, Assignee of Letters Patent, respectfully invites the attention of Railroad Companies to the CHILLED TIRES for LOCOMOTIVE ENGINES, which he offers for sale.

These Tires were first introduced by Messrs. Perkins & McMahon, upon the Baltimore and Ohio Railroad, in 1843. where, after a long and severe trial, they were generally adopted, on both passenger and freight engines, and now have entirely superseded Wrought Tires on that road, on which are many engines of the heaviest class, which ascend grades of eighty-five feet per mile, taking with them one hundred and twelve tons, exclusive of cars. This performance shows in some measure the adhesive character and strength of the Tire.

During a service of seven years, these Tires have very much exceeded in durability those of wrought iron, while their first cost, and expense of repairs, is more than fifty per cent. less. They also retain more equally their diameter and proper form of tread, which is a point of much value in engines with coupled wheels.

It is believed these Tires are peculiarly well adapted to freight engines, as the objection to coupling the wheels of locomotives is the increased friction, arising principally from the unequal wear of wrought tires; and hence most of the freight engines where wrought tires are used, have but four wheels as drivers, with frequently a weight of sixteen tons, or more, upon them, which may be of no disadvantage to the engine, although its effect upon the track is like a car with sixteen tons upon four wheels, and it is presumed no one would permit cars so heavily loaded to pass over their road.

As Chilled Tires wear more uniformly than those of wrought iron, there can be no doubt when these are used, that the weight necessary for adhesion may be distributed upon more driving wheels, without any material disadvantage to the engine, and thus placing less weight upon a single point, would relieve the track, and secure, to a great extent, the object sought to be gained by the plan so frequently proposed, of using light engines, which would bring with it the necessity of increasing the number of trains and train hands.

The complete success of Chilled Tires upon the Baltimore and Ohio road for the last seven years, and upon other roads for a more subsequent period, is a strong proof of their practical character, while their cheapness and durability, it is believed, recommend their trial by every railroad company.

It may be thought by some that the whole wheel for strength, would be preferable to wheels with tires, but experience shows the latter to be a much stronger and more durable wheel, on account of its freedom from tension, which is never the case with a whole wheel. That TENSION has much to do with the breaking of wheels and tires, may be inferred from the fact, that a set of chilled tires, five feet diameter, on a first class passenger engine, have been in constant service during the past winter, on one of our Eastern roads, and have withstood the severities of the season, where whole wheels and wrought tires have broken. And it may be proper to remark, that wherever chilled tires have been introduced, whole wheels as drivers are invariably abandoned, they being far more expensive to maintain, as there is a crank to form as often as a wheel is renewed, which is not the case on the renewal of a tire.

The peculiar manner of fastening these tires to the wheel without shrink, applies equally well to wrought tires, and is of much importance where they are used, as it secures them against the TENSION or STRAIN they receive by the present plan of shrinking them to the wheels, which undoubtedly is the cause of wrought tires breaking so frequently, particularly in cold weather, which produces a greater contraction of the tire, thereby increasing the strain. This plan makes the tire perfectly secure upon the wheel, and is attended with less expense, as will be seen by the following testimonials, which are respectfully submitted.

Lowell, March, 1851.

L. B. TYNG.

TESTIMONIALS.

Baltimore and Ohio R. R. Office,
Jan 2, 1850.

Mr. L. B. TYNG, Lowell, Mass.—Sir: Your favor of the 26th ult., is before me, asking my opinion of the Chilled Cast Iron Tires, of Messrs. Perkins & McMahon, patentees. I do not hesitate to speak favorably of them, nor to say that I would give them the preference over wrought iron tires, whenever the adhesive tenacity of the latter to the rails is not all called for, there being somewhat less adhesion to the chilled wheel.

This can, however, scarcely be called a practical point, as nearly all of the Passenger Engines now in use have a surplus of adhesion, and nearly all Freight Engines being provided with the sand box, for emergencies arising from sharp curves heavy grades or wet rails.

The Chilled Tire is very much cheaper in first cost, will last longer, and offers a facility for putting it on the wheel, rendering comparison with the wrought iron tire an absurdity—it not being necessary even to take the wheels from the machine for the purpose.—Many of them are in successful use on this road, and I consider its curves and other peculiarities the most severe of all existing tests. One set of five feet in diameter, has run 50,000 miles under one of our Passenger Engines, and will to all appearance, run as many more; and, in the mean time, they have not cost a dollar for repairs or adjustment.

It may be suggested that they might not stand a Northern frost. This is possible; but I believe otherwise, as the weather here is occasionally as severe as in Boston, and if I had charge of a northern road, after the experience I have had here, I would make their trial one of my very first acts.

Respectfully your Ob't Serv't,

WM. PARKER, General Supt., etc.

January 29, 1851.

Philadelphia, Wilm. and Balt. R. R. Office,
Wilmington, Del.

Mr. L. B. TYNG—Sir: We have used the solid Cast Iron Chilled Wheel, and Cast Iron Chilled Tire, for engine drivers, on this road since 1842. When wrought iron tires under new engines, purchased from time to time, wear out, I invariably replace them with the Chilled Tire of Messrs. Perkins & McMahon, patentees.

These Tires will last, on the average, three times as long as wrought tires; seldom requiring renewals under three years, and lasting much longer usually. We have a set which has been in constant use for five years, and still in fair order. The adhesion supplied by the Chilled Tires, I find in practice with engines of the same model and weight, to be equal to that given by wrought tires. This is certainly a fact, though not an acknowledged one, in general. Those who think otherwise, will in time change their opinions.

I am of opinion that the Chilled Tire is as safe as the wrought, at any temperature. In eight years use, we have broken but one tire out of more than fifty, and that by a violent concussion on the occasion of a run off.

The use of the Chilled Tire, and the ease and rapidity with which it may be replaced, would certainly enable a road to do the same amount of work with fewer engines—since but little time would be lost in laying up an engine for new tires, or for turning down old ones, as must be done when wrought tires are used.

I am yours respectfully,

I. R. TRIMBLE,
Engineer and General Supt.

Office Eastern R. R., Salem, Dec. 23, 1850.

L. B. TYNG, Esq.—Sir: Your favor of Nov. 30th, inquiring respecting the Chilled Cast Iron Tires, came duly to hand, and in answer, I will say, that this road have in use one set cast and fitted to the wheel, by Messrs. Bush & Lobdell, upon a twenty ton first class Passenger Engine, which has run in eight months, 26,639 miles, and to all appearance, are about as good as when they first commenced running.

In regard to the comparative expense of the cast or wrought iron tires, I do not hesitate to say that the difference would be vastly in favor of the former.

I have ordered a second set, and they will be put on to the engine immediately. Respectfully,

JOHN KINSMAN, Supt. E. R. R.

Chilled Tires for the various sized wheels, or wheels with either chilled or wrought tires fitted up upon this plan, may be had of the following persons:

ALDRICH, TYNG & Co, Lowell, Mass.
SMITH & PERKINS, Alexandria, Va.

Rights for using Tires upon the above plan, may be had on reasonable terms, of L. B. TYNG, Lowell, N. York.

Railroad Iron.

THE UNDERSIGNED, HAVING made arrangements abroad, are prepared to contract for the delivery of Foreign rails, of approved brands upon the most favorable terms.

They will also make contracts for American rails, made at their Trenton works, from Andover Iron, in whole or in part, as may be agreed upon.

They are prepared to furnish Telegraph, Spring and Market Wire; Braziers and Wire Rods; Rivets and Merchant Bars to order, all made exclusively from Andover Iron. The attention of parties who require iron of the very best quality for special purposes, is respectfully invited.

COOPER & HEWITT,
17 Burling Slip, New York.

February 15, 1850.

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.

August, 16, 1849.

6m33

Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron.

THOMAS B. SANDS & CO.,
73 New street,
New York.

February 3, 1849.

Glendon Refined Iron.

Round Iron,	Band Iron,	Hoop Iron,
Square "	Flat "	Scroll "

Axles, Locomotive Tires,
Manufactured at the Glendon Mills, East Boston, for
sale by GEORGE GARDNER & CO.,
5 Liberty Square, Boston, Mass.
Sept. 15, 1849. 3m37

ENGINEERS.

Atkinson, T. C.,

Mining and Civil Engineer,
Orange and Alexandria Railroad, Alexandria, Va.

Clement, Wm. H.,

Little Miami Railroad, Cincinnati, Ohio.

Cozzens, W. H.,

Engineer and Surveyor, St. Louis, Mo.

Alfred W. Craven,

Chief Engineer Croton Aqueduct, New York.

C. Floyd-Jones,

Central Railroad, Decatur, Illinois.

Gay, Edward F.,

Columbia and Philadelphia Railroad, Philadelphia Pa.

Gilbert, Wm. B.,

Rutland and Burlington Railroad, Rutland, Vt.

Gzowski, Mr.,

St. Lawrence & Atlantic Railroad, Montreal, Canada.

Grant, James H.,

Nashville and Chattanooga R. R., Nashville, Tenn.

S. W. Hill,

Mining Engineer and Surveyor, Eagle River,
Lake Superior.

Holcomb, F. P.

Southwestern Railroad, Macon, Ga.

Latrobe, B. H.,

Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,

Buffalo and Conhocton Valley Railroad, Bath, N. Y.

Morris, Elwood,

Engineer, Chartiers Co. Pittsburgh, Penn.

Nott, Samuel,

Lawrence and Manchester Railroad, Boston.

Osborne, Richard B.,

Civil Engineer, Philadelphia.

Prichard, M. B.,
East Tennessee and Georgia R. R., Cleveland, Tenn.

W. Milnor Roberts,
Bellefontaine and Indiana Railroad, Marion, Ohio.

Roberts, Solomon W.,
Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Sanford, C. O.,
South Side Railroad, Virginia.

Schlatter, Charles L.,
Northern Railroad (Ogdensburg), Malone, N. Y.

Steele, J. Dutton,
Pottstown, Pa.

Trautwine, John C.,
Civil Engineer and Architect, Philadelphia.

Tinkham, A. W.,
United States Fort, Bucksport, Me.

Troost, Lewis,
Alabama and Tennessee Railroad, Selma, Ala.

Whipple, S.,
Civil Engineer and Bridge Builder, Utica, N. Y.

HOTELS.

**DAVIS'S
ALHAMBRA HALL,**
No. 136 Pratt street,
BALTIMORE.

Exchange Hotel,
Adjoining Eastern Railroad Depot,
BUFFALO, N. Y.
BY.....**FISK & SPERRY,**
Late of Delevan House, Albany.

MANSION,
Corner of Maine and Exchange Streets,
P. DORSHIMER. BUFFALO.

Barnum's City Hotel,
MONUMENT SQUARE, BALTIMORE.
This Extensive Establishment, erected expressly
for a Hotel, with every regard to comfort and con-
venience, is situated in the centre and most fashionable
part of the city, and but a few minutes' walk from the
Railroad Depots and Steamboat Landings.
The House has lately undergone a thorough repair,
embracing many valuable improvements, and will ac-
commodate 250 Guests. **BARNUM & CO.**

American Hotel,
Pratt street, opposite the Railroad Depot,
BALTIMORE.
HENRY M. SMITH.....Proprietor.
Late of the Exchange & St. Charles Hotels, Pittsburgh

Washington Hotel,
BY **JOHN GILMAN,**
\$1 Per Day.
No. 206 Pratt street, (near the Depot),
BALTIMORE.

**GUY'S
United States Hotel,**
(Opposite Pratt street Railroad Depot),
BALTIMORE.
JOHN GUY. WILLIAM GUY.

DUNLAP'S HOTEL,
On the European Plan,
NO. 135 FULTON STREET,
Between Broadway and Nassau St.,
NEW YORK.

JONES' HOTEL,
NO. 152 CHESTNUT STREET,
PHILADELPHIA.
Bridges & West, Proprietors.

Fountain Hotel,
LIGHT STREET, BALTIMORE,
THURSTON.....Proprietor.

BUSINESS CARDS.

Walter R. Johnson,
CIVIL AND MINING ENGINEER AND AT-
torney for Patents. Office and Laboratory, F St.,
opposite the Patent office, Washington, D. C.

Lithography.
JOHN P. HALL & CO.,
161 Main st., Buffalo, (Commercial Advertiser Build.)
Are prepared to execute all kinds of Lithography
in good style and at reasonable rates. Particular at-
tention will be paid to Engraving Railroad Maps, En-
gineer's Plans and drafts, etc., and orders in this line
are respectfully solicited.

**Cumberland, (Md.) Coals for
Steaming, etc.**
ORDERS RECEIVED FOR AND FILLED
by
J. COWLES, 27 Wall St., N. Y.

J. & L. Tuckerman,
IRON COMMISSION MERCHANTS,
AND MANUFACTURERS OF
ULSTER BAR & POUGHKEEPSIE PIG IRON,
69 WEST STREET,
NEW YORK

Henry I. Ibbotson,
IMPORTER of Sheffield and Birmingham Goods.
Also, Agent for the Manufacture of Telegraph
Wire. 215 PEARL ST., NEW YORK.

Charles T. Jackson, M. D.,
STATE ASSAYER, late Geologist to Maine, Rhode
Island, New Hampshire, and the United States,
offers his services to his friends and the public in mak-
ing any Chemical, Mineralogical or Geological re-
searches that may be required for the improvement of
Agriculture and the Manufacturing Arts. Particular
attention will be paid to the exploration of mines and
to assaying of ores of the metals.
State Assayer's office, 31 Somerset st.
Boston Sept. 3, 1850.

STEEL AND FILES.
R. S. Stenton,
20 CLIFF STREET, NEW YORK,
AGENT FOR
J. & RILEY CARR,
BAILEY-LANE WORKS, SHEFFIELD,
Manufacturers of Cast, Shear, German, Blister, and
Spring Steel,
Of all descriptions, Warranted Good.
FILES.

Manufacturers of Machinists' Warranted Best Cast
Steel Files, expressly for working upon Iron and Steel,
made very heavy for recutting.
A full Stock of Steel and Files at all times on
hand. 6m4

Dudley B. Fuller & Co.,
IRON COMMISSION MERCHANTS,
No. 139 GREENWICH STREET,
NEW YORK.

Manning & Lee,
GENERAL COMMISSION MERCHANTS,
NO. 51 EXCHANGE PLACE,
BALTIMORE.

Agents for Avalon Railroad Iron and Nail Works.
Maryland Mining Company's Cumberland Coal 'CED'
—'Potomac' and other good brands of Pig Iron.

Samuel Kimber & Co.,
COMMISSION MERCHANTS
WILLOW ST. WHARVES, PHILADELPHIA.
AGENTS for the sale of Charcoal and Anthracite
Pig Iron, Hammered Railroad Car and Locomo-
tive Axles, Force Pumps of the most approved con-
struction for Railroad Water Stations and Hydraulic
Rams, etc., etc.
July, 27, 1849.

James Herron, Civil Engineer,
OF THE UNITED STATES NAVY YARD,
PENSACOLA, FLORIDA.,
PATENTEE OF THE
HERRON RAILWAY TRACK.
Models of this Track, on the most improved plan,
may be seen at the Engineer's office of the New York
and Erie Railroad.

PLUSHES

FOR

Railway Cars & Omnibuses.
F. S. & S. A. MARTINE,
112 WILLIAM ST., NEAR JOHN.

ARE now receiving a large and complete assort-
ment of Plain and Figured PLUSHES, of their
own importation, which will be sold at the lowest
market price, viz: Crimson, Maroon, Scarlet, Green,
Blue, Purple, etc.
ALSO—CURLED HAIR, the best manufactured
in market.

**To Railroad Companies,
Machinists, Car Man-
ufacturers, etc., etc.**

CHARLES T. GILBERT,
NO. 80 BROAD ST., NEW YORK.

IS prepared to contract for furnishing, at manufac-
turer's prices—
Railroad iron,
Locomotive Engines,
Passenger and Freight Cars,
Car Wheels and Axles,
Chairs and Spikes.

Orders are invited; and all inquiries in relation to
any of the above articles will receive immediate atten-
tion

**Manufacture of Patent Wire
ROPE AND CABLES,**
For Inclined Planes, Suspension Bridges, Standing
Rigging, Mines, Cranes, Derrick, Tilters, &c., by
JOHN A. ROEBLING, Civil Engineer,
TRENTON, N. J.

FORGING.

Ranstead, Dearborn & Co.,
MANUFACTURERS OF
LOCOMOTIVE CRANKS AND CAR AXLES,
ALSO
WROUGHT IRON SHAFTING,
And All Kinds of Hammered Shapes.
Office 25 Foster's Wharf, Boston.

Samuel D. Willmott,
MERCHANT, AND MANUFACTURER OF
CAST STEEL WARRANTED SAWS,
—AND FILES—
IMPORTER OF THE
GENUINE WICKESRLY GRINDSTONES
NO. 8 LIBERTY STREET,
NEW YORK.

Railroad Instruments.

THEODOLITES, TRANSIT COMPASSES,
and Levels, with Fraunhoffer's Monich Glasses,
Surveyor's Compasses, Chains, Drawing Instru-
ments, Barometers, etc., all of the best quality and
workmanship, for sale at unusually low prices, by
E. & G. W. BLUNT,
No. 179 Water St., cor. Burling Slip.
New York, May 19, 1849.

IRON.

Iron.

Pig Iron, Anthracite and Charcoal; Boiler and Flue
Iron, Spring and Blistered Steel, Nail Rods, Best Re-
fined Bar Iron, Railroad Iron, Car Axles, Nails, Stove
Castings, Cast Iron Pipes of all sizes, Railway Chairs
of approved patterns for sale by
COLEMAN, KELTON & CAMBELL,
109 N. Water St., Philadelphia.

Iron Store.

THE Subscribers, having the selling agency of the
following named Rolling Mills, viz: Norristown,
Rough and Ready, Kensington, Triadelphia, Potts-
grove and Thorndale, can supply Railroad Companies,
Merchants and others, at the wholesale-mill prices for
bars of all sizes, sheets cut to order as large as 68 in.
diameter; Railroad Iron, domestic and foreign; Loco-
motive tire welded to given size; Chairs and Spikes;
Iron for shafting, locomotive and general machinery
purposes; Cast, Shear, Blister and Spring Steel; Boil-
er rivets; Copper; Pig Iron, etc., etc.

MORRIS, JONES & CO.,
Iron Merchants,
Schuylkill 7th and Market Sts., Philadelphia.
August 16, 1849. 1793

Bowling Iron. Stamped B.O.

Railway Tire Bars Rivet Iron
Locomotive and other Axles Locomotive Frame do
Boiler Plates Bars,
and every other description of this superior Iron.

The subscribers, agents for the sale of Bowling Iron, are prepared to execute orders for importation, especially for railway and machinery uses, with despatch from the manufacturers.

RAYMOND & FULLERTON, 45 Cliff st.

**Ibbotson, Brothers & Co's
CELEBRATED CAST STEEL**

AND

Best Cast Steel Royal Improved Files, well known as better adapted for Engineers' and Machinists' purposes than any now in use in the United States.

Every description of Square, Octagon, Flat and Round Cast Steel, Sheet, Shovel and Railway Spring Steel, etc., and Steel to order for any purposes—manufactured at their works in Sheffield—and universally known by the old stamp "Globe."

HENRY I. IBBOTSON, Agent,
218 Pearl st., New York.

**Smith & Tyson,,
IRON COMMISSION MERCHANTS,
BALTIMORE.**

REFINED Junlata Charcoal Billet Iron for Wire. Do. for Bridging, of great strength.
Flat Rock, Boiler and Flue Iron, rolled to pattern.
Elba, Wheel Iron of great strength and superior chiling properties. Elba Forge Iron, American Shot Iron, Cut Nails, Spikes and Brads, Nail and Spike rods, Railroad Spikes of superior quality, Wrought Chair plates of any pattern, punched or plain.

**WILLIAM JESSOP & SONS'
CELEBRATED CAST-STEEL.**

The subscribers have on hand, and are constantly receiving from their manufactory,

PARK WORKS, SHEFFIELD,

Double Refined Cast Steel—square, flat and octagon.
Best warranted Cast Steel—square, flat and octagon.
Best double and single Shear Steel—warranted.

Machinery Steel—round.
Best and 2d gy. Sheet Steel—for saws and other purposes.

German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.

Genuine "Sykes," L Blister Steel.

Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by

WM. JESSOP & SONS,
91 John street, New York.

Also by their Agents—

Curtus & Hand, 47 Commerce street, Philadelphia.

Alex'r Fullerton & Co., 119 Milk street, Boston.

Stickney & Beatty, South Charles street, Baltimore.

May 6, 1848.

Railroad Iron.

B. O. Railway Tires, Railway Wheels,
Scotch Pig Iron, Tin Plates and Banca Tin,
Muntz Patent Metal Sheathing,
Baltimore Copper.

Contracts for Rail made on behalf of the manufacturers, for delivery at any ports in the United States, at fixed prices.

Bowling Tires and Tire Bars and Scotch Pigs imported to order.

Muntz's Ship-sheathing, and a general stock of Tin Plates and Banca Tin in store, and for sale by
RAYMOND & FULLERTON, 45 Cliff st.

IRONDALE PIG METAL, MANUFACTURED
and for sale by the Bloomsburg Railroad Iron Co.
LINDLEY FISHER, Treasurer.
75 N. Water St., Philadelphia.

Car Wheel Iron.

THE celebrated cold blast "Conowingo" Pig Iron, for Railroad Wheels, Chilled Rolls, etc., for sale by
E. PRATT & BROTHER,
Baltimore, Md.

Railroad Iron.

3,000 TONS C. L. MAKE 63½ lbs. per yard, now landing and to arrive.

Also contracts made for future delivery of above superior make English Iron.

300 Tons Banks Best Iron, Round, Square and Flat.

200 " English Bar " " " "

10 " 9-16 Square Iron for Railroad Spikes.

For sale in lots to suit purchasers by

DAVID W WETMORE.

New York, March 26, 1850.

2m

**PATENT EXCELSIOR SPRING
for Railroad Cars, Locomotives, etc.**

No. 1.—At Rest.



No. 2.—Under Heavy Pressure.



No. 3.



THESE Springs are composed of a Plate of Steel with Oak or Ash Wood, firmly riveted thereto, having saw kerfs in which are inserted flat plates of metal. The Spring is very powerful and yet sensitive.

They are now being manufactured and sold by the Excelsior Spring Company, under a Patent granted on 20th May, 1851.

The above Drawing, No. 1, represents a side view of the Spring when it is at rest. No. 2, shows the same when under heavy pressure. No. 3, represents a Spring having only two plates instead of the usual number inserted in the wood.

This is undoubtedly the best Spring of the day—it is very simple—easy of application—light—cannot get out of order—and it is without any exception the most adjustable spring now made—for it will spring fifty

or five thousand pounds with the same ease.

The cost of the springs is very much less than that of any other.

The Excelsior Spring Co., determined that every spring shall be of the best quality, have established a Factory, where each spring is made directly under the eye of Mr. Bissell, the inventor—and before a spring is allowed to leave the factory it is subjected to a much severer test than it ever can be when at work. Each Spring is guaranteed to perform the required work.

Any person infringing on this patent will be prosecuted.

Office of EXCELSIOR SPRING COMPANY.

33 Broadway, New York.

June 7, 1851.

Railroad Spikes, Boiler Rivets, etc.

THE Subscribers, Agents for the sale of James S. Spencer's, Jr., Railroad and Boat Spikes, Boiler Rivets, and Wrought Iron Chairs for Railroads, made at his Works near this city, will execute all orders with promptness, despatch, and of the best quality.

ALSO IMPORTERS of English refined and Merchant bar Iron; Extra refined Car and Locomotive Axles (from 3½ to 6½ inches in diameter); B. O. Locomotive Tire (welded by Baldwin). Also, supply Boiler and Flue Iron cut to pattern or otherwise.—Spring, Shear, and Cast Steel, etc., etc., etc.

T. & E. GEORGE.

Philadelphia, November 14, 1850.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract for the delivery of English, Welsh and Scotch Rails, of any pattern and weight, also for every description of English, Welsh, Scotch, and Swedish Iron, Railway Chairs and Spikes, Rivets, Bolts, Nuts, Washers, Chain Cables, Anchors, Tin Plates, German Spelter, Iron Castings, and every description of Machinery.

WILLIAM BIRD & CO.,
Iron and Tin Plate Merchants,
44 Wall st., New York.

And at 5 Martin's Lane, City, London,
and 140 Buchanan st. Glasgow.

July 27th, 1850.

Railroad Iron.

THE "Montour Iron Company" is prepared to execute orders for Rails of the usual patterns and weights, and of any required length not exceeding 30 feet per rail. Apply to

THOS. CHAMBERS, President,
66 Broadway, N. Y.,

Or to the Agents,
CHOUTEAU, MERLE & SANFORD,
NO. 51 New st., New York.

September, 1850.

Railroad Iron.

THE Undersigned, Agents for the Manufacturers, are prepared to contract to deliver free on board at shipping port in England, or at port of discharge in the United States, Rails of superior quality, and of such weight or pattern as may be required.

VOSE, PERKINS & CO.,

74 South St.

New York, June 1, 1851.

Railroad Iron.

1650 Tons, weighing about 61 lbs. per yard, 40 tons, weighing about 52 lbs. per yard, and 825 tons, weighing about 53½ lbs. per yard, of the latest and most approved patterns of T rail, for sale by

BOORMAN, JOHNSTON & CO.,
119 Greenwich street.

New York, Aug. 26, 1850.

N.B.—B. J. & Co are also prepared to take contracts for English rails, delivered in any of the Atlantic ports of the United States.

Tredegar Iron Works.

ROLLING MILL FOUNDRY AND MACHINE

SHOPS. The undersigned continues to manufacture at his Works in this city (from best charcoal metal) Bar Iron of every description, embracing—

Rounds and Squares, from ½ to 5 inches diameter. Flats, from ½ to 7 inches, all thicknesses.

Bands and Scrolls, all sizes. Boiler plate and Plough Iron. Railroad and Locomotive Axles and Tires. Locomotive Frames, Spikes and Plates. Hoops, Ovals, Half Ovals, Half Rounds, Angle, T, L, and indeed every description of Iron usually manufactured, all of which he warrants to be equal to any made in this country. He also manufactures at his Foundry and Machine Shops all descriptions of Railroad Work, say, Locomotives, Railroad Wheels and Axles complete and ready for the road, Railroad Chairs, etc. Also, Marine and Stationary Engines all sizes, Sugar mills and Engines, Horse mills, and every kind of Machinery usually required for the operations of the country. He has paid particular attention to getting up machinery, etc., for Gold Mine operations, and those in want of such work might find it to their advantage to give him a call.

J. R. ANDERSON.

Richmond, Va., Sept. 10, 1850.

CUT NAILS OF BEST QUALITY, BAR IRON

(including Flat Rails) manufactured and for sale by
FISHER, MORGAN & CO.,
75 N. Water St., Philadelphia.

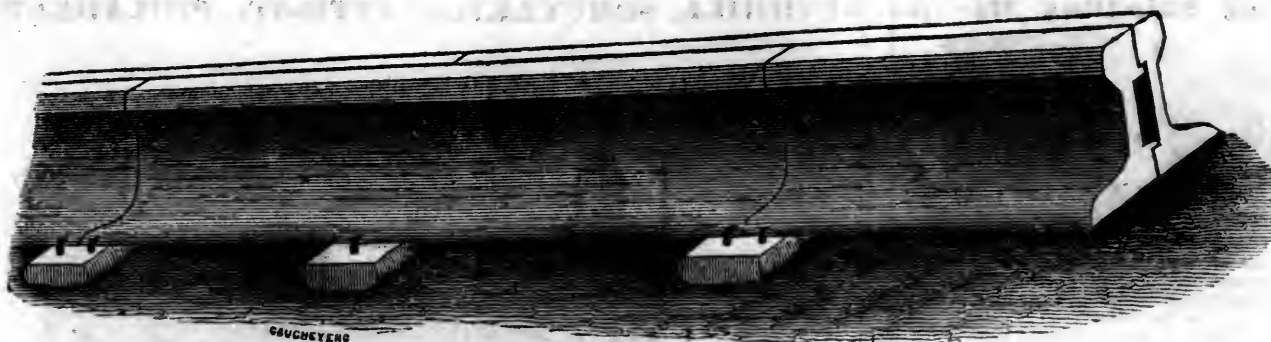
TO RAILROAD COMPANIES, CAR MANUFACTURERS, etc.

THE Undersigned hereby gives public notice, that the Commissioner of Patents, pursuant to his decision in relation thereto, on the 8th day of October, 1850, issued to him a Patent for the sole right to manufacture, and exclusive use of the **INDIA RUBBER CAR SPRING**, on account of priority of invention of said Spring.

F. M. RAY.

New York, Oct. 23, 1850.

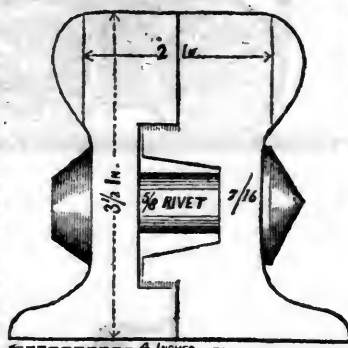
PATENT COMPOUND RAIL.



THE UNDERSIGNED NOW OFFER TO THE Railroad Public a new Compound Railroad Bar, which possesses, as they believe, a decided superiority over every kind now in use. The Cuts annexed will give a good idea of the form of the Rail, and the mode of combination.

This Rail has now been in use on the New York and Erie and the Utica and Schenectady Railroads for nearly two years, and has proved itself to be a *durable and continuous* rail, realizing the advantages of a theoretically perfect rail, over the one in common use. We invite the attention of Railroad Companies to a careful examination of the merits of the form now offered.

The advantages of this Rail are: first, it effects a saving of from 25 to 50 per cent. in the wear and tear of the machinery; secondly, it saves to a vastly greater extent in the repairs of track; thirdly, it secures a much higher rate of speed with the same power; and what is of still



greater importance, it offers complete protection against most of the accidents to which companies are liable. For these reasons, it is believed to be not only the best, but the cheapest rail that can be used. In enumerating its advantages, the proprietors only repeat the statements of competent persons, who have had the best opportunities of judging of its merits.

This improved Rail is now being manufactured at the Works of the Mount Savage Iron Co. in Maryland. Any communications or enquiries addressed to either of the undersigned will receive prompt attention.

J. F. WINSLOW, President,
Troy, N. Y.
ERASTUS CORNING, Albany.
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore.

April 8, 1851.

N.B.—Patterns of the above rail are placed with Mr. A. V. Winslow, Cincinnati, Ohio, who is authorised to negotiate with parties for the same.

Faggotted Car and Engine Axles

FORGED by RANSTEAD, DEARBORN & Co., Boston, Mass. These Axles enjoy the highest reputation for excellence, and are all warranted.

Iron Trade of Pennsylvania.

DOCUMENTS and Statistics relating to the Manufacture of Iron in the State of Pennsylvania—giving a history of the manufacture from its commencement to this date, illustrated by diagrams. Also tables giving the address and capacity of every establishment in the State. Prepared by direction of the late convention of the trade held in Philadelphia. For sale by

LINDSAY & BLACKISTON, Philadelphia.
FIELDING LUCUS, Jr., Baltimore.
HENRY G. NICHOLS, 79 Water st., N. Y.
or at this office—price \$1 00.

It will be sent by mail to any order enclosing the money, and post paid.

Ulster Iron.

THE ULSTER IRON WORKS, Saugerties, N. Y., continue in full operation. Orders for round, square, flat, band, hoop and scroll iron, will be received and promptly executed by

J. & L. TUCKERMAN,
69 West St., New York.

India-rubber for Railroad Cos.

RUBBER SPRINGS—Bearing and Buffer—Fuller's Patent—Hose from 1 to 12" diameter. Suction Hose, Steam Packing—1/2 to 2 in thick. Rubber and Gutta Percha Bands. These articles are all warranted to give satisfaction, made under Tyer & Helm's patent, issued January, 1849. No lead used in the composition. Will stand much higher heat than that called "Goodyear's," and is in all respects better than any in use. Proprietors of rail roads do not be overcharged by pretenders.

HORACE H. DAY,
Warehouse 23 Courtlandt street
New York, May 21, 1849.

Railroad Iron.

2000 TONS T RAILS, of desirable pattern, arrived, and to arrive, for sale by
RAYMOND & FULLERTON,
61 21 45 Cliff st.

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. J. F. WINSLOW, President
Troy, N. Y.
ERASTUS CORNING, Albany
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md

November 6, 1848.

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phoenix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehanna river; which two establishments are now turning out upwards of 1800 tons of finished rails per month. Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.

REEVES, BUCK & CO.
45 North Water St. Philadelphia;
March 15, 1849

LAP—WELDED WROUGHT IRON TUBES

FOR
TUBULAR BOILERS,
FROM ONE AND A QUARTER TO SEVEN INCHES IN DIAMETER.

THE ONLY Tubes of the same quality and manufacture as those so extensively used in England Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER & SON, Patentees,
28 Platt street, New York.

AMERICAN PIG IRON.

"**POUGHKEEPSIE**" brand, Dutchess Co., N. Y.
"GLENDALE" brand, Lehigh county, Pa.
Orders for the above two well known brands will be received, and promptly executed, by
J. & L. TUCKERMAN,
69 West St., New York.

American Cast Steel.

THE ADIRONDAC STEEL MANUFACTURING CO. is now producing, from American iron, at their works at Jersey City, N. J., Cast Steel of extraordinary quality, and is prepared to supply orders for the same at prices below that of the imported article of like quality. Consumers will find it to their interest to give this a trial. Orders for all sizes of hammered cast steel, directed as above, will meet with prompt attention.
May 28, 1849.

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for rail roads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.

JOHN F. WINSLOW, Agent.
Albany Iron and Nail Works, Troy, N. Y.
The above Spikes may be had at factory prices, of Erastus Corning & Co Albany; Merrill & Co., New York; E. Pratt & Roberts, Baltimore Md

Stickney & Beatty, DEALERS IN IRON AND IRON MANUFACTURERS.

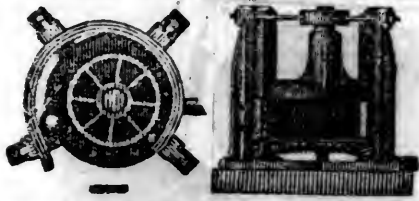
AGENTS for the Baltimore City Rolling Mill (Works of Messrs. Ellicott) also agents for the sale of the Laurel, Locust Grove and Gunpowder (Balt.) Forge Pig Irons; Hupp's Cold Blast Columbia Wheel Iron, Fort and anti-Eatam Pig Irons. Caledonia, Columbia and Capon Cold Blast Boiler Blooms, warranted; Wm. Jessop & Son's Steel; Old Colony and anti-Eatam Nails; Bar Iron, Boiler Plates, Hoop, Sheet, Oval, Half Oval, Horse Shoe and other Iron. Exchange Place, Baltimore.

Railroad Iron.

2000 TONS, weighing 58 pounds per lineal yard, of the most approved pattern of T rails, in store and to arrive, for sale by
COLLINS, VOSE & CO.,
74 South St
New York, June 1, 1850.

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phoenixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous; considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll sounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y.

P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery for making Spikes, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

CHILLED RAILROAD WHEELS.—THE UNDERSIGNED are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

Brown's Old Established SCALE WARE HOUSE,
NO. 234 WATER ST., NEW YORK.

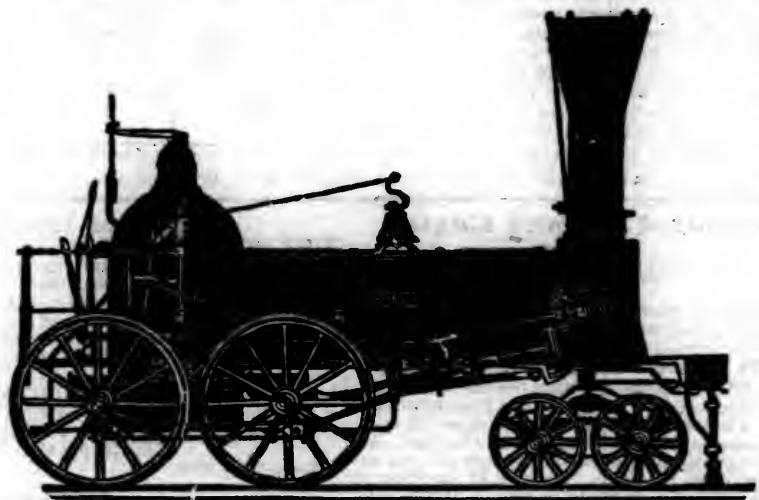
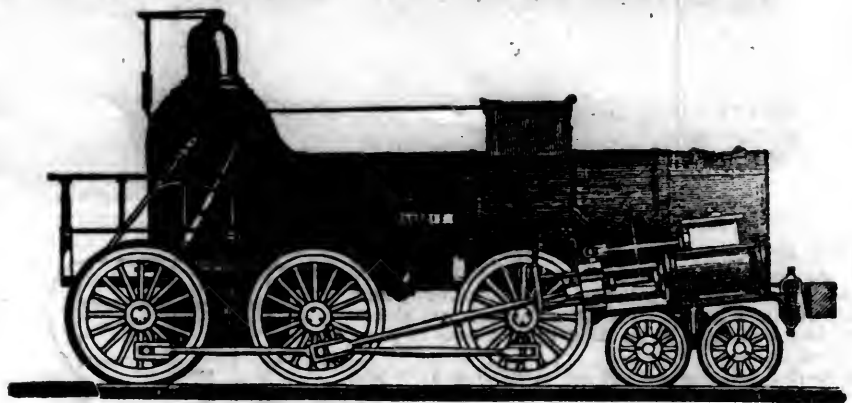
THE Subscriber, Practical Manufacturer of Scales of every description, respectfully asks the attention of Railroad Companies to his Improved Wrought Iron Railroad Track and Depot Scales which for strength, durability, accuracy, convenience in weighing, and beauty of workmanship, are not surpassed by any others in this country.

He is aware that this is rather a bold assertion for him to make, yet he can say with confidence that they have but to be tried to give them precedence over all others.

J. L. BROWN.

Bank Scales made to order, and all Scales of his make Warranted in every particular.

Refer to given required

NORRIS' LOCOMOTIVE WORKS.
BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,

THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size. Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tyres are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS

PATENT MACHINE MADE HORSE-SHOES.

The Troy Iron and Nail Factory have always on hand a general assortment of Horse Shoes, made from Refined American Iron.

Four sizes being made, it will be well for those ordering to remember that the size of increases as the numbers—No. 1 being the smallest.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

Etna Safety Fuse.

THIS superior article for igniting the charge in wet or dry blasting, made with DUPONT'S best powder, is kept for sale at the office and depot of

REYNOLDS & BROTHER,

So. Manufacturers,

No. 85 Liberty St.

NEW YORK.

And in the principal cities and towns in the U. States. The Premium of the AMERICAN INSTITUTE was awarded to the Etna Safety Fuse at the late Fair held in this city.

November 3, 1849.

ly

UNION WORKS,

North street, opposite the Railroad Depot,
BALTIMORE.

Poole & Hunt,

Manufacturers of Steam Engines and Mill Gearing, Machinists' Tools, and all kinds of heavy and light Machinery.

Also put up Arrangements of Wrought Iron Pipes for heating buildings and conveying steam or water. Castings of every kind furnished at short notice.

Every exertion will be made to insure the satisfaction of customers.

Patent Machine Picket Fence

SIX DIFFERENT STYLES of this fence are now made by patent machinery; and is by far the most economical fence for Railroads, Farms, Yards, etc., ever yet offered to the public, costing only from 4 to 30 cents per foot, according to pattern; and is so put up as to be shipped at a trifling expense. Full particulars will be furnished, by addressing the subscriber, to whom all orders should be sent.

N. STRATTON, Troy, N. Y.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 136 NASSAU ST., NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.
SECOND QUARTO SERIES, VOL. VII., No. 28! SATURDAY, JULY 12, 1851. [WHOLE No. 795, VOL. XXIV.]

ASSISTANT EDITORS,
J. T. HODGE, *For Mining and Metallurgy.*
GEN. CHAS. T. JAMES, *For Manufactures and the Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & CO., 136 NASSAU ST.

Saturday, July 12, 1851.

LETTER III.

Kentucky, June 30, 1851.

TO THE EDITOR OF THE R. R. JOURNAL:

In my last I gave you a short sketch of the roads under construction and proposed; by it you will see, that if Kentucky did sleep she has awakened with renewed vigor and strength, and is now imbued with a railroad spirit that will not stop nor rest till the iron horse is running his tireless race throughout the length and breadth of this beautiful State—"the Garden of the Union."

In my last I stated that I would in my next give you a description of the importance and connections of some of the roads. It is well known that Kentucky is in every respect a trading State; that is, her inhabitants sell every thing they raise, and buy every thing they consume; they manufacture nothing. The products of the State are of an extremely heavy nature, and very valuable—such as cattle, mules, hogs, hemp, tobacco, and grain of all kinds. The market for their cattle and mules is at the east and south. Baltimore, Richmond, Phila-

delphia, New York and New Orleans, and the southeastern cities, are the principal buyers of these products. The hogs find a temporary market in Louisville and Cincinnati; but are finally consumed, or have their final market in the large seaboard and manufacturing cities. The hemp principally passes south to the cotton fields in the shape of bale rope and bagging; and the tobacco finds its ultimate market in New Orleans, Baltimore, Philadelphia and New York. The grain is most of it walked off in the shape of stock. Such is the course that the products of Kentucky, immense in quantity and value, take to find their markets; and that, too, by the slowest and most expensive kinds of transportation from the interior, until they reach the great water courses; and the amount of money annually paid by the farmers of this State, as the cost of transportation, over and above the cost of the same work if done by railroad, would in a few years construct all the railroads ever required in Kentucky.

This is not all: for the interior of the State is, in its most densely populated portions, entirely devoid of the necessities of life—such as fuel, salt, iron and lumber; and these articles, heavy and expensive of land transportation, are carried from the Ohio and its tributaries to the interior in wagons, until the cost of carriage is more than the actual first cost of the articles. As an instance: coal is selling in Lexington at 20 to 25 cents, and in several villages along the line of the Maysville road at 28 and 30 cents per bushel; yet this same coal can be bought at Maysville at 5½ to 6 cents per bushel. This discrepancy exists in other articles that are transported in wagons. The farmers of Kentucky are great consumers of goods of all kinds, and groceries; and this State is about one of the best customers, both as regards amount of purchases, and punctuality of payments, that any or all of the eastern cities have. The dry goods and groceries thus purchased in the eastern cities, are hauled throughout the length and breadth of the State (if we except a narrow strip bounding the navigable and slack watered streams) in wagons at great expense, averaging generally about 13 cents per ton per mile; and as a necessary consequence, at the expense of the farmer, who not only pays the transportation expenses of everything he consumes, but also pays for the transportation of every thing he raises, to a market.

The reason why railways will benefit this and all other southern and southwestern States, is because they will reduce to the farmer the cost of transportation both ways. About the most important road in Kentucky, in this view, is the Maysville and Lexington road. It passes through Mason county, with a tax list of nine millions; through Flemming, with a tax list of four millions; through Nicholas, with three and a half millions; through Bourbon, with twelve millions; and through Fayette county with eighteen millions. Thus in 70 miles, passing through a small tier of counties, whose taxable property is forty-six and a half millions. Where is there a parallel case? This rich section of country raises immense products, and the people are great consumers; their supplies must pass over the Maysville road, as well as their products that are destined for an eastern market, for the reason that Maysville is the nearest point where they can get their necessities, and because it offers the shortest and cheapest route to the east.

Thus much for the Maysville road, by way of its local importance; now let us examine its connections. At Lexington it connects with a line of roads in operation to Louisville, and eventually to Columbus, on the west, and Nashville on the southwest. At Nashville a railroad connection unbroken will shortly be formed with Memphis, and even New Orleans, on the southwest, and with Charleston and Savannah on the southeast. A line of railway is also in course of construction from New Albany, opposite Louisville, to St. Louis, and even as far north as Chicago. Again at Lexington the Maysville road will also form a connection with the Danville road. While at the Maysville end it will connect, with the road via Big Sandy, with Richmond, Baltimore and Washington, by the shortest possible route, it will also connect with a road (the charter for which is obtained) in Ohio, extending from Aberdeen, opposite Maysville, to Hillsboro' 40 miles, where it will connect with the Cincinnati and Belpre line. The charter also allows the road to be extended from Hillsboro' to Columbus, where it will connect with all the roads culminating at that point. A road is also now being strongly agitated to extend from Aberdeen, opposite Maysville, to Chillicothe, about 60 miles—thence it will give a connection, via Zanesville, to Wheeling; and thence by the Hempfield road and the Pennsylvania railroad, it will give a direct

connection with Philadelphia and New York, by a route shorter and cheaper than by any other route. It is the first railway connection between the east and northeast and the west and southwest, after the Appalachian chain of mountains is passed; and must, from this fact, control an immense amount of through trade and travel.

The Big Sandy road I have spoken of, in my last, as to its connections and importance; and also of the Danville road. The Covington road next comes into view. It is an important road to Cincinnati, and must do as large an amount of local business as any road would do that has a rich and fertile country to supply, and a large and populous city to consume. It cannot, however, ever be anything else but a local road; and cannot, from its topographical position, ever possess the importance as a connection, that the Maysville road does.

The Louisville and Nashville road now attracts more attention throughout the State than almost any other work, as it forms the only unprovided link in the chain between the Ohio and the Gulf on the south, and the Atlantic on the southeast. It also forms a most important link in the great southwest and northeast chain; and from its geographical position, it occupies a most important attitude. It will pass through a most beautiful and fertile country, and also through a rich mineral district, and will, it is believed, enable Louisville to procure a constant steady supply of coal and iron at as low a rate, if not lower, than any other city on the Ohio; this alone will justify Louisville in aiding in its construction. It will also open up a section of country that has hitherto been almost inaccessible, except on horseback or in stages. It will be a connecting link, and the only one, between the great net work of railroads north of the Ohio, and the extensive lines of road in the States south and southeast of the Ohio; and must, from its position, command more trade and travel, both local and through, than any other road either south or west; and it cannot but result in a great and lasting benefit to the city of Louisville. Thus much for the importance and connections of the Kentucky railroads. In my next I will endeavor to give you a statement of the proposed mode of raising means to construct so large an amount of railroad.

Yours, LOCOMOTIVE.

Kentucky, July 6, 1851.

TO THE EDITOR OF THE R. R. JOURNAL:

In my last I promised to give you a statement of the proposed mode of raising means to construct the works at present under consideration in Kentucky.

The disastrous results connected with the Lexington and Frankfort railroad in its first construction, and also in its rebuilding (as it cost \$150,000 more than was estimated), had a great and all-powerful influence in deterring individuals from subscribing to the stock of any road, no matter how fair its prospects were for a large and lucrative business. This was so much the case, that but \$40,000, or less, was subscribed outside of Louisville, towards constructing that important work—and it was principally constructed by city taxation and city credit. Even the great results that have been realised since the construction of that road, from its present and prospective business, have no tendency to strengthen the people in the impression that railroads may be made to pay a fair per centage as an investment.

In order to illustrate more fully the mode of raising means, I will take the case of the Maysville

road—as its officers and friends have done more to aid in the construction of railroads throughout Kentucky, than any other set of gentlemen within the State.

The mode of raising the means is somewhat peculiar, and is entirely novel to Kentucky. As it must, however, have a tendency to throw a large amount of securities into the New York market during the next five years, it will perhaps be well for your capitalists to look closely to the merits of the securities: as they offer, in my estimation, by far the most desirable investment for capital that will be offered in the market; and I am informed that some of the securities have already been offered, and found a ready sale at even superior prices.

The friends of the Maysville road, shortly after the organisation of their company by the city subscription of \$150,000, became satisfied that they would not be able to realise a sufficient amount by private subscription to construct the work, and therefore turned their attention to devise ways and means to raise the balance. For this purpose they obtained the passage of laws authorising the counties through which the road passes, and which will be benefitted by the construction of the road, to take a vote in each county, as to the propriety of the different counties subscribing as a corporation, and levying a direct tax, of one per cent per year, to pay the amount of such subscription. This mode, when first broached, met with many friends—but soon became obnoxious, from its being oppressive, and it was abandoned. The friends of the road, still active, then proposed another plan; which was, that the counties should take a vote as to the policy of subscribing, and if the vote was in the affirmative, that the subscription should be made; and the bonds of the county so subscribing, should be issued to the company, with coupons attached, payable in New York city, thirty years after date—the county being taxed every year to pay the interest in New York city. Laws were passed by the Legislature, authorising the subscriptions in this mode, and compelling the proper officers of the county to issue the bonds if voted, and also to levy the tax and collect it. Under these laws, the board of the Maysville road called an election in the county of Mason, as to the propriety of that county (with nine millions worth of property) subscribing \$150,000 to the capital stock of the company. The question was thoroughly canvassed throughout the county, and met with considerable opposition; yet it was carried by about 600 majority, and the subscription was made, and \$50,000 worth of bonds issued to the company, and a tax of 3½ cents upon every \$100 worth of property in the county levied to pay the interest upon them; \$50,000 worth more will be issued next year, and a tax of 7 cents will be levied; the third year the whole amount of the bonds will be issued, and a tax of 10 cents levied to meet the interest, and so on.

The Maysville board, after meeting with success in the county of Mason, called a vote in the county of Fayette, which has eighteen millions worth of property, as to the propriety of subscribing \$200,000 to the stock of the road. The question was also canvassed in that county upon every stump and in every school-house; but it was finally carried by nearly 700 majority, and the subscription was made.

Then a vote was called in Bourbon county, with its twelve millions worth of property, and the sub-

scription was ordered, by about 550 majority, for \$150,000.

This is the mode by which the friends of railroads in Kentucky hope to be able to build their roads; and this is the class of security they intend offering for means to aid in their construction.—The constitutionality of such a subscription by the counties or cities, has been repeatedly decided by the highest judicial authority in this State; and this class of securities are the very best that can be offered. They offer the advantages of long date and punctual semi-annual payments. A large amount of property is pledged for the payment of interest and principal. They are not subject to repudiation—for the counties have no repudiating power. They are not subject to the fluctuations that State stocks are; and are given in good faith, by an honorable, high-minded people, to construct public works that must double the already large amount of taxable property in these counties; and the purchaser does not, as is often the case, look to some badly managed railroad company for the prompt payment of his semi-annual interest; but he looks to the treasurer of a populous and wealthy county for it. Surely, these bonds must attract the attention of capitalists. Again, they are endorsed by the railroad company—and thus all the private stock in the company is also pledged for their redemption. The mode adopted by the city of Louisville is to subscribe (as is the case with the Nashville road) one million—subject, however, to a vote of the people; if the vote is in the affirmative, the subscription is made, and \$500,000 is paid up by direct taxation; for the other \$500,000, the city bonds are issued at thirty years, with interest semi-annually in New York city.

Several counties in the State, along proposed lines of roads, have taken votes upon the question of county subscriptions—and in almost every instance it has been carried by a large majority; and it is within bounds, when I state that not less than three millions of this kind of security will be offered in your market during the next five years to come. Should these securities meet with a ready sale—and who can doubt their value?—this beautiful State will soon be among the foremost of the railroad States; and I have but little, if any doubt, but that her roads will pay as large dividends as any other roads in the Union:—1st, because they cost but little in comparison with the New York and eastern roads; 2d, because, owing to the mildness of the climate, and the comparative cheapness of fuel, they can be worked cheaply; and, lastly, because the wants for such means of communication are very great, and they must do a very large amount of business.

Yours, LOCOMOTIVE.

Pittsburgh and Cincinnati Railroad.

A highly important railroad movement was made last week in Ohio. Its object is the construction of a continuous line of railroad from Pittsburgh to Cincinnati, without crossing the Ohio River, and without making use of any part of those lines whose interests tend to divert trade and travel in other directions. Most of the lines in northern Ohio are interested in taking travel to the Lake shore, whilst the Columbus and Newark, and Cincinnati and Belpre lines, tend towards Wheeling and Parkersburg. A company has been for some time organized at Mount Vernon, with a view of making a railroad from the Ohio and Pennsylvania railroad, at its southern bend near Loudonville, to Columbus, by way of Mount Vernon. Another company has been organized at Springfield, where the Little Miami railroad terminates, to make a road from that point to our Pittsburgh road. Considerable sums have been subscribed to the stock of both these

companies, but both felt the importance of obtaining additional strength. A conference between the boards of directors of the two companies was held at Delaware, on Wednesday and Thursday last, with a view of uniting the strength of both companies on one line by a union of interests. At the request of the gentlemen interested, the conference was attended by Solomon W. Roberts, Esq., Chief Engineer of the Ohio and Pennsylvania railroad company.

The result was of the most harmonious and gratifying character, the terms of union were unanimously agreed upon, and it was determined to prepare a portion of the line for letting as soon as practicable. S. W. Roberts, Esq., was chosen consulting engineer of the company.

The line will be about one hundred and ten miles long, commencing on our Pittsburgh road near Loudonville, and running by Mount Vernon, Delaware and Marysville, to Springfield. Each of the four towns last named is a county town, and in each of the counties a county subscription has been authorized by a vote of the people.

At Mount Vernon, the line will cross the Columbus and Lake Erie road, and at Delaware, the Cleveland and Columbus road, and at Springfield, eighty miles from Cincinnati, the road will connect with two lines leading to that city, giving its passengers a choice of routes by the valleys of the Little and Big Miami. It will pass through the geographical centre of the state of Ohio, and through a very populous and highly flourishing country. Whilst the directors were at Delaware, a large and enthusiastic meeting of the citizens was held in favor of the enterprise, which was addressed by several speakers, among whom was Gen. C. Anthony, of Springfield, President of the Springfield and Mansfield railroad company, to whose energetic efforts the flattering prospects of the work are in a great measure due.

The president and directors of the Ohio and Pennsylvania railroad company, have long looked upon this connexion as one that will add greatly to the trade and travel of their line; and it was with their consent that their Chief Engineer was induced to aid in the preliminary arrangements for the undertaking. He returned immediately to his labors here.

Pittsburgh and Philadelphia and the Pennsylvania railroad company will derive many advantages from a direct and continuous railroad connection with Cincinnati, unbroken by the Ohio river, and which will not make use of a single mile of any line, the interests of which will tend to turn trade and travel either to the north or to the south of us. It will enrich the towns that it will touch, and the counties it will traverse, and the new Pittsburgh and Cincinnati railroad has our best wishes for its success.—*Pittsburgh Gazette*, July 1.

Survey of the Louisville and Nashville Railroad.

We are glad to have it in our power to announce that the committee appointed by our General Council, to have a survey made of the several routes, for a railroad from Louisville to Nashville, have secured the services of L. L. Robinson, Esq., engineer of the Maysville and Lexington railroad, who will, in the course of a week, enter upon his duties. Mr. Robinson is an active, an energetic and intelligent gentleman, and one of the most skillful and experienced engineers in the whole country. He has greatly distinguished himself by his vigorous efforts in behalf of the Maysville and Lexington railroad, and we have no hesitation in promising that he will be equally efficient in his new sphere. We heartily congratulate our city, and the country, on the proposed route, on the fortunate selection made.

Mr. Robinson will commence his duties in the course of a week, with an efficient corps.

We congratulate the friends of this great enterprise on the bright prospects ahead. Daylight is breaking. Matters begin to look as if we were in earnest, and the survey and estimates made, we hope the route will be located, and the road in progress at an early day. It now behoves the friends of the enterprise on both routes, to bestir themselves. The route selected will, of course, depend much on the amount of subscriptions to the road by the respective counties.—*Louisville Courier*.

New York.

Lebanon Springs Railroad.—We have received a copy of the report of the engineers appointed to make preliminary surveys, for the purpose of locating a railroad from Chatham through New Lebanon, to connect with the roads in Western Vermont. From Lebanon Springs the line follows up Lebanon Creek to Nichols' Summit, in Stephentown, where two lines present themselves, one passing through Stephentown and Berlin to Petersburg, where it would unite with the Boston and Troy railroad, over which a connection can be made with the Western Vermont railroad, at North Hoosac, and the Rutland and Washington road at Eagle Bridge. This route appears to be a feasible and cheap one, as the grades and curves are very favorable.

The other line, called the East route, passes through Hancock and Williamstown, Mass., crossing the Hoosac river at Noble's Bridge, near Williams College, and thence runs through Pownal, Vt., to East Bennington, where it meets the Western Vermont railroad.

The nature of the country through which the above routes pass, is such as to require considerable examination and surveys prior to the location of a railroad, in order to determine the most feasible route.

The estimates are as follows:—

From Hudson and Berkshire railroad to Nichols' Summit, in Stephentown; 16½ miles, about	\$352,000
From Nichols' Summit to junction in Petersburg, (West line) 22½ miles	\$13,500
From Nichols' Summit to East Bennington, (East line) 30½ miles	\$57,000

Thus the whole line would cost, in round numbers, by the West line, about \$666,000, and by the East line, nearly a million of dollars. The former would be thirty-nine, and the latter forty-seven miles in length.

North Carolina.

North Carolina Railroad.—The preliminary surveys of this road have been completed, and we have a copy of the report of the same submitted to the board of directors, at a meeting held at Raleigh, on the 12th of May, by the Chief Engineer, Walter Gwynn, Esq.

The road was projected to connect the Wilmington and Raleigh railroad, where the latter crosses the Neuse, with Charlotte; and the charter imposed, as a condition, that Raleigh and Salisbury should be intermediate points in the line. An examination of the map of the state will show that a straight line between Raleigh and Salisbury is crossed by the waters of the Haw and Yadkin rivers, and by their almost innumerable tributaries, embracing among the most conspicuous, New Hope, Rocky, Deep and Uharie rivers, with their branches. Any one who has travelled the direct road from Raleigh to Salisbury, by Pittsborough and Ashborough, will remember that that route is a continued succession of hills and valleys; and it must have occurred to the traveller that the road might be greatly improved by pursuing a more circuitous route through the numerous ravines which constantly present themselves on the one hand or the other. These hills which so much obstruct the common road, and the graduation of which to easy grades, would render it so serpentine and devious, and carry it so much out of the direct course, would affect in a much greater degree the route of a railroad; no line of any extent, either level or of a given inclination to the horizon, could be maintained, without resorting to a continued succession of

heavy cuttings and fillings, and an infinite series of abrupt curves. In many places, also, the ridges and hills that would be crossed, are composed of rocky ledges, which would add greatly to the expense of graduation.

These difficulties presenting an insuperable objection to a direct line between Raleigh and Salisbury, the most eligible route seemed to be towards the North, around the heads of the water courses above mentioned, where the surface would of course be much more unbroken. It was concluded, therefore, to locate the road through Hillsborough, Graham, Greensborough and Lexington, being much more easy of construction, and intersecting important business localities.

The board of directors, upon consideration, were satisfied of the superiority of this road to all others which had been surveyed or contemplated, and adopted it as the location of the road. The North Carolina railroad, therefore, will commence at the line of the Wilmington and Raleigh railroad, near Goldsborough, passing by Waynesborough, crossing the Neuse about four miles above Smithfield, by Raleigh, Crabtree Bridge, Hillsborough, Graham, Greensborough, Lexington, Salisbury and Concord to Charlotte, a distance of 223 miles. The grades nowhere exceeded fifty feet per mile, with no curves of less than five degrees deflection, and these occur in but very few instances. The cost of the road, laid with T rail, of sixty pounds to the yard, including engineering expenses, superstructure, land damages, and everything appertaining to the road-way, is estimated at a little more than three millions of dollars; or including equipment and work-shops, \$3,400,000.

The road passes through an important portion of the state, embracing a variety of soil and productions. It will connect the rice fields on the Cape Fear with the cotton plantations of Mecklenburg, and every interest in the state will doubtless be benefited and fostered by its genial influence.

The directors are to put it immediately under contract, to be completed by the 1st of January, 1854, unless longer time be allowed by the board.

Railroad Tolls.

For some time past, the standing committee on railroads in our State Senate, have had under consideration a bill to impose canal tolls on the New York and Erie, and Northern railroads. Mr. Geddes, the chairman of the committee, submitted on the 2nd instant, an able and interesting report showing in the clearest light the injudicious operation of legislative enactments, which attempt to coerce the current of business into particular channels by unnatural restrictions.

The report adverts to the fact that the railroads mentioned are carrying passengers and property from the great Lakes to the cities on the sea coast—that these roads were constructed by the capital and enterprise of, and are now owned by, private citizens. At the same time the state owns canals that reach from the Hudson river to the great Lakes, and also owns lateral canals that reach from the main canal to the line of the New York and Erie railroad.

There can be no doubt that both these roads carry large quantities of produce and merchandize that, if there were no railroads, would go on the canals—thus, it is contended, lessening the revenues that the state would otherwise receive on its canals. But if this be the case, it certainly must be because these roads furnish inducements and facilities stronger than the state provides for this business, or they

would not get it. And it is difficult to see what real objection there can be against these roads for furnishing these facilities; or to see how the fact of furnishing these facilities can justify the state in laying a tax on the business they do. Their capital is taxed as is other property, to support the Government in all its expenses; to add to this a tax to be measured by the amount of good they do the public, would be unjustifiable in the opinion of the committee, and we think the good sense of the community will sustain them in this decision.

Having thus shown that the principle upon which these tolls have been levied, is unsound, the report proceeds to call attention to the untair effects of this tax upon the localities that pay it. The New York and Erie railroad being now in operation, and carrying property without being taxed for doing so, takes merchandise from New York city to Cleveland, Ohio, for \$1 20 a hundred. The Central line carries for \$1 40, out of which they pay within a fraction, 30 cents for tolls; so that while the Southern line realizes \$1 20, the Central line in fact only gets \$1 10. It is very evident that under this arrangement, neither the canal nor the Central line will get the transportation of those goods which can be sent by the other line; and even now goods are taken from New York to Buffalo by way of Dunkirk. Hence it follows that if the system of tolls is continued on the Central line, by far the largest part of the sum will be paid on property produced or consumed on the line between Albany and Buffalo; and this section of the state will be virtually subjected to a local tax for the benefit of the canal revenue.

Under this view of the practical operation of the system of railroad tolls, the committee introduced and recommended the passage of an act to abolish tolls on railroad transportation, on all the railroads in the state, to take effect on and after the 1st of December next.

We trust that this will become a law, and we think every enlightened mind will become satisfied, upon a careful examination of the subject, that this is the true policy of the state, and will conduce to the best interest and greatest good of the greatest number of her citizens.

Indiana.

Indianapolis and Bellefontaine Railroad.—At the recent annual meeting of the stockholders in this company, the following gentlemen were chosen directors for the ensuing year: Jeremiah Smith, D. Heaton, and Peter S. Mills, of Randolph; James Truitt, Samuel P. Anthony and David Kilgore, of Delaware; Allen Makepeace, Wm. Sparks and Madison G. Walker, of Madison; Samuel V. B. Noel, of Hancock and Hamilton; Wm. A. Rifner, of Henry and Wayne; Richard H. Winslow, of New York; Theophilus Paulding, of Philadelphia; and Alfred Harrison and Oliver H. Smith, of Marion.

The board organized by the unanimous selection of Oliver H. Smith, Esq., for President, and Thos. A. Morris, Chief Engineer.

The President submitted a brief report of the operations of the company the past year, from which we learn that there is now in successful and profitable operation 36 miles of road, extending from the capital of the State to Anderson, constructed in a permanent manner with gravel ballast, oak superstructure and a T rail of over 60 lbs. to the yard, and costing less than \$10,000 to the mile—(the average cost of American railroads being three times that amount.)

The grading and bridging are completed from Anderson to Muncie; 18 miles, and everything is in readiness to lay the iron as soon as it arrives; so that in all probability the road will be completed to Muncie early the coming fall. The third section of about 30 miles, from Muncie to Union, is all in the hands of contractors, ensuring its completion early in the ensuing spring. It may therefore be expected that by the close of next year cars will be running upon the whole line.

We think that this company will not have to pay for *that dinner*, which is to be eaten at somebody's expense, when the whole route from Lake Erie to Indianapolis shall be completed.

Before the first day of January, 1853, there will be a continuous line of railroad from New York, Boston and Philadelphia, to Terre Haute, Indiana. The divisions in Ohio and Indiana, that compose a part of this great chain, have been pushed forward with extraordinary energy, and those engaged in their construction deserve the gratitude of the whole country.

The Hempfield Railroad.

We have received the report of the reconnaissance of the route of this road, by Charles Ellet, Jr., Chief Engineer, from which we learn that no obstacle exists to the employment of a very direct route, of less than eighty miles in length, and with moderate grades. Diverging from the Central railroad at Greensburg, the road would probably cross the Youghiogheny river at or near Robbstown, and continue to Washington, either via Williamsport or Belvernon. From Washington to Wheeling it may follow the tributaries of the Chartier and Buffalo creeks to West Alexandria, and thence descend along the valley of Wheeling creek to the Ohio river at Wheeling, or by the valley of Buffalo creek to the same point by the way of Wellsburg.

There are other routes which will need inspection, and possibly instrumental examination, before the location of the road is finally adopted.

The great merit of the work consists in its favorable position, being on the direct route from Philadelphia to the great cities of Cincinnati and St. Louis. Passengers on the Ohio river might be taken at Wheeling and delivered, says Mr. Ellet, in less than three hours at Greensburg, whence they would be borne as far as Harrisburgh on the Central railroad, before they could reach Pittsburgh by the river, even when the Ohio is in its best navigable condition. The importance of the route, he says, will be seen at once, as commanding a large share of the travel of the Ohio, destined to the cities of Philadelphia, New York and Boston. The Central railroad of Ohio, passing through Columbus and Zanesville, and now in great part under contract, will find a route more than 50 miles shorter to Philadelphia, by the Hempfield and Central roads, than by the way of Pittsburgh, or any more northern rival.

The road just about to be commenced from Cincinnati, through Wilmington and Circleville, to Zanesville, will deliver passengers in Philadelphia by the way of Wheeling, Greensburg and the Central railroad of Pennsylvania, by a line 60 or possibly 70 miles shorter than the Pittsburgh route, while a new source of trade, and a new element of prosperity, has recently been opened to the company, in the proposed diversion of the Cincinnati and Parkersburg road to the town of Marietta, with a view to a connection with Philadelphia through the Hempfield line. It is now certain that a subscription of \$350,000 to the stock of this, one

of the greatest works of Ohio, passing through a region where it will meet with little or no competition, has been made on the express condition that the Ohio river shall be approached at Marietta. If the subscription be accepted on those terms, this trade, which has been for many years regarded as the peculiar tribute of Baltimore, will be directed to Philadelphia by means of the Hempfield line.

The report also expresses the opinion that this line will secure the trade and travel of the entire route soon to be opened from Nashville, Tenn., through the central part of Kentucky, and thence over the Lexington and Maysville and Scioto and Hocking Valley railroads, to the great Ohio Central road. This will be an important route, being very direct, and one which from its natural position will be free from the competition attending more northern roads; and much of this trade would naturally flow through the Hempfield line to the Philadelphia and New York markets.

Mr. Ellet recommends the early opening of that portion of the line from Wheeling to Washington, 32 miles, which would be immediately productive of a good income; and it is to be presumed that such an important link of connection will be prosecuted with vigor to a speedy and successful termination.

Texas.

Mexican Gulf Railroad.—We learn from a late number of the Western Texan, that the citizens of Bexar county are pushing forward the project of a railroad from the city of San Antonio to the Gulf, with great energy and perseverance. The city and county have subscribed each \$50,000, making \$100,000; and the individual subscription amounts to nearly as much more. Should the enterprise thus begun be carried through to a successful termination, that portion of the State from the Colorado to the Neuces, will rapidly increase in population and prosperity. The climate in western Texas is described as salubrious, and the soil rich and productive.

Virginia.

Blue Ridge Tunnel.—We were very much gratified on visiting the tunnel this week, at seeing the rapid progress that has been made in that work.—If the hands be kept steadily employed, we think it may be safely said, that it will be completed in a week.

The heavy work along the Blackwater, between the tunnel and the town, is also being performed, we think, with as much rapidity as could be expected. The work of laying the rail has been commenced, we are informed, a few miles from town, and considerable advance made. As soon as the metal can be transported upon the track, instead of by wagons, as at present, the work will of course proceed more rapidly.—*Lynchburg Virginian.*

Railroad from Pittsburgh to the Erie Road.

The people of western Pennsylvania are moving to secure the construction of a railroad from Pittsburgh to the Erie railroad. A numerous attended convention was held at Warren, Penn., a short time since for this purpose. Committees were appointed to collect and disseminate information in reference to the proposed work, to open books of subscription, and to raise funds necessary to make surveys, etc. The whole distance, in case the valley of the river should be followed, is 215 miles. The route traversed is known to be one of the richest mineral and agricultural regions in the United States. Among other things, the convention

Resolved, That the New York and Erie railroad being completed, now is the appropriate time to move forward in the important work of connecting

the city of Pittsburgh with the city of New York, by a connecting link along the valley of the Allegheny river, a distance of about 215 miles, if the valley is adopted all the way.

Resolved, That the iron ore and stone coal which abounds in the counties of Allegheny, Armstrong, Clarion, Butler, Venango, Warren, Elk, McKean and the adjoining counties of Pennsylvania, and the pine and other valuable forests of lumber land in the counties of Cattaraugus and Chataque, N. Y., and McKean, Warren, Elk, Clarion, Forest, Venango, etc., in Pennsylvania, combined with the rich agricultural lands which lie broadly expanded along the whole line of the proposed road, and the great advantage of water power for manufacturing purposes, furnish the basis for an amount of business to be thrown upon it which would fully justify the construction of the road, and render the stock a good investment.

Resolved, That this convention will use their best exertions from this time forth, to promote and facilitate the commencement and progress to completion of this great work, and call upon all the good friends in western New York and Pennsylvania to do likewise.

Boston and Montreal Railroad.

We understand the contract to complete the Montreal railroad from Warren to Wells River, its final terminus, has been taken by Warren H. Smith, Esq., of Sanborn. It is to be ready for the rails in October 1852. The White Mountains road is under contract as far as Littleton and to be completed at the same time. The two roads connect at Wells River. The Atlantic and St. Lawrence road will probably be completed through New Hampshire, about the same time, so that the short piece of road, about twenty miles, from Littleton to Lancaster, will only be wanted to make the connection with that road. The Atlantic and St. Lawrence, it is said, will be completed through in two years from next fall—if so, it is probable the connection will be from Boston to Montreal direct, over the Montreal railroad, by that time.

Railroad around the South Shore of Lake Michigan.

In our last we gave the result of the recent conference between the two Michigan railroad companies, upon the subject of a common road around the south shore of Lake Michigan. The conference ended in nothing. We have now a copy of the correspondence between the companies in reference to this matter, which in substance is as follows:

The Michigan Southern and Northern Indiana railroad companies, through a committee of which Geo. Bliss, Esq., was chairman, proposed to the Michigan Central, the following basis for a permanent contract for the transaction of business between Michigan city and Chicago:—that the former will proceed at once to finish the road from Michigan city to Chicago, and open the same for use probably by the 1st of March next; and that they will cause to be transported each way over said road the passengers and merchandize of the said Central company, delivered to them at Michigan city and Chicago, with as much despatch as they transact their own similar business over the same part of the road, and at the same rate per mile mutually agreed upon by the parties from time to time, for similar through passengers and merchandize between Chicago and Lake Erie upon both roads; the business of the Central company to be done in their own cars if they prefer, they being allowed a reasonable compensation for the use of them, &c.

To this note, John M. Forbes, Esq., chairman of the committee in behalf of the Central company, replied that the arrangements of that company are such, that he does not believe they will give up their present intention of building a road from Michigan city to Chicago the present season.—

They also submit a proposition to do business on that road for the Michigan Southern company.

To this proposition Mr. Bliss replies, that the Indiana company (a part of the Michigan Southern) possesses an acknowledged chartered authority to construct a railroad through northern Indiana, and around the head of Lake Michigan, and that no other company possesses authority under which they can legally construct such a road. He also objects to the route of the road proposed to be built by the Central company, as being circuitous, &c.

To this the Central company replies, that the road proposed to be built by them will be a direct one, and that no legal obstacle exists to its construction; and winds up the correspondence by saying that the Southern company have a curious "mode of consulting the public welfare by insisting upon a monopoly in Indiana."

The next step we suppose will be this, the Central company will commence the construction of a road around the south end of the Lake, under the charter of the *New Albany and Salem Road*, which allows that company to extend their line to any part of the State. The Southern company will then apply for an injunction, for the purpose of testing the legal rights of the belligerents.

We stand in a similar relation to both of the above companies; and we do not know that we have any reason to doubt that if the Central road enjoyed the rights claimed by the Southern, they would be as illiberal and monopolizing as the latter is charged with being. Railroad companies generally take all the power they can get, and wield it as far as they can to their own advantage. This is looked upon as a right which all possess to make the most they can out of their own privileges. But there is a limit to the individual right, and this is those of the public; and it is in insisting upon a privilege hostile to public good, that the Southern railroad have taken an unwise and untenable position, in claiming the monopoly of route around the Lake. The affair now is not between the two railroads, but between the Southern railroad and the public. If they have the exclusive right to build a road on the Lake shore, they have a right to exact their own terms. Those who wish to use the road are entirely at their mercy. Now this doctrine will not go down in this country. The Southern railroad company may charge what they chose for the carriage of freight and passengers—but we apprehend that the people of Indiana are not going to allow them this privilege, and at the same time refuse a similar one to all others. Not they. The more roads the better. Competition brings down charges. After the position of the Southern railroad is fairly understood, it will be no longer difficult to obtain a plenty of charters to build as many roads over the disputed territory as the most zealous anti-monopolist would wish to see.

The exhibition which the above companies have presented to the public, shows the importance of general railroad laws in all the States. Indiana should follow the example of New York. In this State we are not compelled to apply to the Legislature to obtain authority to build railroads; consequently, there is no room left for favoritism or monopoly. Every man is thus made a judge of the safety of his own investments. We allow no monopoly in the right of way.

The above companies should settle their differences at once. If they cannot agree, let them refer their disputes to three disinterested men. Any other course implies, on the part of the party refusing, the want of a disposition to do the fair thing.

Mineral Wealth of Missouri.

There is probably no State in the Union where are found so great a variety, and such inexhaustible quantities of mineral wealth, as the State of Missouri. She is celebrated for her iron mountains; she has rich and extensive mines of lead, copper, cobalt, nickel, and other rare and valuable metals; but to cap the climax, she has coal mines of such marvellous extent and richness as almost to defy belief. It is stated that there is in Callaway county, near the centre of the State, a stratum of the purest cannel coal, *seventy-five feet thick*, and covering an area of several miles in extent. The value of this mine is much enhanced by its location. It is within less than two miles of extensive mines of iron ore, and in the midst of a rich agricultural region, immediately on the Missouri river, and just opposite the mouth of the Osage, one of the largest tributaries of the Missouri,—where provisions of every kind are cheap and abundant, and where the greatest facilities exist for obtaining a market for their mineral treasures.

The editor of the *Fulton Telegraph*, who has visited the works of the Callaway mining and manufacturing company, gives the following account of these coal beds:

"A region of country several miles square, embracing all the lands of this company, must be entirely underlaid with immense fields of the richest cannel coal. We visited the 'Mammoth Bank' and found that here the coal crops out in a bluff bank of some two hundred feet in length and at different points of a thickness from three to ten feet. A shaft had been sunk here and the vein found to have a depth of twenty-four and a half feet. A quarter of a mile southeast, and three quarters of a mile, and one and a half miles west of the 'Mammoth Bank,' coal crops and appears in large quantities. These latter we did not see.—But three and a half miles west is the 'Mastodon Bank,' and a great one it is. It has been shafted to the depth of 85 feet; 11 by 11, seventy-five and a half of which is the pure cannel coal—a thickness of vein without an equal in the world. Drifts were run 33 feet south, 11 feet east, and 11 feet north, in order to ascertain the dip and extent of the mines. Near the mouth of the shaft lay some 15,000 bushels of coal—much of it in large blocks.

"This coal crops out at other points we did not visit. The 'Mammoth' and 'Mastodon' satisfied us that these coal fields are without a parallel, and may be mined for ages and not be exhausted. It is of remarkable purity—without any intermixture of lead, zinc or sulphur. Sulphur when found forms the base of the beds of coal, but it is not intermixed. From the evidences we saw, we should think that iron ore in great quantities lies near these cannel coal banks.

"About one and a half miles west of the Mastodon, on lands of the company, iron is found in immense quantities—lies on the surface in great blocks. This bank has been opened in several places and found to be of great extent and of very rich quality. This vein has been traced a half mile and is over a hundred feet in width on the surface of the ground. Iron ore appears at many other points in the vicinity, which we did not see. There cannot be a doubt but that the iron resources of the company are quite as extensive as the cannel coal."

Railway Iron for the Jeffersonville and Columbus Railroad.

Two hundred and fifty-three tons of railroad iron (Trails of 56 lbs. to the yard) were delivered at the Jeffersonville wharf, a few days since, for this railway. Two hundred and seventy-one tons of the same shipment are at Cincinnati, to be delivered at Jeffersonville this week. This shipment of five hundred and twenty-four tons was made from Liverpool by way of New York, the Erie Canal and Lake, and the Miami Canal to Cincinnati.

The iron was delivered in New York, duty paid, at \$41 per ton. The freight and charges from New York to Jeffersonville landing, amounted to \$8 75

per ton, bringing the cost of the iron delivered, at \$49 75 per tons. The cost of the same shipment at New Orleans would have been \$43 50 duty paid, with the freight and charges from New Orleans \$7, amounting to \$49 50 landed at Jeffersonville.

This is ominous of a serious competition in the transportation by the Lake route to the Falls, from Europe, during the summer season, with the Ohio and Mississippi rivers. The greater regularity and certainty in the receipt of freight by the northern route, will, in most instances, counterbalance the difference in price.

Freights must fall on the river route to meet these advantages with any success.—*Louisville Courier.*

Cost	When	Div. 1846.	Div. 1847.	Div. 1848.	Div. 1849.	Div. 1850.	Av. an. div.
	opened	8 per cent	7½ per cent	6½ per cent	6 per cent	5½ per cent	6-7 per cent.
Boston and Providence, 1835	8	8	8	8	8	8	8
Boston and Worcester, 1835	8	8	8	8	8	8	8
Boston and Lowell, 1835	8	8	8	8	8	8	8
Taunton Branch, 1835	8	8	8	8	8	8	8
Nashua and Lowell, 1835	0	0	0	0	0	0	0
Norwich & Worcester, 1839	0	0	0	0	0	0	0
N. Bedford & Taunton, 1840	7½	7½	7½	7½	7½	7½	7½
Western, 1841	8	8	8	8	8	8	8
Eastern, 1841	8	8	8	8	8	8	8
Boston and Maine, 1843	7	7	7	7	7	7	7
Pitchburg, 1843	10	10	10	10	10	10	10
Old Colony, 1845	6	6	6	6	6	6	6
Cost	\$24,515,800	\$27,225,900	\$30,861,000	\$34,506,700	\$36,480,300		

Pennsylvania.

Railroad Meeting.—A meeting was held on Thursday, the 3rd instant, in Philadelphia, numerously attended by the leading merchants and business men of that city, to take into consideration the subject of establishing a direct railroad communication between Philadelphia and Southern Ohio, Kentucky and Tennessee, through the means of the Hempfield, the Cincinnati and Belpre, and other railroads now contemplated or in progress. John Farnum, Esq., was called to the chair, and H. N. Burroughs, Esq., appointed Secretary. The meeting was addressed by Noah L. Wilson, Esq., of Marietta, Ohio, who made a very striking exposition of the condition and prospects of railroad enterprise in Southern Ohio, and the importance to Philadelphia of encouraging and identifying herself with it; and some highly interesting remarks were also made by the Hon. Mr. Cutler, President of the Cincinnati and Belpre railroad, who responded to a call made for information in relation to his company, its operations, and progress.

A committee to draft resolutions expressive of the sense of the meeting, was appointed, consisting of

John B. Myers, S. V. Merrick, and Thomas T. Lea, Esquires, who, after withdrawing for a while, returned with the following resolutions, which were unanimously adopted by the meeting:—

Resolved, That the project of continuing the Cincinnati and Belpre railroad from Athens, Ohio, through Marietta to the city of Wheeling, with a view to connecting, through the Hempfield and Pennsylvania railroad, the city of Philadelphia with Southern Ohio, Kentucky and Tennessee, is regarded by this meeting as a measure of great importance to the interests of the city of Philadelphia, and is entitled to the consideration and aid of its business men.

Resolved, That in the opinion of this meeting, the Cincinnati and Belpre railroad company may look with as much confidence to the city of Philadelphia for the necessary pecuniary aid required to extend their road from Marietta to Wheeling, with a view to connecting with the Pennsylvania roads, as to any city upon the sea board, to supply the capital required to construct a railroad to connect the town of Parkersburgh with the Baltimore and Ohio railroad, as provided by the charter of the Northwestern Virginia railroad company.

Resolved, That John B. Myers, John Haseltine, Thos. P. Hoopes, S. V. Merrick, Thos. T. Lea, and D. S. Brown, be a committee to bring to the notice of the Board of Trade of this city the importance of securing direct railroad connections with Southern Ohio, and the states of Kentucky and Tennessee, by means of the Pennsylvania railroad to Greensborough, the Hempfield railroad to Wheeling, the Belpre and Cincinnati railroad through Marietta, Athens and Chillicothe to Portsmouth and Maysville, and the several railroads from Maysville through Lexington and Louisville to Nashville in Tennessee.

Ohio.

Pittsburgh and Cleveland Railroad.—The work on this road is making good progress, and the track layers have reached Lima, 15 miles southeast of Ravenna. It is expected that the laying of the track will be completed as far as Hanover, 70 miles from Cleveland, in August, and the remaining 27 miles to Wellsville, in October—thus forming a connection between Lake Erie to the Ohio river at Wellsville, through the eastern range of counties. About 60 miles south-east of Cleveland the Ohio and Pennsylvania railroad crosses this road, continuing on westward through the central part of the state.

Georgia.

Western and Atlantic Railroad.—The finance committee of the Georgia legislature, who were appointed to examine into the condition of the Western and Atlantic railroad, submitted their report to the Governor of the state, on the 14th ult. From that document we learn that of the 138 miles of the state road, 50 miles are laid with a plate or flat bar rail, which is much worn, having been in use since 1845; and the committee recommend its removal as early as practicable. The remainder of the road is laid with U and flange rail. The Chief Engineer, Mr. Mitchell, under an Executive order, has purchased 1000 tons of T rail, sufficient to relaid twelve miles; and a negotiation has been opened with a view to provide T rail as a substitute for the flat bar, on the remaining thirty-eight miles. In the absence of any authority, the committee have advised the engineer to take the responsibility of making such purchase, believing that the people and their representatives would sustain him in so doing.

The superstructure of the road to the tunnel is in process of an early and thorough renewal. The bridges, excepting the old bridge over the Chattahoochee, are reported to be in good condition.

The committee complain of the miserable equip-

ment of the road, and say that it has never received from the state a "decent suit of clothing," but has been left to borrow from other companies at ruinous rates. The road has now thirteen locomotives, seven of which are in good condition, four passenger cars, two baggage cars, four box cars, and six platform cars. The committee report that the road needs at this time additionally, 10 passenger cars, 200 box cars, 100 platform cars, 4 baggage cars, and 15 locomotives.

In order to obviate the difficulty frequently arising with companies whose roads connect with the state road, of fixing with entire certainty which should be responsible for loss of produce, or damage to freights, the committee recommend that the Legislature, after having fully equipped the state road, prohibit the running of any cars whatever on that road except those owned by the state.

The committee think that less than \$500,000 would be inadequate to place the road in a proper condition to meet its rapidly increasing business. They consider "the wiser and better policy" the expenditure of \$1,000,000, so as to re-lay the entire road with a heavy rail, 85 to 30 tons to the mile, and the substitution of heavier locomotives.

The report speaks in the strongest terms of disapprobation of the project which has been urged, of selling the state road, and predicts that in less than five years, under a liberal and proper policy, the state will be in the receipt of a nett income from the road of not less than half a million of dollars annually.

This business of the road for the seven months previous to the 1st of May, 1851, amounts to \$170,713 45, showing an increase in the earnings of the road of more than thirty-nine per cent. over the same period last year.

The Inland Route to the North.

The people of Georgia who desire to travel North for business or pleasure, have never had the means of quick transit with such comfort as at the present time. To those who prefer the land route, we would direct their attention to the great improvements that have been made on almost every part of the line. The new steamers *Gordon* and *Calkoun*, from Savannah to Charleston, were built expressly for the route, and combine all the possible advantages of safety and speed. These boats leave Savannah at 5 A. M., and put the passengers on board the Wilmington boats the same afternoon, so that no time is lost in Charleston. On the Wilmington boats, baggage will be ticketed to the place of destination. This is a great convenience to all travellers, "as it will obviate the trouble and difficulties of the different postages on the route which have heretofore been so much complained of."

"The railroad cars at Wilmington will wait, if necessary, until 1 o'clock, P. M. for the boats from Charleston, so as to take passengers on without detention or delay."

"The Wilmington and Weldon road is now all laid with a heavy T rail, except nine miles adjoining Weldon, and eight near Wilmington, where there is a heavy flange rail, and the road in good order. The Wilmington road is now one of the best in the United States, and the engines and cars are of superior character. To add to the facilities of this route, the Weldon and Portsmouth railroad is nearly complete, having been relaid with heavy iron to within 14 miles of Weldon, and the entire road will be ready for travel by the month of August. Superior boats are being built, and will be in readiness to run from Portsmouth to Baltimore. This route will then offer great inducements in the way of comfort and despatch; for a passenger leaving Charleston at 4 P. M. will reach Portsmouth the next evening at 9 o'clock, take the steamboat, and have a comfortable night's sleep, will reach Baltimore next morning, 12 hours in advance of the mail by Richmond and Washington."

"The President of the Washington road, Gen.

McRae, deserves the highest credit for the energy and ability which he has manifested, under many trying circumstances, in the management of the road, and we trust that its improved condition, while it adds so greatly to the comfort of the travelling public, will result in largely increased profits to the stockholders."—*Savannah Republican*.

Connecticut.

Swift River Railroad.—A meeting of the stockholders and other friends of the Swift River railroad, was held in Enfield on the 3rd inst. Addresses were delivered by individuals from the several towns interested in this enterprise, and a vote was passed in favor of an immediate organization under the charter. In pursuance of said vote, the stockholders made choice of the following board of directors:—Hon. Thomas W. Williams of New London; Hon. John Warner of Greenwich; Epaphras Clark and Alvin Smith of Enfield; Emilius Bond of Palmer; John Hill of Athol; Warren Hale of Dana; Thomas Sherman of Ware; Robt. Carpenter of Orange; William Smith of New Salem; Lucius Sibley of Petersham; and Benson Aldrich of Belchertown.

Illinois.

Peoria and Oquawka Railroad.—The subscribers to the stock of this road met at Knoxville, Knox county, Illinois, on the 20th ult., and elected the following board of directors:—Messrs. Charles Mason and James W. Grimes, of Burlington, Abner C. Harding and Samuel Webster, of Monmouth; James Knox and Julius Manning, of Knoxville; Asa D. Reed, of Farmington, and Rodolphus Rouse and Washington Cockle, of Peoria.

The board organized by the election of James Knox, Esq., President, Robert L. Hannaman Secretary, and William Phelps, Treasurer.

About \$400,000 has already been subscribed to the stock of this road, and resolutions were adopted to the effect that the directors be desired and instructed to take immediate measures for the survey, construction, and completion of the road between Peoria and Farmington at the earliest possible period, and in the most permanent and substantial manner; and also declaring that the faith of this company is pledged to the completion of this road from Peoria to Monmouth, and thence to a point on the Mississippi river, opposite to Burlington, in the state of Iowa, leaving that part of the main trunk of said road between Monmouth and Oquawka, to be completed after such branch to Burlington shall be built; and upon the faith of this pledge this company has received and will continue to receive public and private subscriptions from the corporation and citizens of Burlington.

The following is a statement of subscriptions to stock:—

PRIVATE SUBSCRIPTIONS.

" Burlington	\$80,000	
" Warren	20,000	
" Knox	41,000	
" Farmington (exclusive of Knox county subscriptions)	22,000	
" Peoria	32,000	\$195,000

CORPORATE SUBSCRIPTIONS.

Burlington city subscription	\$75,000	
Warren county	50,000	
Peoria city	75,000	200,000

Total

The road will, we should think, be not far from 100 miles long, including the Burlington branch, and can be built probably at the minimum cost of Western roads. Its concerns are in good hands, and will be well managed. The president of the

company, Mr. Knox, is very favorably known in this state, and the reputation which he enjoys here will be of great service to the company when they come into market for money.

Northern Cross Railroad.—The requisite preliminary arrangements to the speedy commencement and energetic prosecution of this work, are nearly projected. The Chief Engineer, S. D. Eaton, Esq., with a corps of engineers, is now in the field, making the necessary surveys preparatory to letting.

Pennsylvania.

Pittsburgh and Steubenville Railroad Company.

—The commissioners and corporators of this company, which was incorporated by the Legislature of Pennsylvania, in March, 1849, met at the house of Mr. James Smith, on the Pittsburgh and Steubenville road, in Washington county, Pennsylvania, on the 27th ult., for the purpose of taking further and efficient measures for organizing the company. The meeting having been addressed by several distinguished speakers, resolutions were adopted that books for subscriptions be re-opened, and a committee of six were appointed to prepare an expose of the importance of the immediate commencement of the road, and to take such measures as may in their opinion be proper to effect the necessary subscriptions, and to procure the legal organization of the corporation. Hon. Charles Naylor was also unanimously chosen agent of the subscribers, to use his influence and exertions in advancing the interests of the road; and from the decided spirit exhibited at this meeting, there is every probability of the speedy accomplishment of the work.

Railroad Items.

Scioto and Hocking Valley Railroad.—There are 700 laborers working on the Scioto and Hocking Valley railroad, and much of the line is ready for the superstructure.

Orange and Alexandria Railroad.—The Alexandria Gazette, says:—The bonds authorised by the stockholders of this company, at the last annual meeting, to the amount of \$360,000, have been negotiated with an eminent banking firm in Washington. With ample means at command for the purpose, the eastern and middle sections of this great work will now be pushed on to completion, with energy and rapidity.

South-western Railroad.—The iron upon the south-western road has been laid to within a mile or two of Ogleshorpe, and the cars will pass over the entire road in a few days.

Danville and Lexington Railroad.—Boyle county Kentucky, has voted \$150,000 to the Danville and Lexington railroad.

Steam on Canals.

The application of steam power to the towing of boats on our canals, has been for many years a desideratum among scientific men. The great difficulty of propelling boats heavily loaded, through the narrow channels of a canal, without producing such a commotion in the water as to seriously injure the banks or endanger the safety of the works, has, it is stated, been overcome, and an experiment recently made has been crowned with complete success. A small steamboat recently arrived in this city with three heavily laden barges, which she had towed from Norfolk, Va., up the Potomac river, to the Cumberland mines, and thence through the Alexandria canal, the Chesapeake and Delaware canal, up the Delaware river, and through the Delaware and Raritan canal, to New York, a distance of nearly five hundred miles. She is a small boat of about one hundred tons burden, and has two engines rated at fifteen horse power each;

and the only things that differ from ordinary steamboats are the peculiar shape of her buckets and the addition of a float back of the wheel, which is in the centre of the boat. The wheels are bent so as to form the segment of a circle, and they enter and leave the water without creating the great motion caused by the ordinary paddles. Should however, the power required cause any swell, the raging waters are smoothed down and pacified by the float that follows the wheel. This float can be raised or lowered as circumstances may require. It is stated that a boat of similar construction is soon to be put on the Erie canal.

Indiana.

The *Indiana State Journal* states that the iron is laid on the Indianapolis and Terre Haute railroad to Eagle Creek, over three miles west of that city, and is now being put down at the rate of a third of a mile per day.

Madison and Indianapolis Railroad.—The following gentlemen were elected directors of this road at a meeting of the stockholders, held at Madison on the 25th ult.:—John Brough, Jos. G. Marshall, W. M. Dunn, Jesse D. Bright, Jesse Whitehead, Zach. Tannehill, Jas. Whitcomb, Jas. M. Ray, Harvy Bates, Thomas A. Morris, Sam. Moore, R. H. Winslow, and Jas. Winslow.

Lawrenceburg and Upper Mississippi Railroad.—A mass meeting of the friends, stockholders, and all others interested in the rapid and early completion of this road, was to have been held at Greensburg on the 4th inst., on which occasion reports of the progress, prospects, and wants of the company were to be presented, and a strenuous effort made for the furtherance of the work.

New York.

Syracuse and Binghamton Railroad.—The following gentlemen have been elected directors of the Syracuse and Binghamton railroad:—Horace White, J. R. Lawrence, Thomas B. Fitch, Alfred H. Hovey, Henry A. Dillaye, H. Baldwin, of Syracuse; Henry Stephens, Alanson Carley, Jedediah Barber, Israel Boles, of Cortland; Daniel S. Dickinson, Hazard Lewis, of Broome, and Leander Babcock, of Oswego.

It is said that the friends of this line intend to push it ahead with all possible dispatch. We hope they will. They have been talking about doing so long enough.

Eastern Terminus of the Belpre Railroad.

We find the following curious paragraph in the *American Railroad Journal*, of the 21st inst., viz.:

"The recent resolution of the Cincinnati and Belpre company, to make Marietta a point, and abandon their connexion with Baltimore, is likely to turn the trade of Southern Ohio into the lap of Philadelphia, through the Hempfield line, which promises at present to be the trunk line for several important branches in Ohio."

In reference to the above statements we should like to inquire:—

1. When did the Belpre and Cincinnati company resolve to make Marietta a point?

2. When did they "abandon their connexion with Baltimore"?—a connexion, by the way, which has never been formed.

3. Who is the Railroad Journal's informant?

No such resolution as that paper refers to ever passed the Belpre board.—*Scioto Gazette*.

The Cincinnati and Belpre company may not have passed any special resolution to make Marietta a point in their road, but it is notorious that they intend to run to that town. A large amount of their subscriptions are based upon this condition, and these subscriptions are included in their statement of the means of the company. (See Mr.

Cutler's speech at the late celebration at Chillicothe.) In addition to this the President of the company, Mr. Cutler, recently visited Philadelphia for the purpose of calling the attention of the people of that city to the importance of a railroad from Wheeling to Marietta, and received assurances, we have good reason to believe, that the people of Philadelphia would provide means for this line, all of which is pretty good proof that the Cincinnati and Belpre company are resolved to go to Marietta, to say nothing of still stronger inducements.

The efforts made to interest the people of Philadelphia in the line from Wheeling to Marietta, proves that the Cincinnati and Belpre company are desirous of opening a business communication with Philadelphia. No prominence has been given to this idea till very recently, which shows that there has been a change of opinion in this respect. We were a little too fast, perhaps, in saying that the Cincinnati and Belpre company intended to abandon Baltimore. The idea we should have conveyed was, that they were looking to a choice of markets, and regarded a connexion with Philadelphia as more important than with Baltimore. Such we believe is the fact. The company is desirous of having an outlet to Baltimore, we have no doubt, as two markets are better than one. But that Philadelphia is at the present time preferred of the two, we have no doubt. The Parkersburg railroad cannot be completed for years, and the Cincinnati and Belpre company will be compelled to push their road north to secure to it full usefulness and efficiency. It will not only be pushed to Wheeling but to Wellsville, to meet the Cleveland and Pittsburgh railroad, which will carry the line to Lake Erie. The first point made by the Gazette is a bit of special pleading, with the merits entirely on our side. On the second we believe we are more than half right. The above company prefer Philadelphia, but would like an outlet to Baltimore, which they cannot have for a long time, without going to Wheeling. This makes Marietta a convenient point in the route. Upon the last point we will not join issue.

Quebec and Halifax Railroad.

We copy the following from the speech of the Hon. Mr. Howe, made by him on the occasion of a public dinner given him when in Toronto:

"Mr. Chairman, allow me to say, that while you in the back country of Canada are clearing your farms, and building your towns, and rearing your cities and villages, Nova Scotia is constructing the wharves from which your produce may be transferred to ships."

This was at Toronto: a city 1200 miles distant from Halifax, by the railroad proposed by Mr. Howe. How much will it cost to transport by railroad from the former to the latter city? about \$25 per ton. How much from Toronto to New York? not over three; and after the enlargement of the New York canal, not much over two dollars. Will the people of Toronto send their wheat to Halifax for shipment? There is no more relation between Halifax and Toronto which should make the former the port of the latter, than between Halifax and Kamtschatka. The recklessness of Mr. Howe's statements, and the utter ignorance which he displays upon all practical subjects, will soon destroy all confidence in his opinions. Something besides fancy is required to build railroads; and a person who has nothing else, is not fit to talk about, much less to be entrusted with, their management. Mr. Howe has either lost his temper or his reason; and

will certainly be the death of his project, if he does not leave off making speeches.

Abstractly we should like very much to see the Halifax and Quebec railroad constructed. It is a great project, and would prove a benefit to the country traversed. Here lies the argument in its favor. It cannot be defended on the ground that it will become the route of commerce, or make Halifax the shipping port for the Canadas. We have never seen this attempted to be proved. We do not understand nor sympathise with the political considerations urged, but look at the road simply as a commercial enterprise. As such, we have discussed its merits. If constructed, we wish to see it done *secundum artem*. We are quite willing to see our neighbors undertake it if they wish to, but we want them to understand what they are about before they commence.

AMERICAN RAILROAD JOURNAL.

Saturday, July 12, 1851.

European and North American Railway.

THE undersigned, the three persons first named in the first section of an act passed by the Legislature of Maine, and approved the twentieth day of August last past, entitled "An Act to incorporate the European and North American Railway Company," and being specially authorised therefor in and by said act, hereby give public notice that, for the purpose of receiving subscriptions to the stock of said company, as established by the act aforesaid, according to the provisions thereof, not exceeding forty thousand shares, books of subscription will be opened under the direction of the undersigned, according to the regulations prescribed, at the time and places following, viz:—On WEDNESDAY, the Twentieth day of August next, At Calais, Maine, with Noah Smith, Jr., Esq. Eastport, do. " Col. Bion Bradbury. Machias, do. " Walker & O'Brien, Ellsworth, do. " Seth Tisdale, Esq. Oldtown, do. " Geo. P. Sewall, Esq. Bangor, do. " Geo. W. Pickering, Esq. Orono, do. " Hon. Israel Washburn, Jr. Waterville, do. " Hon. Timothy Boutelle. Brunswick, do. " Prof. William Smyth. Augusta, do. " B. A. G. Fuller, Esq. Belfast, do. " John Y. McClintock, Esq. Portland, do. " John B. Brown, Esq. Portsmouth, N.H. " Hon. I. Goodwin. Salem, Mass. " Stephen A. Chase, Esq. Boston, do. " Francis Skinner & Co. Lowell, do. " John Wright, Esq. Worcester, do. " Charles Washburn, Esq. Providence, R.I. " Billings Brastow, Esq. Hartford, Conn. " Hon. C. F. Pond. New Haven, do. " Allen Prescott, Esq. New York, N.Y. " R. & G. L. Schuyler, No. 2 Hanover street.

Albany, do. " John V. L. Pruyn, Esq. Troy, do. " Hon. John D. Willard. Philadelphia, Pa. " Hon. Wm. C. Patterson. Montreal, Canada, " Hon. John Young. Quebec, do. " J. B. Forsyth, Esq. Said books will remain open for ten successive days at the places and with the persons aforesaid. Dated at Portland, this sixteenth day of June, A. D. 1851.

ELIJAH L. HAMLIN,
ANSON G. CHANDLER,
JOHN A. POOR.

To Railroad Companies.

THE undersigned has discovered and patented an imperishable, cheap, and sufficiently elastic substance, to be introduced between the sill and rail, so that the stone sill can be used in place of the wooden sill: entirely overcoming that rigidity where the rail is laid directly on stone. Address J. B. GRAY, care of A. G. HOLMES, 108 Arch st., Philadelphia.

July 10, 1851.

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Stock and Money Market.

The money market continues pretty much in the same condition as at our last report. Money is still sufficiently abundant in the ordinary business channels; but for railroad securities the market is somewhat stringent. Money must continue in demand so long as the shipment of specie continues to the extent to which it has gone forward for some time past. The bonds of the Wilmington and Manchester road, which were taken by bona fide bidders, sold remarkably well, somewhat above the market rates, showing the high opinion entertained of this work. This road occupies a very prominent position in the public eye, which materially adds to the market value of its securities.—For bonds of new works, from 85 to 90 is about a fair quotation; but the sales are so often connected with the purchases of iron, and machinery, that it is impossible to give quotations applicable to even a majority of cases. Our railroad companies are still able to supply themselves with what they need, and the work on all our lines in progress, is going forward with extraordinary energy and rapidity.

The earnings on most, if not all our roads, continue to show a great increase. The receipts on the Erie canal are \$200,000 in advance of last year, though the tolls have been reduced 25 per cent—a striking proof of the necessity of its enlargement. Below will be found a statement of the receipt of some of the leading articles compared with the receipts of last year.

The Evening Journal gives the annexed statement of the quantity of flour, wheat, corn and barley, left at tide water during the 4th week in June, in the years 1850 and 1851, as follows:

	Flour. bbls.	Wheat. bush.	Corn. bush.	Barley. bush.
1850....	60,110	23,080	368,639	1,320
1851....	76,881	39,351	316,742	1,100
Increase.	16,771	16,271	Dec. 51,897	220

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 30th June, inclusive, during the years 1850 and 1851, is as follows:

	Flour. bbls.	Wheat. bush.	Corn. bush.	Barley. bush.
1850....	633,420	220,904	1,290,391	111,945
1851....	1,141,906	534,704	2,886,811	99,716
Inc....	508,486	313,800	1,596,420	dec.12,229

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 30th June, inclusive, during the years 1849 and 1851, is as follows:

	Flour. bbls.	Wheat. bush.	Corn. bush.	Barley. bush.
1849....	769,641	483,653	2,171,610	94,201
1851....	1,141,906	534,704	2,886,811	99,716
Increase.	372,265	51,046	715,201	5,515

By reducing the wheat to flour, the quantity of the latter left at tide water this year, compared with the corresponding period of last year, shows an increase of 571,246 bbls. of flour.

The amount received for tolls on all the New York state canals during the fourth week of June, is \$90,827 68 Same period in 1850..... 83,706 66

Increase in 1851.....\$7,121 02

The aggregate amount received for tolls from the commencement of navigation to the 30th of June inclusive, is.....\$1,128,851 75 Same period in 1850..... 926,486 66

Increase in 1851.....\$202,365 09

These figures show a very flattering result for the first two and a half months of canal navigation,

and the prospects for the first week in July are that it will show a corresponding increase in tolls.

The Bids for the Wilmington and Manchester Bonds (\$300,000) were opened on the 10th inst., at the office of Winslow, Lauier & Co. The number of bonds bid for was \$521,000. The following were the successful bidders:—

	Bonds.	Price.
E. W. Charles, Darlington, S. C.	5	100
H. Nutt, Wilmington, N. C.	5	100
N. N. Nixon, Wilmington, N. C.	5	100
Alfred Smith, Whitesville, N. C.	10	100
Eli Gregg, Mars Bluff, S. C.	15	100
G. J. W. McCall, Darlington, S. C.	13	100
James S. Gibson, Darlington S. C.	10	98
R. Rogers, Black Creek, S. C.	8	96½
John A. Rogers, Black Creek, S. C.	3	96½
D. Rees Gregg, Mars Bluff, S. C.	2	95½
Jas. Maultsly, Whitesville, N. C.	10	95
Gilbert Potter, Wilmington, N. C.	5	94
Edward Kidder, do.	5	94
Jno. A. Taylor, do.	5	94
H. M. Baldwin, Whitesville, N. C.	3	94
Calvin Haynes, do.	3	92
De Rossett & Brown, Wilmington, N. C.	5	92
Edmund Clark, Cleveland, Ohio	10	91½
Corcoran & Riggs, Washington	25	90-65
" " "	25	90-45
" " "	25	90-20
" " "	20	90
Chubb, Schenck & Co., "	10	90-55
" " "	10	90-05
E. S. Whelen & Co., Phila.	5	90-26
Thos. McKenzie, New York	2	90-05
G. I. W. McCall, Darlington, S. C.	12	90-00
A. T. Clark, Tarboro, N. C.	1	90-00
Allen McFarlan, Cheraw, S. C.	20	90-00
M. J. McCall, Darlington, S. C.	2	90-00
Jno. F. Ervin, do.	5	90-00
Wm. Evans, Marion Ct. House, S. C.	5	90-00
J. A. Maltby, Whitesville, N. C.	4	90-00
Jno. Dawsy, Wilmington, N. C.	5	90-00
R. Wooten, do.	2	90-00

In all.....300

In addition to the above there were 221 bonds bid for, 211 at from 80 to 90, mostly at near latter price, and 10 at under 80.

The shipments of specie for the week ending to-day, are as follows:—

[Per Niagara, July 3.]	
American gold.....	\$916,000
English gold and silver.....	49,405
Total.....	\$965,405
[Per Arctic.]	
American gold.....	\$979,000
English gold and silver.....	8,890
Total.....	\$987,890

Grand total.....\$2,053,295

The following are the receipts of the New York and Harlem railroad company for the month ending July, 1851.....\$54,992 08
— 1850.....45,855 41

Increase.....\$9,135 67

For six months ending July, 1851.....\$283,866 02
" " " " 1850.....223,201 62

Increase.....60,664 40

Norwich and Worcester Railroad.—The receipts for June on the Norwich and Worcester railroad, were:—

	1850.	1851.
Through travel.....	\$1,456 04	\$1,596 51
Local Travel.....	7,791 68	7,755 09
Freight.....	9,426 64	11,234 62
Mails, Expresses, &c.	980 25	980 25
	\$19,654 61	\$21,617 47

Showing an excess this year of \$1,962 86, equal to nearly 11 per cent. The through travel shows a small gain, while the receipts from freight give a large advance on those of last year.

The following are memoranda of the business upon the Baltimore and Ohio railroad, for the month of June, 1851:—

	For Passengers.	For Freight.
Main Stem.....	\$25,086 78	\$85,768 19
Washington Branch..	17,906 02	5,875 54
	\$42,992 80	\$91,643 73

Making an aggregate of \$110,854 97 on the Main Stem, and \$23,781 56 on the Washington Branch—the total being \$134,636 53.

The above, compared with the corresponding month of last year, shows a decrease of \$4811 44, being \$1,397 33 on the Main Stem, and \$3,414 06 on the Washington Branch. The falling off on the Washington Branch is attributed to the fact that Congress was in session in June, 1850, and on the Main Stem to a large amount of flour being held back, waiting higher prices.

SALES OF STOCK IN NEW YORK.

	July 10.	July 3.
Sales.	Sales.	Sales.
U. S '67 Loan.....	116½	116½
Erie R.R.....	84½	83½
Harlem R.R.....	73	74
Stonington.....	44½	44½
L.I. R.R.....	17	17½
Norwich & Wor....	57	60
Del. & Hudson.....	121½	121½
Reading.....	56½	57½
Morris Canal.....	16	16½
Erie income.....	97½	96½
" " Bonds.....	103	103½
Canton.....	67	70
Farmers Loan.....	69	69

SALES OF STOCKS IN BOSTON.

	July 9.	July 2.
Old Colony Railroad.....	68	67½
Boston and Maine R.R.....	103½	103½
Eastern Railroad.....	98	102
Fitchburg Railroad.....	110	109½
Michigan Central Railroad.....	103	103½
Northern Railroad.....	69½	70
Vermont Central Railroad.....	35½	36
Vermont and Mass. R.R.....	30½	30½
Western Railroad.....	102½	103½
Ogdensburg Railroad.....	35½	37½
Rutland Railroad.....	55	53
Boston and Worcester Railroad.....	103½	103½
Rutland Railroad Bonds.....	97	97
Ogdensburg Railroad Bonds.....	97	98
Vermont Central R.R. Bonds.....	91½	91½
Boston and Providence R.R.....	90	89½
Philadelphia, Wilm'gton & Balt.....	29½	30
Concord R.R.....	55	54½

Illinois.

Springfield and Bloomington Road.—A preliminary survey of this route, from Springfield to the Sangamon river has been made. A most favorable point for crossing the river was found, besides being in the direct line. The engineer corps left Springfield on the 24th ult., to continue the survey from the river to Bloomington.

Hartford and Providence Railroad.

The negotiations which have been pending during the past few weeks for a union of the Providence and Plainfield railroad, and the Hartford and Willimantic railroad are terminated, and the parties have entered into a contract which will insure the completion of the road from Providence to Hartford immediately.

The *Eastern Railroad Company* have declared a dividend of 4 per cent payable on the 16th. The net income of the road for the year from all sources, after paying for running expenses, interest, &c., amounts to \$277,451, 83; from which two dividends of 4 per cent each have been declared \$237,400.

Compound Rail for Railroads.

We are glad to learn from various quarters that the subject of the use of the compound rail is attracting a great deal of attention, and that the proprietor, J. F. Winslow, Esq., of Troy, is engaged in filling large orders with American iron. All the experience of its use thus far gives entire satisfaction. It realises the great advantages predicated of it in the abstract, while at the same time the objections which are usually made to it, are shown not to exist. The compound rail is as strong as the ordinary pattern of equal weight. If such is the fact, then the saving in repairs alone over the old track, will in a very few years pay the first cost of the iron, to say nothing of increased speed, greater safety of passengers, etc., etc.

The above pattern is now in use upon the Utica and Schenectady, Hudson River, Erie, Reading, and some other roads; and has received the approbation of all the companies. The cost of "maintenance of way," is the moth that eats up the earnings of railroad companies; and any improvement which can lessen this expense, should receive the attention of railroad companies. The experiment of the use of the compound rail can be tried very satisfactorily on a small scale, and we can safely say that its success so far justifies every railroad company in making a trial to satisfy themselves.

Iron.

200 Tons Fishkill Charcoal Iron for sale on reasonable terms, also from 1000 to 5000 tons Fishkill Hematite Ore—delivered at Poughkeepsie or New York. Samples of the ore may be seen at the store of Messrs. Hollman, Bailey & Co., No. 62 Water st., New York. Enquire by letter to NORMAN M. FINLAY, Poughkeepsie, Dutchess county, N. Y. July 10, 1851.

Trautwine on R. R. Curves.

By JOHN C. TRAUTWINE, Civil Engineer, Philadelphia, Pa.

IN press, and will be published in a few days; accompanied by a Table of Natural Sines and Tangents to single minutes, by means of which all the necessary calculations may be performed in the field.

This little volume is intended as a field-book for assistants; and will be found extremely useful, as it contains full instructions, (with wood cuts) for laying out, and adjusting curves; with Tables of Angles, Ordinates, etc., for Curves varying from 13 miles, down to 146 feet Radius.

A portable Table of Natural Sines and Tangents to minutes, has for a long time been a desideratum among Engineers, independently of its use in laying out curves.

The volume is neatly got up in duodecimo; and handsomely bound in pocket-book form.

Sold by Wm. Hamilton, Actuary of the Franklin Institute, Philadelphia. Price \$1.

Also in press, and will be issued in a few weeks, "Trautwine's Method of Calculating Excavation and Embankment."

By this method, which is entirely new, (being now made known for the first time) the cubic contents are ascertained with great ease, and rapidly, by means of diagrams, and tables of level cuttings. Thin octavo; neatly half bound, \$1. For sale by Wm. Hamilton.

June 28, 1851.

S. S. Keyser & Co., IRON WAREHOUSE,

Corner of South and Pratt Streets,
BALTIMORE, MD.

Selling Agents for the Rough and Ready Bar Iron and Elk Boiler and Flue Iron Rolling Mills, Sarah and Taylor Furnaces, and Wrightsville Hollow Ware Foundry, and Dealers in Bar and Sheet Iron, and Cast, Sheer, German, Blister, Spring and Electroplated Steel, etc., etc.

THE Fourth Annual Exhibition of AMERICAN MANUFACTURES, by the MARYLAND INSTITUTE for the Promotion of the Mechanic Arts, will be opened in Baltimore on the 20th October, 1851.

The Exhibition will be held in the SPLENDID NEW HALL of the Institute, (fronting on Baltimore street) now being rapidly completed. Their edifice is centrally situated, chaste in its architecture, solid in its construction, and is by far the largest and most complete building in the United States, devoted to the Mechanic Arts. It may be added that this building is 355 feet long by 60 in breadth, with an average height of 68 feet, containing some twelve apartments, the largest of which is 255 feet by 60, and that the cost will be over \$70,000.

To this Exhibition, the Managers ask the attention of all engaged in industrial pursuits throughout the country, and cordially invite them to contribute specimens of their best productions for public inspection, and to compete for the prizes offered by the Institute. These prizes consist of GOLD and SILVER MEDALS, DIPLOMAS, etc., which were last year distributed as follows:—Gold Medals, 16; Silver ditto, 90; Diplomas, 60; besides 85 articles of Jewelry, etc., to ladies. Fair play will be scrupulously observed towards all, and every facility of Steam power, shafting, fixture, labor, &c., &c., will be amply provided free of expense. The machinery will be under a special superintendent, and a fine display of it is looked for. The last exhibition of the Institute was visited by more than 40,000 persons, and with their vastly improved accommodations and alterations, this number will be doubled at the coming display, embracing many Virginians, Pennsylvanians, and other strangers from the South and West.

Joshua Vansant, President.

Ed. Needles, } Vice Presidents.

F. A. Fisher, }

Samuel Sands, Rec. Sec'y.

Wm. Prescott Smith, Cor. Sec.

F. J. Clare, Treasurer.

BOARD OF MANAGERS.

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Chas. Suler.

(The last nine in *Italics* are the Committee on Exhibition.)

The Hall will be opened for the reception of goods on MONDAY, 13th October; on the next Monday, 20th, at 7 P. M., the Exhibition will be formally opened to the public, and will positively close on Wednesday, 19th November. Articles for competition must be in the Hall by Thursday night, Oct. 16, unless delayed in shipment after starting in ample time.

Those who intend depositing, will give the Committee or the Agent, notice as early as possible, stating the nature of the goods, and probable amount of room required, to exhibit them to advantage.

Circulars, containing a view of the new Hall and the full regulations of the Committee, with special information, if required, may be had promptly, by addressing the undersigned, or the Institute's Agent, J. S. Selby, Baltimore. *post-paid*.

ADAM DENMEAD,

Chairman Com. on Exhibition for 1851.

SUPERIOR BLACK WRITING & COPYING INK.

Jones' Empire Ink.

87 Nassau st., Sun Building, New York city.

Net prices to the trade—

Quarts, per dozen,	\$1 50	6 oz. per dozen,	\$0 50
Pints, " "	1 00	4 " " "	0 37½
8 ounces, " "	0 62½	2 " " "	0 25

On draught per Gallon, 20 cents.

This is the best Ink manufactured, it flows freely, is a good copying ink, and will not mould, corrode, precipitate or decay. Orders for export, or home consumption, carefully and promptly attended to by

THEODORE LENT.

Notice to Contractors.

Engineers Office, E. T. & V. R. R. Company, }
Greenville, E. T., June 5th, 1851. }

PROPOSALS will be received until the 1st day of October next, for the Grading and Masonry of that part of the E. T. & V. Railroad between the Eastern terminus of said road at King's Meadow, and Rheatown, in Greene County, a distance of about forty-seven miles. A large amount of very heavy work, both in Grading as well as Masonry, will be found on this division, offering strong inducements to able Contractors.

Maps, Profiles, and Specifications can be seen at this Office, on and after the 20th of July next.

The Company reserve the right to reject all, or any proposals that they deem unsatisfactory.

Proposals should be directed to the Treasurer and Secretary of the E. T. & V. Railroad Company, Jonesborough, E. T.

LLOYD TILGHMAN,
Chief Engineer.

Lovegrove's Patent Cast Iron Water and Gas Pipes.

THE Subscriber, the Inventor and Patentee of the Centrifugal mode of giving form to metallic substances while in a molten state, is preparing to make Cast Iron Water and Gas Pipes, of any dimensions, at prices much lower than they can be made in the old manner, and the pipes warranted to stand a pressure of three hundred pounds to the square inch, and to be soft enough to drill. Steam Engines and all kinds of machinery. Cast Iron Doors and Frames, and Mill Castings of every description, made to order.

THOMAS J. LOVEGROVE,

Machinist and Founder,

West Falls Avenue, below Pratt st., Baltimore.

Superintendent of a Railroad.

THE Post of Superintendent of a Railroad is wanted by a middle aged man, who can give satisfactory evidence of his capacity, integrity and qualifications for such a situation. Letters addressed to A. B., care of the Editor of the Railroad Journal, New York, (to whom the above would refer), will receive immediate attention.

New York, June 11, 1851.

Spikes, Spikes, Spikes.

ANY person wishing a simple and effective Spike Machine, or a number of them, may be supplied by addressing J. W. FLACK, Troy, N. Y. or, MOORE HARDAWAY, Richmond, Va. March 6. 1850.

Railway Iron.

3000 TONS, 50, 57, and 60 lb. Rails, made of best English Iron and under particular specifications.

Also: Rails imported on commission or at a fixed price, delivered at a port in England, or at any port in the United States. Apply to

DAVIS, BROOKS & CO.,
June 5, 1851. 28 Beaver st., New York.

Wheel, Forge and Foundry Iron.

LOCUST GROVE Wheel Iron of great strength and superior chilling property.

Balt. Charcoal Forge Iron, from Patuxent, Curtis Creek and Gunpowder furnaces.

Elkridge Foundry Iron, of superior strength and softness. Anthracite and Charcoal Iron from Pennsylvania and Virginia. Gas and Water Pipes, Lamp Posts from Elkridge furnace.

LEMMON & GLENN,
Sm9 62 Buchanan's Wharf, Baltimore.

To Railroad Companies.

SALISBURY REFINED IRON.

THE Undersigned, having enlarged and perfected his Works, is now prepared to furnish Locomotive Tire of a better quality than have heretofore been used. Railroad Companies who may wish it, will be furnished with a set for trial, not to be paid for until they are satisfied of their superior quality over any other. Also made at short notice, and in the best manner, Locomotive Cranks, Engine and Car Axles, and other Locomotive Forgings.

All work ordered from me will be made of Salisbury Iron, and done in the best manner.

Address HORATIO AMES,
Falls Village, Conn.

May 1, 1851.

TO CONTRACTORS.

Engineer's Office, S. S. R. Road Co. }
Petersburg, Va., May 27, 1851. }

PROPOSALS will be received at the Engineer's office, South Side Railroad, at Petersburg, Va., until the 31st of July next, for the construction of Appomattox Bridge, to be erected near Farmville.

The Bridge will be about 3000 feet long and 80 feet high; to consist of a wooden superstructure resting on abutments and piers.

The piers will be of brick or stone, to be determined after receiving the proposals.

Good brick earth can be obtained near the site of the Bridge.

The proposals may be made for the structure complete, or for the various items of work and materials, viz.: Masonry, 'urnishing Bricks and Timber; workmanship of laying Bricks and workmanship of superstructure.

Security will be required for the fulfilments of the contracts, and it will be necessary that each proposal be accompanied with a letter from a responsible person or persons, stating that they will become security.

C. O. SANFORD,
Ch. Engineer, S. Side R. Road.

Railroad Iron.

THE Subscribers, Agents for the Manufacturers, are prepared to contract for the delivery of Railroad Iron at any port in the United States or Canada, or at a shipping port in Wales.

WAINWRIGHT & TAPPAN,
29 Central Wharf.

Boston, June 1, 1851.

Bowling Tire Bars.

40 Best Flange Bars	5½x2 inches,	11 feet long.
40 " "	5½x2 " "	7 feet 8 in. long.
40 " Flat " "	6x2 " "	11 feet long.
40 " " "	6x2 " "	7 feet 8 in. long.

Now in store and for sale by

RAYMOND & FULLERTON,
45 Cliff street.

To Railroad Companies, Machinists, Car Manufacturers, etc., etc.

CHARLES T. GILBERT,

NO. 80 BROAD ST., NEW YORK,

IS prepared to contract for furnishing at manufacturer's prices—

Railroad iron,
Locomotive Engines,
Passenger and Freight Cars,
Car Wheels and Axles,
Chairs and Spikes.

Orders are invited; and all inquiries in relation to any of the above articles will receive immediate attention.

JOHNSON, CAMMELL & Co's Celebrated Cast Steel,

AND
ENGINEERING AND MACHINE FILES, which for quality and adaptation to mechanical uses, have been proved superior to any in the United States. Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cy-clops Steel Works Sheffield.

JOHNSON, CAMMELL & CO.,
21 Cliff St., New York.

November 23 1843.

Car Wheel Iron.

100 Tons "Columbia" No. 2 Cold Blast Charcoal Iron.

300 Tons "Salisbury" No. 1, do. do.
For sale by CHARLES T. GILBERT,
No. 80 Broad st.

New York, Sept. 21, 1850.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

To Railroad Companies, etc.



The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

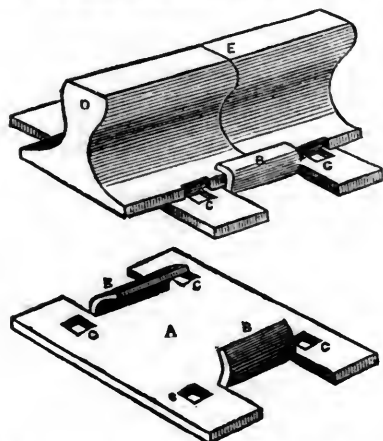
I also invite attention to an improved PATENT SPRING LOCK, for SLIDING Doors to Freight and Baggage Cars, now in use upon the Pennsylvania Central, Greenville and Columbia, S. C., Reading, Pa., and other Railroads.

Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH,
46 South 8th St. Philadelphia.

May 9, 1851.

The American Railroad Chair Manufacturing Co.



ARE prepared to make WROUGHT IRON RAIL ROAD CHAIRS, of various sizes, at short notice.

By use of the WROUGHT IRON CHAIR, the necessity of the wedge is entirely done away—the lips of the chair being set, by means of a sledge or hammer, close and firmly to the flange of the rail.

The less thickness of metal necessary in the Wrought Iron Chair gives much greater power and force to the spikes when driven—and consequently a much less liability to the spreading of the rails by reason of the spikes drawing or becoming bent.

The less weight necessary in the Wrought Iron Chair, will enable us to furnish them at a cost much below that of CAST IRON CHAIRS.

DESCRIPTION OF THE ABOVE CUTS.

Figure 1 is a perspective view of the rail secured in the chair, and fig. 2 is a perspective view of the chair itself. D, E, are sections of two rails placed together, and secured at the joint on the chair by the jaws B, B. The chair is bolted down by spikes C, C. In fig. 2, the chair is represented as made of a single block or plate A of wrought iron.

The chair is set in its proper place on the track, spiked down, and the ends of the two rails brought together within the jaws as represented in fig. 1.

For further information address,

N. C. TROWERIDGE, Secretary,
Poughkeepsie, N. Y.

June 1, 1851.

Railroad Commission Agency.

THE Subscriber offers his services to Railroad Co's and Car Makers for the purchase of equipment and furniture of roads and depots and all articles and materials required in the construction of cars, with cash or approved credit. No effort will be spared to select the best articles at the lowest market price.

He is sole Agent for the manufacture of the ENAMELED CAR LININGS, now in universal use. The best Artists are employed in designing new styles, and he will make to order pieces with appropriate designs for every part of the car, in all colors, or with silver grounds and bronzed or velvet figures.

He is also Agent for Page's Car Window Sash Fasteners, which is preferred by all who have used it to any other.

CHARLES STODDER,
75 Kilby st., Boston.

June 20, 1851.

3m.

LOWMOOR

AND

U. S. BEST FINCH IRON. To Iron Merchants.

JOHN FINCH & SONS, Iron Merchants, Liverpool, now are, and for more than twenty years past have been, sole Agents for the **LOWMOOR IRON COMPANY**, for the United States and Canada, for the sale of their well known Railway Tire Bars, and Axles, Piston Rods, Boiler Plates, Angle, Rivet, and all other kinds of Lowmoor Iron; also, sole Agents for the sale of the superior Staffordshire Iron stamped "FINCH CROWN" and "U. S. BEST FINCH," and Merchants and Wholesale Dealers in all other kinds of British Iron.

We hereby inform our friends and the public that we have this day appointed Mr. WM. BAILEY LANG, of Boston, as our only representative to receive orders and to transact our general business in the United States.

For **JOHN FINCH & SONS**,
JOHN FINCH Sen.

Boston, April 11, 1851.

LOWMOOR and other Bent, Welded and Blocked RAILWAY TIRES, ready for use, **E. FINCH'S** Patent Dovetailed and other kinds of WROUGHT IRON RAILWAY WHEELS, with, or without the finished Axles, for Locomotives and for Passenger and Merchandise Cars, also Wrought Iron Railway Chairs, Railway Spikes, etc.

To the Managers of Railways, Engineers and others: Gentlemen:—We, **FINCH & WILLEY**, Engineers, Liverpool, Manufacturers of the above articles, respectfully inform you that we have this day appointed Mr. WM. BAILEY LANG, of Boston, as our sole Agent for the sale of said articles, and the transaction of our business in the United States of America, and for whom we solicit your kind attention and patronage.

For **FINCH & WILLEY**,
JOHN FINCH, Sen.

Boston, April 11, 1851.

Having accepted the above Agencies, I beg leave to solicit your orders, which shall at all times receive my prompt and careful attention. Please address all communications either to **MESSRS. JOHN FINCH & SONS** or **MESSRS. FINCH & WILLEY**, Liverpool; or to me, at my Steel Warehouse, No. 9 Liberty Square, Boston. Yours very respectfully,

WM. BAILEY LANG.

Boston, April 11, 1851.

The following are testimonials of the quality of **FINCH & WILLEY'S** WROUGHT IRON RAILWAY WHEELS from the Yorkshire and Lancashire Railway Co., one of the largest in Great Britain, and from the London and North Western Railway Co., the largest Railway Company in the world.

LONDON AND NORTH WESTERN RAILWAY,
(Northern Division.)

WAGON DEPARTMENT, ORDSALL LANE,
Manchester, January 4, 1851.

Gentlemen:—I have very great pleasure in bearing my testimony to the excellent quality of your Wrought Iron Railway Wheels.

This Company have many of them now in use on their lines, and during my experience, as their Superintendent, which is now upwards of 9 years standing, I have not known any of them to fail during that time.

I am, Gentlemen, yours, truly,

OWEN OWENS.

MESSRS. FINCH & WILLEY,
Windsor Foundry.

LANCASHIRE AND YORKSHIRE RAILWAY,
Wagon Department, Jan. 3, 1851.

Messrs. Finch & Willey,

Gentlemen: In reply to your request writing me to give my opinion of the 700 sets of Wrought Iron Wheels you furnished this company during the years 1847 and 1848, I have much pleasure in stating that we have not had a single instance of your Wheels failing in any respect, and I consider them equal if not superior to any Wheels we have on this line of railway. The Tires being **LOWMOOR** Iron, 1½ inch thick, I have no doubt they will run under ordinary goods' wagons 12 years without any repairs more than the tires turning up.

I am Gentlemen,

Yours, truly, **WM. EMMETT.**

NOTE.—4 Wheels and 2 Axles are one set, consequently this order contained 2800 WHEELS and 1400 AXLES; value over \$100,000.

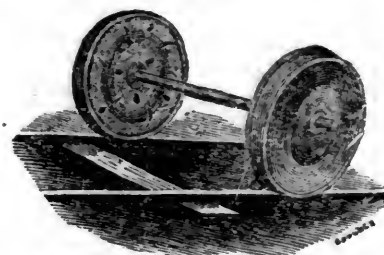
Boston Locomotive Works,

—Late Hinkley & Drury—

No. 380 Harrison Avenue,
BOSTON.

Locomotive and Stationary Steam Engines; Boilers; Iron, Brass, Copper and Composition Castings; Coppersmith's Work, and all kinds of Railroad Machinery furnished at short notice.

ALSO



Van Kuran's Improved Railroad Wheel,

Patented May 1, 1849. Manufactured under the personal superintendence of the Patentee, as above.

Orders for any quantity of wheels executed with dispatch, and wheels and axles fitted in the very best manner and at the lowest rates. Address

DANIEL F. CHILD, Treasurer, Boston.



Providence Tool Co.,

MANUFACTURERS OF

Plane Irons, Tooth Irons, Soft Moulding and Rabbet Irons, Cornice Irons, Plow Bits, and Planing Machine Knives:

NUTS, WASHERS AND BOLTS.

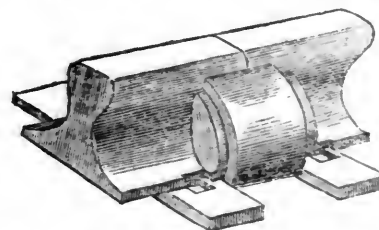
—ALSO—

PLATE HINGES AND PICK AXES.

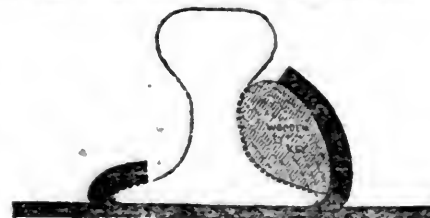
They are prepared to execute orders for all descriptions of Cold Punching and Job Work.

WM. FIELD, Agent. **RUFUS WATERMAN**, Treas.
PROVIDENCE, R. I.

Railroad Iron, SPIKES, AND WROUGHT IRON CHAIRS.



THE Undersigned, Agent for Manufacturers, is authorized to contract for Welsh Railroad Iron of the best quality, and deliverable at any port on favorable terms, also Spikes and Wrought Iron Chairs, made from the best iron, and of any pattern and weight. The new Wrought Iron Chair, with the introduction of a "Key," as per the annexed plan, will be found a great improvement on the old pattern.



Boiler Plates of superior quality, perfect regularity in the squaring and thickness, and made with great care.

Samples can be seen at our office, No. 20 Beaver St.
CHARLES ILLIUS

RAILROAD CAR MANUFACTORY

TRACY & FALES,
GROVE WORKS, HARTFORD, CONN.
Passage, Freight and all descriptions of
RAILROAD CARS,

AS WELL AS
LOCOMOTIVE TENDERS,
Made to order promptly.

The above is the Largest Car Factory in the Union. In quality of Material, and in Workmanship, Beauty and Good Taste, as well as Strength and Durability, we are determined our work shall be unsurpassed.

JOHN R. TRACY. THOS. J. FALES.

CHILLED TIRES FOR LOCOMOTIVE ENGINES. To Railroad Companies.

THE Undersigned, Assignee of Letters Patent, respectfully invites the attention of Railroad Companies to the CHILLED TIRES for LOCOMOTIVE ENGINES, which he offers for sale.

These Tires were first introduced by Messrs. Perkins & McMahon, upon the Baltimore and Ohio Railroad, in 1843, where, after a long and severe trial, they were generally adopted, on both passenger and freight engines, and now have entirely superseded Wrought Tires on that road, on which are many engines of the heaviest class, which ascend grades of *eighty-five feet per mile*, taking with them one hundred and twelve tons, exclusive of cars. This performance shows in some measure the adhesive character and strength of the Tire.

During a service of seven years, these Tires have very much exceeded in durability those of wrought iron, while their first cost, and expense of repairs, is more than *fifty per cent. less*. They also retain more equally their diameter and proper form of tread, which is a point of much value in engines with coupled wheels.

It is believed these Tires are peculiarly well adapted to freight engines, as the objection to coupling the wheels of locomotives is the increased friction, arising principally from the unequal wear of wrought tires; and hence most of the freight engines where wrought tires are used, have but four wheels as drivers, with frequently a weight of sixteen tons, or more, upon them. which may be of no disadvantage to the engine, although its effect upon the track is like a car with sixteen tons upon four wheels, and it is presumed no one would permit cars so heavily loaded to pass over their road.

As Chilled Tires wear more uniformly than those of wrought iron, there can be no doubt when these are used, that the weight necessary for adhesion may be distributed upon more driving wheels, without any material disadvantage to the engine, and thus placing less weight upon a single point, would relieve the track, and secure, to a great extent, the object sought to be gained by the plan so frequently proposed, of using light engines, which would bring with it the necessity of increasing the number of trains and train hands.

The complete success of Chilled Tires upon the Baltimore and Ohio road for the last seven years, and upon other roads for a more subsequent period, is a strong proof of their practical character, while their cheapness and durability, it is believed, recommend their trial by every railroad company.

It may be thought by some that the whole wheel or strength, would be preferable to wheels with tires, but experience shows the latter to be a much stronger and more durable wheel, on account of its freedom from tension, which is never the case with a whole wheel. That TENSION has much to do with the breaking of wheels and tires, may be inferred from the fact, that a set of chilled tires, five feet diameter, on a first class passenger engine, have been in constant service during the past winter, on one of our Eastern roads, and have withstood the severities of the season, where whole wheels and wrought tires have broken. And it may be proper to remark, that wherever chilled tires have been introduced, whole wheels as drivers are invariably abandoned, they being far more expensive to maintain, as there is a crank to form as often as a wheel is renewed, which is not the case on the renewal of a tire.

The peculiar manner of fastening these tires to the wheel without shrink, applies equally well to wrought tires, and is of much importance where they are used, as it secures them against the TENSION or STRAIN they receive by the present plan of shrinking them to the wheels, which undoubtedly is the cause of wrought tires breaking so frequently, particularly in cold weather, which produces a greater contraction of the tire, thereby increasing the strain. This plan makes the tire perfectly secure upon the wheel, and is attended with less expense, as will be seen by the following testimonials, which are respectfully submitted.

Lowell, March, 1851. L. B. TYNG.

TESTIMONIALS.

Baltimore and Ohio R. R. Office, }
Jan 2, 1850. }

Mr. L. B. TYNG, Lowell, Mass.—Sir: Your favor of the 26th ult, is before me, asking my opinion of the Chilled Cast Iron Tires, of Messrs. Perkins & McMahon, patentees. I do not hesitate to speak favorably of them, nor to say that I would give them the preference over wrought iron tires, whenever the adhesive tenacity of the latter to the rails is not all called for, there being somewhat less adhesion to the chilled wheel.

This can, however, scarcely be called a practical point, as nearly all of the Passenger Engines now in use have a surplus of adhesion, and nearly all Freight Engines being provided with the sand box, for emergencies arising from sharp curves, heavy grades or wet rails.

The Chilled Tire is very much cheaper in first cost, will last longer, and offers a facility for putting it on the wheel, rendering comparison with the wrought iron tire an absurdity—it not being necessary even to take the wheels from the machine for the purpose.—Many of them are in successful use on this road, and I consider its curves and other peculiarities the most severe of all existing tests. One set of five feet in diameter, has run 50,000 miles under one of our Passenger Engines, and will to all appearance, run as many more; and, in the mean time, they have not cost a dollar for repairs or adjustment.

It may be suggested that they might not stand a Northern frost. This is possible; but I believe otherwise, as the weather here is occasionally as severe as in Boston, and if I had charge of a northern road, after the experience I have had here, I would make their trial one of my very first acts.

Respectfully your Ob^t Serv^t,
WM. PARKER, General Supt., etc.

January 29, 1851.
Philadelphia, Wilm. and Balt. R. R. Office, }
Wilmington, Del. }

Mr. L. B. TYNG—Sir: We have used the solid Cast Iron Chilled Wheel, and Cast Iron Chilled Tire, for engine drivers, on this road since 1842. When wrought iron tires under new engines, purchased from time to time, wear out, I invariably replace them with the Chilled Tire of Messrs. Perkins & McMahon, patentees.

These Tires will last, on the average, three times as long as wrought tires; seldom requiring renewals under three years, and lasting much longer usually. We have a set which has been in constant use for five years, and still in fair order. The adhesion supplied by the Chilled Tires, I find in practice with engines of the same model and weight, to be equal to that given by wrought tires. This is certainly a fact, though not an acknowledged one, in general. Those who think otherwise, will in time change their opinions.

I am of opinion that the Chilled Tire is as safe as the wrought, at any temperature. In eight years use, we have broken but one tire out of more than fifty, and that by a violent concussion on the occasion of a run off.

The use of the Chilled Tire, and the ease and rapidity with which it may be replaced, would certainly enable a road to do the same amount of work with fewer engines—since but little time would be lost in laying up an engine for new tires, or for turning down old ones, as must be done when wrought tires are used.

I am yours respectfully,
I. R. TRIMBLE,
Engineer and General Supt.

Office Eastern R. R., Salem, Dec. 23, 1850.
L. B. TYNG, Esq.—Sir: Your favor of Nov. 30th, inquiring respecting the Chilled Cast Iron Tires, came duly to hand, and in answer, I will say, that this road have in use one set cast and fitted to the wheel, by Messrs. Bush & Lobdell, upon a twenty ton first class Passenger Engine, which has run in eight months, 26,639 miles, and to all appearance, are about as good as when they first commenced running.

In regard to the comparative expense of the cast or wrought iron tires, I do not hesitate to say that the difference would be vastly in favor of the former.

I have ordered a second set, and they will be put on to the engine immediately. Respectfully,

JOHN KINSMAN, Supt. E. R. R.

Chilled Tires for the various sized wheels, or wheels with either chilled or wrought tires fitted up upon this plan, may be had of the following persons:

ALDRICH, TYNG & Co, Lowell, Mass.
SMITH & PERKINS, Alexandria, Va.

Rights for using Tires upon the above plan, may be had on reasonable terms, of L. B. TYNG, Lowell, and at N. York.

Railroad Iron.

THE UNDERSIGNED, HAVING made arrangements abroad, are prepared to contract for the delivery of Foreign rails, of approved brands upon the most favorable terms.

They will also make contracts for American rails, made at their Trenton works, from Andover Iron, in whole or in part, as may be agreed upon.

They are prepared to furnish Telegraph, Spring and Market Wire; Braziers and Wire Rods; Rivets and Merchant Bars to order, all made exclusively from Andover Iron. The attention of parties who require iron of the very best quality for special purposes, is respectfully invited.

COOPER & HEWITT,
17 Burling Slip, New York.

February 15, 1850.

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.

August, 16, 1849.

6m33

Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron.

THOMAS B. SANDS & CO.,
73 New street,
New York.

February 3, 1849.

Railroad Spikes.

THE subscribers are prepared to make and execute contracts for Railroad Spikes of a superior quality, manufactured by the New Jersey Iron Company, at Boonton.

DUDLEY B. FULLER & CO.,
139 Greenwich st. corner of Cedar.

ENGINEERS.

Atkinson, T. C.,

Mining and Civil Engineer,
Orange and Alexandria Railroad, Alexandria, Va.

Clement, Wm. H.,

Little Miami Railroad, Cincinnati, Ohio.

Cozzens, W. H.,

Engineer and Surveyor, St. Louis, Mo.

Alfred W. Craven,

Chief Engineer Croton Aqueduct, New York.

C. Floyd-Jones,

Central Railroad, Decatur, Illinois.

Gay, Edward F.,

Columbia and Philadelphia Railroad, Philadelphia Pa.

Gilbert, Wm. B.,

Rutland and Burlington Railroad, Rutland, Vt.

Gzowski, Mr.,

St. Lawrence & Atlantic Railroad, Montreal, Canada.

Grant, James H.,

Nashville and Chattanooga R. R., Nashville, Tenn.

S. W. Hill,

Mining Engineer and Surveyor, Eagle River,
Lake Superior.

Holcomb, F. P.

Southwestern Railroad, Macon, Ga.

Latrobe, B. H.,

Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,

Buffalo and Conhocton Valley Railroad, Bath, N. Y.

Morris, Elwood,

Engineer, Chartiers Co., Pittsburgh, Penn.

Nott, Samuel,

Lawrence and Manchester Railroad, Boston,

Osborne, Richard B.,

Cattawissa, Williamsport and Erie R. R., Tamaqua.

Prichard, M. B.,

East Tennessee and Georgia R. R., Cleveland, Tenn.

W. Milnor Roberts,
Bellefontaine and Indiana Railroad, Marion, Ohio.

Shanly, Walter,
Chief Engineer Bytown and Prescott Railway,
Prescott, Canada.

Roberts, Solomon W.,
Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Sanford, C. O.,
South Side Railroad, Virginia.

Schlatter, Charles L.,
Northern Railroad (Ogdensburg), Malone, N. Y.

Steele, J. Dutton,
Pottstown, Pa.

Trautwine, John C.,
Civil Engineer and Architect, Philadelphia.

Tinkham, A. W.,
United States Fort, Bucksport, Me.

Troost, Lewis,
Alabama and Tennessee Railroad, Selma, Ala.

Whipple, S.,
Civil Engineer and Bridge Builder, Utica, N. Y.

HOTELS.

DAVIS'S
ALHAMBRA HALL,
No. 136 Pratt street,
BALTIMORE.

Exchange Hotel,
Adjoining Eastern Railroad Depot,
BUFFALO, N. Y.
BY..... FISK & SPERRY,
Late of Delevan House, Albany.

MANSION,
Corner of Maine and Exchange Streets,
P. DORSHIMER. BUFFALO.

Barnum's City Hotel,
MONUMENT SQUARE, BALTIMORE.
This Extensive Establishment, erected expressly
for a Hotel, with every regard to comfort and conven-
ience, is situated in the centre and most fashionable
part of the city, and but a few minutes' walk from the
Railroad Depots and Steamboat Landings.
The House has lately undergone a thorough repair,
embracing many valuable improvements, and will ac-
commodate 250 Guests. BARNUM & CO.

American Hotel,
Pratt street, opposite the Railroad Depot,
BALTIMORE.
HENRY M. SMITH..... Proprietor.
Late of the Exchange & St. Charles Hotels, Pittsburg

Washington Hotel,

BY JOHN GILMAN,
\$1 Per Day.
No. 206 Pratt street, (near the Depot),
BALTIMORE.

GUY'S
United States Hotel,
(Opposite Pratt street Railroad Depot),
BALTIMORE.

JOHN GUY. WILLIAM GUY.

DUNLAP'S HOTEL,
On the European Plan,
NO. 135 FULTON STREET,
Between Broadway and Nassau St.,
NEW YORK.

JONES' HOTEL,
NO. 152 CHESTNUT STREET,
PHILADELPHIA.
BRIDGES & WEST, Proprietors.

Fountain Hotel,
LIGHT STREET, BALTIMORE,
HURSTON..... Proprietor.

BUSINESS CARDS.

Walter R. Johnson,
CIVIL AND MINING ENGINEER AND AT-
torney for Patents. Office and Laboratory, F St.,
opposite the Patent office, Washington, D. C.

Lithography.
JOHN P. HALL & CO.,
161 Main st., Buffalo, (Commercial Advertiser Build.)

Are prepared to execute all kinds of Lithography
in good style and at reasonable rates. Particular at-
tention will be paid to Engraving Railroad Maps, En-
gineer's Plans and drafts, etc., and orders in this line
are respectfully solicited.

Cumberland, (Md.,) Coals for
Steaming, etc.
ORDERS RECEIVED FOR AND FILLED
by J. COWLES, 27 Wall St., N. Y.

J. & L. Tuckerman,
IRON COMMISSION MERCHANTS,
AND MANUFACTURERS OF
ULSTER BAR & POUGHKEEPSIE PIG IRON,
69 WEST STREET,
NEW YORK

Henry I. Ibbotson,
IMPORTER of Sheffield and Birmingham Goods.
Also, Agent for the Manufacture of Telegraph
Wire. 218 PEARL ST., NEW YORK.

Charles T. Jackson, M. D.,
STATE ASSAYER, late Geologist to Maine, Rhode
Island, New Hampshire, and the United States,
offers his services to his friends and the public in mak-
ing any Chemical, Mineralogical or Geological re-
searches that may be required for the improvement of
Agriculture and the Manufacturing Arts. Particular
attention will be paid to the exploration of mines and
to assaying of ores of the metals.
State Assayer's office, 31 Somerset st.
Boston Sept. 3, 1850.

STEEL AND FILES.

R. S. Stenton,
20 CLIFF STREET, NEW YORK,
AGENT FOR

J. & RILEY CARR,
BAILEY-LANE WORKS, SHEFFIELD,
Manufacturers of Cast, Shear, German, Blister, and
Spring Steel,
Of all descriptions, Warranted Good.
FILES.

Manufacturers of Machinists' Warranted Best Cast
Steel Files, expressly for working upon Iron and Steel,
made very heavy for recutting.
A full Stock of Steel and Files at all times on
hand. 6m4

Dudley B. Fuller & Co.,
IRON COMMISSION MERCHANTS,
No. 139 GREENWICH STREET,
NEW YORK.

Manning & Lee,
GENERAL COMMISSION MERCHANTS,
NO. 51 EXCHANGE PLACE,
BALTIMORE.

Agents for Avalon Railroad Iron and Nail Works,
Maryland Mining Company's Cumberland Coal 'CED'
—'Potomac' and other good brands of Pig Iron.

Samuel Kimber & Co.,
COMMISSION MERCHANTS
WILLOW ST. WHARVES, PHILADELPHIA.
AGENTS for the sale of Charcoal and Anthracite
Pig Iron, Hammered Railroad Car and Locomo-
tive Axles, Force Pumps of the most approved con-
struction for Railroad Water Stations and Hydraulic
Rams, etc., etc.
July, 27, 1849.

James Herron, Civil Engineer,
OF THE UNITED STATES NAVY YARD,
PENSACOLA, FLORIDA.,
PATENTEE OF THE
HERRON RAILWAY TRACK.
Models of this Track, on the most improved plane,
may be seen at the Engineer's office of the New York
and Erie Railroad.

PLUSHES

FOR
Railway Cars & Omnibuses.
F. S. & S. A. MARTINE,
112 WILLIAM ST., NEAR JOHN.

ARE now receiving a large and complete assort-
ment of Plain and Figured PLUSHES, of their
own importation, which will be sold at the lowest
market price, viz: Crimson, Maroon, Scarlet, Green,
Blue, Purple, etc.

ALSO—CURLED HAIR, the best manufactured
in market.

Manufacture of Patent Wire
ROPE AND CABLES,
For Inclined Planes, Suspension Bridges, Standing
Rigging, Mines, Cranes, Derrick, Tillers, &c., by
JOHN A. ROEBLING, Civil Engineer,
TRENTON, N. J.

FORGING.

Ranstead, Dearborn & Co.,
MANUFACTURERS OF
LOCOMOTIVE CRANKS AND CAR AXLES,
ALSO
WROUGHT IRON SHAFITING,
And All Kinds of Hammered Shapes.
Office 25 Foster's Wharf, Boston.

Samuel D. Willmott,
MERCHANT, AND MANUFACTURER OF
CAST STEEL WARRANTED SAWS,
—AND FILES—
IMPORTER OF THE
GENUINE WICKESRLY GRINDSTONES
NO. 8 LIBERTY STREET,
NEW YORK.

Railroad Instruments.

THEODOLITES, TRANSIT COMPASSES,
and Levels, with Fraunhoffer's Munich Glasses,
Surveyor's Compasses, Chains, Drawing Instru-
ments, Barometers, etc., all of the best quality and
workmanship, for sale at unusually low prices, by
E. & G. W. BLUNT,
No. 179 Water St., cor. Burling Slip.
New York, May 19, 1849.

Knox & Shain,

MANUFACTURERS OF
LEVELS, TRANSITS AND SURVEYING
COMPASSES.
No 72 Dock st. first door south of Walnut, west side,
PHILADELPHIA.

IRON.

Iron.

Pig Iron, Anthracite and Charcoal; Boiler and Flue
Iron, Spring and Blistered Steel, Nail Rods, Best Re-
fined Bar Iron, Railroad Iron, Car Axles, Nails, Stove
Castings, Cast Iron Pipes of all sizes, Railway Chairs
of approved patterns' for sale by
COLEMAN, KELTON & CAMBELL,
109 N. Water St., Philadelphia.

Iron Store.

THE Subscribers, having the selling agency of the
following named Rolling Mills, viz: Norristown,
Rough and Ready, Kensington, Triadelphia, Potts-
grove and Thorndale, can supply Railroad Companies,
Merchants and others, at the wholesale mill prices for
bars of all sizes, sheets cut to order as large as 58 in.
diameter; Railroad Iron, domestic and foreign; Loco-
motive tire welded to given size; Chairs and Spikes;
Iron for shafting; locomotive and general machinery
purposes; Cast, Shear, Blister and Spring Steel; Boil-
er rivets; Copper; Pig iron, etc., etc.

MORRIS, JONES & CO.,
Iron Merchants,

Schuylkill 7th and Market Sts., Philadelphia.
August 16, 1849. 1v22

Glendon Refined Iron.

Round Iron, Band Iron, Hoop Iron,
Square " Flat " Scroll "
Axles, Locomotive Tires,
Manufactured at the Glendon Mills, East Boston, for
sale by GEORGE GARDNER & CO.,
5 Liberty Square, Boston, Mass.
Sept. 15, 1849. 3m37

Bowling Iron. Stamped B.O.

Railway Tire Bars
Locomotive and other Axles
Boiler Plates
Rivet Iron
Locomotive Frame do
Bars.

and every other description of this superior Iron.
The subscribers, agents for the sale of Bowling Iron, are prepared to execute orders for importation, especially for railway and machinery uses, with despatch from the manufacturers.

RAYMOND & FULLERTON, 45 Cliff st.

**Ibbotson, Brothers & Co's
CELEBRATED CAST STEEL**

AND

Best Cast Steel Royal Improved Files, well known as better adapted for Engineers' and Machinists' purposes than any now in use in the United States.

Every description of Square, Octagon, Flat and Round Cast Steel, Sheet, Shovel and Railway Spring Steel, etc., and Steel to order for any purposes—manufactured at their works in Sheffield—and universally known by the old stamp "Globe."

HENRY I. IBBOTSON, Agent,
218 Pearl st., New York.

**Smith & Tyson,
IRON COMMISSION MERCHANTS,
BALTIMORE.**

REFINED Juniata Charcoal Billet Iron for Wire.
Do. for Bridging, of great strength.
Flat Rock, Boiler and Flue Iron, rolled to pattern.
Kiln, Wheel Iron of great strength and superior chiling properties. Elba Forge Iron, American Shot Iron, Cut Nails, Spikes and Brads, Nail and Spike rods, Railroad Spikes of superior quality, Wrought Chair plates of any pattern, punched or plain.

**WILLIAM JESSOP & SONS'
CELEBRATED CAST-STEEL.**

The subscribers have on hand, and are constantly receiving from their manufactory,

PARK WORKS, SHEFFIELD,

Double Refined Cast Steel—square, flat and octagon.
Best warranted Cast Steel—square, flat and octagon.
Best double and single Shear Steel—warranted.
Machinery Steel—round.

Best and 2d gy. Sheet Steel—for saws and other purposes.

German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.

Genuine "Sykes," L Blister Steel.
Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms by

WM. JESSOP & SONS,
91 John street, New York.

Also by their Agents—

Curtis & Hand, 47 Commerce street, Philadelphia.
Alex'r Fullerton & Co., 119 Milk street, Boston.
Stickney & Beatty, South Charles street, Baltimore.
May 6, 1848.

Railroad Iron.

B. O. Railway Tires, Railway Wheels,
Scotch Pig Iron, Tin Plates and Banca Tin,
Muntz Patent Metal Sheathing,
Baltimore Copper.

Contracts for Rail's made on behalf of the manufacturers, for delivery at any ports in the United States, at fixed prices.

Bowling Tires and Tire Bars and Scotch Pigs imported to order.

Muntz's Ship-sheathing, and a general stock of Tin Plates and Banca Tin in store, and for sale by
RAYMOND & FULLERTON, 45 Cliff st.

IRONDALE PIG METAL, MANUFACTURED
and for sale by the Bloomsburg Railroad Iron Co.
LINDLEY FISHER, Treasurer.
75 N. Water St., Philadelphia.

Car Wheel Iron.

THE celebrated cold blast "Conowingo" Pig Iron, for Railroad Wheels, Chilled Rolls, etc., for sale by
E. PRATT & BROTHER,
Baltimore, Md.

Railroad Iron.

3,000 TONS C. L. MAKE 63½ lbs. per yard,
now landing and to arrive.

Also contracts made for future delivery of above superior make English Iron.

300 Tons Banks Best Iron, Round, Square and Flat.

200 " English Bar " " " "

10 " 9-16 Square Iron for Railroad Spikes.
For sale in lots to suit purchasers by
DAVID W. WETMORE.

New York, March 26, 1850. 3m

**PATENT EXCELSIOR SPRING
for Railroad Cars, Locomotives, etc.**

No. 1.—At Rest.



No. 2.—Under Heavy Pressure.



No. 3.



THESE Springs are composed of a Plate of Steel with Oak or Ash Wood, firmly riveted thereto, having saw kerfs in which are inserted flat plates of metal. The Spring is very powerful and yet sensitive. They are now being manufactured and sold by the Excelsior Spring Company, under a Patent granted on 20th May, 1851.

The above Drawing, No. 1, represents a side view of the Spring when it is at rest. No. 2, shows the same when under heavy pressure. No. 3, represents a Spring having only two plates instead of the usual number inserted in the wood.

This is undoubtedly the best Spring of the day—it is very simple—easy of application—light—cannot get out of order—and it is without any exception the most adjustable spring now made—for it will spring fifty

or five thousand pounds with the same ease.

The cost of the springs is very much less than that of any other.

The Excelsior Spring Co., determined that every spring shall be of the best quality, have established a Factory, where each spring is made directly under the eye of Mr. Bissell, the inventor—and before a spring is allowed to leave the factory it is subjected to a much severer test than it ever can be when at work. Each Spring is guaranteed to perform the required work.

Any person infringing on this patent will be prosecuted.

Office of EXCELSIOR SPRING COMPANY.
33 Broadway, New York.

June 7, 1851.

Railroad Spikes, Boiler Rivets, etc.

THE Subscribers, Agents for the sale of James S. Spencer's, Jr., Railroad and Boat Spikes, Boiler Rivets, and Wrought Iron Chairs for Railroads, made at his Works near this city, will execute all orders with promptness, despatch, and of the best quality.

ALSO IMPORTERS of English refined and Merchant bar Iron; Extra refined Car and Locomotive Axles (from 3½ to 6½ inches in diameter); B. O. Locomotive Tire (welded by Baldwin). Also, supply Boiler and Flue Iron cut to pattern or otherwise.—Spring, Shear, and Cast Steel, etc., etc., etc.

T. & E. GEORGE.

Philadelphia, November 14, 1850.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract for the delivery of English, Welsh and Scotch Rails, of any pattern and weight, also for every description of English, Welsh, Scotch, and Swedish Iron, Railway Chairs and Spikes, Rivets, Bolts, Nuts, Washers, Chain Cables, Anchors, Tin Plates, German Spelter, Iron Castings, and every description of Machinery.

WILLIAM BIRD & CO.,

Iron and Tin Plate Merchants,

44 Wall st., New York.

And at 5 Martin's Lane, City, London.

and 140 Buchanan st. Glasgow.

July 27th, 1850.

Railroad Iron.

THE "Montour Iron Company" is prepared to execute orders for Rails of the usual patterns and weights, and of any required length not exceeding 30 feet per rail. Apply to

THOS. CHAMBERS, President,
66 Broadway, N. Y.,

Or to the Agents,
CHOUTEAU, MERLE & SANFORD,
NO. 51 New st., New York.

September, 1850.

Railroad Iron.

THE Undersigned, Agents for the Manufacturers, are prepared to contract to deliver free on board at shipping port in England, or at port of discharge in the United States, Rails of superior quality, and of such weight or pattern as may be required.

VOSE, PERKINS & CO.,

74 South St.

New York, June 1, 1851.

Railroad Iron.

1650 Tons, weighing about 61 lbs. per yard, 40 tons, weighing about 52 lbs. per yard, and 825 tons, weighing about 53½ lbs. per yard, of the latest and most approved patterns of T rail, for sale by

BOORMAN, JOHNSTON & CO.,
119 Greenwich street.

New York, Aug. 26, 1850.

N.B.—B., J. & Co are also prepared to take contracts for English rails, delivered in any of the Atlantic ports of the United States.

Tredegear Iron Works.

ROLLING MILL FOUNDRY AND MACHINE SHOPS. The undersigned continues to manufacture at his Works in this city (from best charcoal metal) Bar Iron of every description, embracing—

Rounds and Squares, from ½ to 5 inches diameter.

Flats, from ½ to 7 inches, all thicknesses.

Bands and Scrolls, all sizes. Boiler plate and Plough

Iron. Railroad and Locomotive Axles and Tires. Locomotive Frames, Spikes and Plates. Hoops, Ovals,

Half Ovals, Half Rounds, Angle, T, L, and indeed every

description of Iron usually manufactured, all of

which he warrants to be equal to any made in this

country. He also manufactures at his Foundry and

Machine Shops all descriptions of Railroad Work, say,

Locomotives, Railroad Wheels and Axles complete

and ready for the road, Railroad Chairs, etc. Also,

Marine and Stationary Engines all sizes, Sugar mills

and Engines, Horse mills, and every kind of Machinery

usually required for the operations of the country.

He has paid particular attention to getting up machinery, etc., for Gold Mine operations, and those in want

of such work might find it to their advantage to give him a call.

J. R. ANDERSON.

Richmond, Va., Sept. 10, 1850.

CUT NAILS OF BEST QUALITY, BAR IRON

(including Flat Rails) manufactured and for sale

by

FISHER, MORGAN & CO.,

75 N. Water St., Philadelphia.

TO RAILROAD COMPANIES, CAR MANUFACTURERS, etc.

THE Undersigned hereby gives public notice, that

the Commissioner of Patents, pursuant to his decision in relation thereto, on the 8th day of October,

1850, issued to him a Patent for the sole right to manufacture, and exclusive use of the INDIA RUBBER

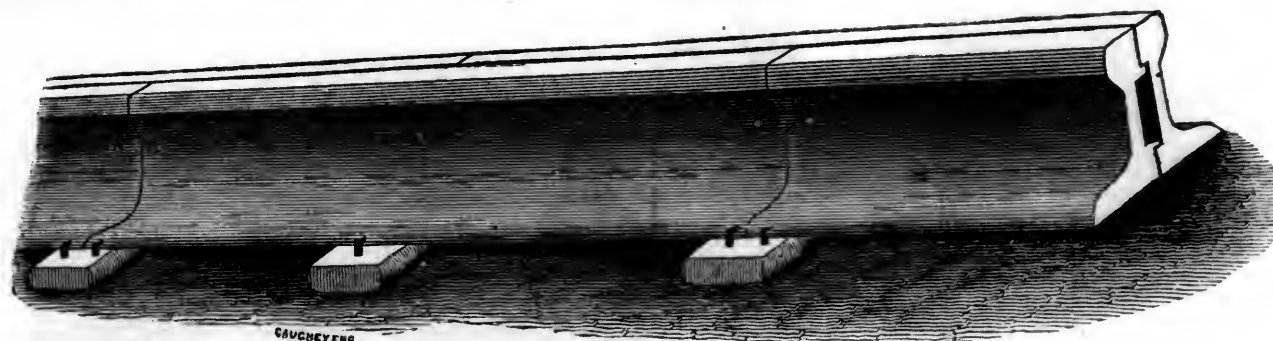
CAR SPRING, on account of priority of invention

of said Spring.

F. M. RAY.

New York, Oct. 23, 1850.

PATENT COMPOUND RAIL.

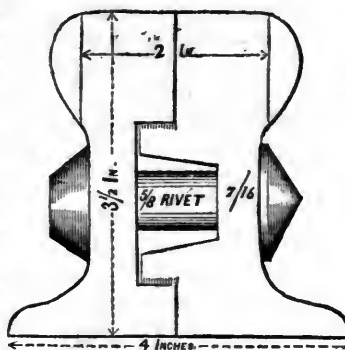


THE UNDERSIGNED NOW OFFER TO THE Railroad Public a new Compound Railroad Bar, which possesses, as they believe, a decided superiority over every kind now in use. The Cuts annexed will give a good idea of the form of the Rail, and the mode of combination.

This Rail has now been in use on the New York and Erie and the Utica and Schenectady Railroads for nearly two years, and has proved itself to be a *durable and continuous* rail, realizing the advantages of a theoretically perfect rail, over the one in common use. We invite the attention of Railroad Companies to a careful examination of the merits of the form now offered.

The advantages of this Rail are: first, it effects a saving of from 25 to 50 per cent. in the wear and tear of the machinery; secondly, it saves to a vastly greater extent in the repairs of track; thirdly, it secures a much higher rate of speed with the same power; and what is of still

N.B.—Patterns of the above rail are placed with Mr. A. V. Winslow, Cincinnati, Ohio, who is authorised to negotiate with parties for the same.



greater importance, it offers complete protection against most of the accidents to which companies are liable. For these reasons, it is believed to be not only the best, but the cheapest rail that can be used. In enumerating its advantages, the proprietors only repeat the statements of competent persons, who have had the best opportunities of judging of its merits.

This improved Rail is now being manufactured at the Works of the Mount Savage Iron Co. in Maryland. Any communications or enquiries addressed to either of the undersigned will receive prompt attention.

J. F. WINSLOW, President,
Troy, N. Y.
ERASTUS CORNING, Albany.
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore.

April 8, 1851.

Faggotted Car and Engine Axles

FORGED by RANSTEAD, DEARBORN & Co., Boston, Mass. These Axles enjoy the highest reputation for excellence, and are all warranted.

Iron Trade of Pennsylvania.

DOCUMENTS and Statistics relating to the Manufacture of Iron in the State of Pennsylvania—giving a history of the manufacture from its commencement to this date, illustrated by diagrams. Also tables giving the address and capacity of every establishment in the State. Prepared by direction of the late convention of the trade held in Philadelphia. For sale by

LINDSAY & BLACKISTON, Philadelphia.
FIELDING LUCUS, Jr., Baltimore.

HENRY G. NICHOLS, 79 Water st., N. Y.
or at this office—price \$1 00.

It will be sent by mail to any order enclosing the money, and post paid.

Ulster Iron.

THE ULSTER IRON WORKS, Saugerties, N. Y., continue in full operation. Orders for round, square, flat, band, hoop and scroll iron, will be received and promptly executed by

J. & L. TUCKERMAN,
69 West St., New York.

India-rubber for Railroad Cos.

RUBBER SPRINGS—Bearing and Puller—Fuller's Patent—Hose from 1 to 12" diameter. Suction Hose. Steam Packing from 1-16 to 2 in thick. Rubber and Gutta Percha Bands. These articles are all warranted to give satisfaction, made under Tyler & Helm's patent, issued January, 1849. No lead used in the composition. Will stand much higher heat than that called "Goodyear's," and is in all respects better than any in use. Proprietors of rail roads do not be overcharged by pretenders.

HORACE H. DAY,
Warehouse 23 Courtlandt street
New York, May 21, 1849.

Railroad Iron.

2000 TONS T RAILS, of desirable pattern, arrived, and to arrive, for sale by
RAYMOND & FULLERTON,
6121 45 Cliff st.

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. J. F. WINSLOW, President
Troy, N. Y.

ERASTUS CORNING, Albany
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md

November 6, 1848.

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phoenix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehanna river; which two establishments are now turning out upwards of 1800 tons of finished rails per month.

Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.

REEVES, BUCK & CO.
45 North Water St. Philadelphia;

March 15, 1849.

LAP—WELDED WROUGHT IRON TUBES

FOR

TUBULAR BOILERS,
FROM ONE AND A QUARTER TO SEVEN
INCHES IN DIAMETER.

THE ONLY Tubes of the same quality and manufacture as those so extensively used in England Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER & SON, Patentees,
28 Platt street, New York.

AMERICAN PIG IRON.

"**POUGHKEEPSIE**" brand, Dutchess Co., N. Y.
"GLENDON" brand, Lehigh county, Pa.
Orders for the above two well known brands will be received, and promptly executed, by
J. & L. TUCKERMAN,
69 West St., New York.

American Cast Steel.

THE ADIRONDAC STEEL MANUFACTURING CO. is now producing, from American iron, at their works at Jersey City, N. J., Cast Steel of extraordinary quality, and is prepared to supply orders for the same at prices below that of the imported article of like quality. Consumers will find it to their interest to give this a trial. Orders for all sizes of hammered cast steel, directed as above, will meet with prompt attention.

May 28, 1849.

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for rail roads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.

JOHN F. WINSLOW, Agent.

Albany Iron and Nail Works, Troy, N. Y.
The above Spikes may be had at factory prices, of Erastus Corning & Co Albany; Merrill & Co., New York; E. Pratt & Broke, Baltimore Md

Stickney & Beatty, DEALERS IN IRON AND IRON MANUFACTURERS.

AGENTS for the Baltimore City Rolling Mill (Works of Messrs. Ellicott) also agents for the sale of the Laurel, Locust Grove and Gunpowder (Balt.) Forge Pig Irons; Hupp's Cold Blast Columbia Wheel Iron, Fort and anti-Eatam Pig Irons. Caledonia, Columbia and Capon Cold Blast Boiler Blooms, warranted; Wm. Jessop & Son's Steel; Old Colony and anti-Eatam Nails; Bar Iron, Boiler Plates, Hoop, Sheet, Oval, Half Oval, Horse Shoe and other Iron. Exchange Place, Baltimore.

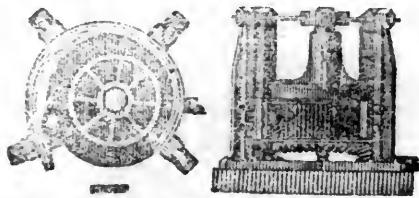
Railroad Iron.

2000 TONS, weighing 53 pounds per lineal yard, of the most approved pattern of T rails, in store and to arrive, for sale by
COLLINS, VOSE & CO.,
74 South St

New York, June 1, 1850.

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phoenixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll sounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y. P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, the exclusive owner of all Henry Burden's Patented Machinery for making Spikes, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

CHILLED RAILROAD WHEELS.—THE UNDERSIGNED are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

Brown's Old Established SCALE WARE HOUSE,
NO. 234 WATER ST., NEW YORK.

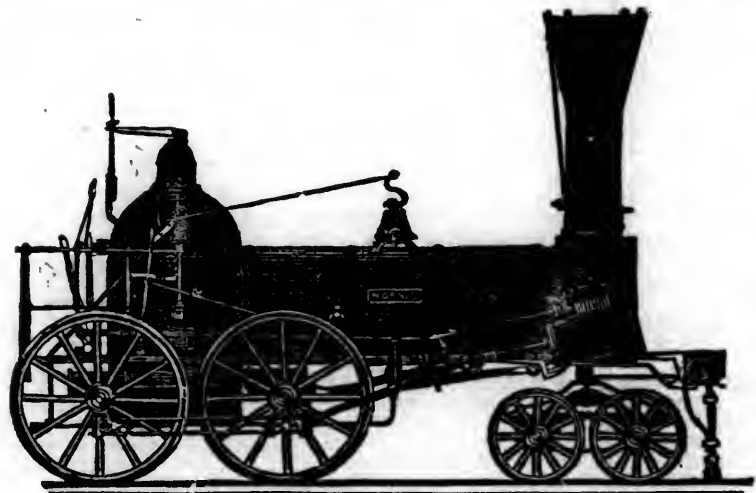
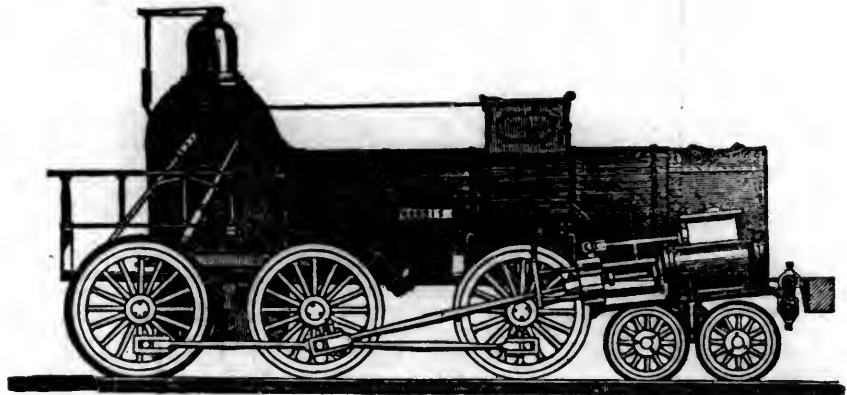
THE Subscriber, Practical Manufacturer of Scales of every description, respectfully asks the attention of Railroad Companies to his Improved Wrought Iron Railroad Track and Depot Scales which for strength, durability, accuracy, convenience in weighing, and beauty of workmanship, are not surpassed by any others in this country.

He is aware that this is rather a bold assertion for him to make, yet he can say with confidence that they have but to be tried to give them precedence over all others.

J. L. BROWN.

Bank Scales made to order, and all Scales of this make Warranted in every particular.

Reference given and required

NORRIS' LOCOMOTIVE WORKS.
BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,

THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size. Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tyres are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS

PATENT MACHINE MADE HORSE-SHOES.

The Troy Iron and Nail Factory have always on hand a general assortment of Horse Shoes, made from Refined American Iron.

Four sizes being made, it will be well for those ordering to remember that the size of the shoe increases as the numbers—No. 1 being the smallest.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

Etna Safety Fuse.

THIS superior article for igniting the charge in wet or dry blasting, made with DUPONT'S best powder, is kept for sale at the office and depot of

REYNOLDS & BROTHER,

Manufacturers of

No. 85 Liberty St.

NEW YORK.

And in the principal cities and towns in the U. States. The Premium of the AMERICAN INSTITUTE was awarded to the Etna Safety Fuse at the late Fair held in this city.

November 3, 1849.

ly

UNION WORKS,

North street, opposite the Railroad Depot,
BALTIMORE.

Poole & Hunt,

Manufacturers of Steam Engines and Mill Gearing, Machinists' Tools, and all kinds of heavy and light Machinery.

Also put up Arrangements of Wrought Iron Pipes for heating buildings and conveying steam or water.

Castings of every kind furnished at short notice.

Every exertion will be made to insure the satisfaction of customers.

Patent Machine Picket Fence

SIX DIFFERENT STYLES of this fence are now made by patent machinery; and is by far the most economical fence for Railroads, Farms, Yards, etc., ever yet offered to the public, costing only from 4 to 30 cents per foot, according to pattern; and is so put up as to be shipped at a trifling expense. Full particulars will be furnished, by addressing the subscriber, to whom all orders should be sent.

N. STRATTON, Troy, N.Y.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 136 NASSAU ST., NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.

SECOND QUARTO SERIES, VOL. VII., No. 29.]

SATURDAY, JULY 19, 1851.

[WHOLE No. 796, VOL. XXIV.

ASSISTANT EDITORS,

J. T. HODGE, *For Mining and Metallurgy.*

GEN. CHAS. T. JAMES, *For Manufactures and the Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & Co., 136 NASSAU ST.

Saturday, July 19, 1851.

European and North American Railway.

We give below a portion of the prospectus of this company, issued on the occasion of opening books for subscription to its stock. There can now be hardly a doubt of the speedy realization of this great work. The scheme is strong in its own merits, and is likely to receive additional strength from the policy of the home government in extending aid to the projected works of the colonies. After raising the expectations of the colonies to the highest pitch, the least holding back on the part of England would peril the relation which now exists between the two. There can now be no other safe movement than an onward one.

The committee of the European and North American railway, in the State of Maine, say that if subscriptions to the amount of \$1,000,000 can be obtained, the early completion of the road can be secured beyond a peradventure.

The system of railroads now in active operation, or in an advanced state of construction, point out the European and North American railroad as a legitimate and appropriate enterprise. "The Portland and Montreal railroad," says the report, far advanced towards completion, and to be opened to Montreal during the coming year, with the railways of New England, secure the convergence of all the lines of railway in the United States and Canada, upon the single trunk railway, which we now propose to extend, from the Kennebec valley to the Atlantic shore of Nova Scotia, and will ensure to this trunk line, when completed, the travel between the two continents, that seeks to abridge the length of passage, and shorten the sea voyage between Europe and America."

While claiming for this line all the advantages proposed, for shortening the transit between Europe and America, reducing the length of passage to five or six days' time, it has claims on the business men of the British Provinces and the northern States of the Union, as a means of increasing trade, stimulating enterprise, and augmenting the productions of the region of country through which it is to pass. We concur in the opinion expressed by the Portland Convention.

"That from the valley of the Kennebec in Maine to the eastern terminus on the Atlantic coast of Nova Scotia, the proposed line of railway will traverse a country abounding in natural resources and possessing all the elements of wealth and commercial greatness in an unusual degree; that although now sparsely populated, this line of country, under railway influence, will soon become densely peopled, and every species of industry will be called into existence among its inhabitants."

Since the separation of the Portland Convention all the opinions expressed by that body, have been abundantly confirmed by various public bodies and the press generally in Europe and America, and by the more matured opinions of an Engineer of the highest authority, as to the practicability and paying qualities of the line. Upon these grounds alone, we may confidently appeal to the commercial world for support. We believe that in order to justify us in expecting its entire success, it is enough to say that it is proposed to extend a line of railway through a region of country rich in every natural advantage—forests, soil, climate and mineral wealth,—over a route the most direct and practicable that can be ascertained, irrespective of intermediate localities, remote from water communication,—giving it perfect immunity from all competition forever, by securing the most direct possible line, between the great centre of population and business.

In further confirmation of these views, we refer to the very able report of A. C. Morton, Esq., upon

the whole line, submitted to the Governor of Maine and made under the authority of the State.

The length of line, from the Kennebec River to Halifax is 475 miles. It is proposed to build this line in separate sections, all parts of the work being kept in subordination to one general plan, so that an unbroken line of railway shall connect Halifax, Nova Scotia, or whatever Eastern port is adopted, with all the railways of Canada and the United States.

From Waterville to Bangor, the distance of 55 miles, the means required will unquestionably be furnished by the guarantee of the railway companies, connecting Waterville with the railways extending from that point toward Boston.

From Bangor to the Boundary of New Brunswick, a distance of 96 miles, the Charter of the European and North American Railway, under which we are now acting, authorizes the construction of a line of railway on the most direct and practicable route to the city of St. John, New Brunswick. It is for this portion of the line that we now invite subscriptions.

The Province of New Brunswick, by an Act passed on the 15th of March, 1851, incorporated a Company under the name of the European and North American railway company, for the purpose of making a railway, which in section 3 is described as "A railway to run from some point or place from the Eastern boundary of this Province in the county of Westmorland, so as best to connect with a railway to be constructed from the city of Halifax or some other port on the Eastern coast of the Province of Nova Scotia on the Atlantic Ocean, over the most practicable route through the Province of New Brunswick, so as best to connect with a railway to be constructed from the city of Bangor in the United States of America to the Eastern part of the State of Maine."

This Charter is of the most liberal character, and while the British Ministry request certain modifications of the charter, of a character in no respect objectionable to the company, a recent Despatch of Earl Grey, under date of June 12, 1851, contains an assurance of its approval;—so that the requisite authority is now obtained for the construction, by a private company, of a continuous line of railway from the city of Bangor to the boundary of Nova Scotia.

Of this distance, all that portion of the route from St. John, East, contains ample means along its line to construct a railway, and resources, population, and business adequate to support such a line, whenever completed.

It is the distance from Bangor to the city of St. Johns that requires our principal exertions. From St. John to the boundary of Maine the 73 miles required to form this connection, will have ample means furnished by the people of St. John city and New Brunswick, as soon as the Facility Bills receive the royal assent. By these Bills, New Brunswick offers to grant assistance by a subscription to

the Stock of the company, to an amount equal to \$1,250,000 from time to time in sums of \$50,000 each, on the payment of equal sums by the shareholders in said Company; and a gift of all the ungranted crown lands contiguous to and within five miles of each side of the lines of said railway.

This assistance from the Province of New Brunswick, will at once command the means to build the line from the boundary of Maine to St. John city, even if no further or other assistance is afforded by the Colonial or Imperial Governments.

But it is known that the British Ministry have proffered assistance to the North American Provinces, to an amount sufficient to provide "for the construction of a railway, by which a line of communication may be established on British Territory, between the Provinces of Nova Scotia, New Brunswick, and Canada, * * from Halifax to Quebec or Montreal." The Hon. Mr. Hawes, under Secretary of the Colonial office, says "it is also to be understood that Her Majesty's Government will by no means object to its forming part of the plan which may be determined upon, that it should include a provision for establishing a communication between the projected railway and the railways of the United States."

The Hon. Jos. Howe, the able and distinguished delegate from the Province of Nova Scotia, through whose agency and by whose exertions these pledges have been obtained, informs us that the British Ministry estimate the amount required to carry out these two works, at seven million pounds sterling, or \$35,000,000. The condition on which this grant is to be made is, "that the Provinces shall make the loans they are to raise a first charge upon the Provincial Revenue, after any existing debts and payments, on account of the Civil Lists, settled on Her Majesty by laws now in force."

The acceptance of the money on this condition is a matter still in question; but whether the same is accepted or not, no delay need occur in pressing forward our line to a point of connection at the boundary of New Brunswick. That in some mode or other, most agreeable to themselves, the Provinces of New Brunswick and Nova Scotia will carry out the plan of a continuous line of railway, from the boundary of Maine to the eastern shore of Nova Scotia, no longer admits of a question. Such portion of the railway despatches from the British Government as may be required to a full understanding of the question, are hereafter given in the Appendix. It may be proper in this connection to remark, that negotiations are on foot, with a view to obtain further assistance from the British Government in aid of railways in Canada, by securing the Imperial guarantee, or an advance from the Imperial Treasury, of the money required to construct the Grand Trunk Line of Canada, from Montreal to Sandwich, opposite Detroit, in addition to the amount already offered. From Sandwich to Halifax the distance is equal to 1400 miles, which distance, with the European and North American railway across New Brunswick, would require an advance from the Imperial Treasury of over \$50,000,000.

Assuming the early completion of that portion of the European and North American railway which belongs to New Brunswick and Nova Scotia, their inquiry arises, can that portion of the line which is situated in the United States be constructed?

From the eastern terminus of the lines extending from New Brunswick, at Calais, the distance is 151 miles. To extend this line as far as Bangor, requires the absorption of all the means of the people of Maine, west of the Penobscot river, which can be made available to such an enterprise. Still we regard that portion of the work as coming within the ability of the people of Maine to accomplish, and our exertions are directed to the task of obtaining the means for extending this line from Bangor to the Boundary of New Brunswick. The amount required to finish and complete this 96 miles is entirely beyond the ability of the people of Maine, east of Penobscot river to supply.

There are some disadvantages in reference to the construction of this portion of the line, from the fact that some 60 miles of the distance is a wilderness, and though favorable for the construction of a road, and full of valuable forests of timber and abundant water power, which will furnish a large

amount of business to a railway when built, cannot contribute any considerable amount towards its construction. Mr. Morton estimates that the entire line from Bangor to Calais can be built and equipped as a first rate road for about \$28,000 per mile, or something over \$2,500,000.

Without enlarging upon the question of the practicability and advantages of the European and North American railway, we refer parties seeking information to the celebrated report of Mr. Morton. But to give in the briefest terms a summary, showing the extent of the proposed line, the feasibility of its construction in the favorable features of the country over which it is to pass, and its remunerative character when completed, we subjoin the following extracts from the report of Mr. Morton:—

"The general results of the surveys show,

1st. That a highly feasible route can be obtained between the city of Bangor and the city of St. John, upon which the distance will not exceed 168.5 miles, with a strong probability of its being reduced on a final location to 160 or 165 miles.

2d. That the greatest elevation above tide, to be crossed, will not probably exceed 350 feet, which is within the limits of Maine, and that the maximum grade will not exceed 50 feet per mile, and may probably be reduced to 40 or 45 feet per mile.

3d. That there will be very little if any abrupt curvature, no points requiring excessive expenditure, and the cost per mile will fall below that of the average of the New England roads."

"With this we are enabled to make up the length of that portion of the European and North American railway, within the limits of New Brunswick.

From the boundary line of the United States, at Calais, to the city of St. John 73, miles.

From the city of St. John to the boundary line of Nova Scotia, near Bay Verte 126 miles.

Total 199 miles

The length of road to be built in New Brunswick, will not probably, at most, exceed 200 miles, and there are strong grounds to believe that it may be reduced to 195 miles."

"The total length of line in Nova Scotia is 124 miles, of which distance the road for 66 miles will be level, or of grades not exceeding 20 feet per mile.

44 miles will have grades of from 20 to 40 feet per mile.

10 miles will have grades of 57 feet per mile.

4 miles will have grades of 66 feet per mile.

From the above, it will be observed that for one half of the whole distance in Nova Scotia, the road will be either level or have inclinations under 20 feet per mile, and nearly 85 per cent. of the whole distance is less than 40 feet per mile."

"The following summary shows the length of road to be built in the state of Maine, in New Brunswick, and in Nova Scotia.

Maine, (omitting fractions) 96 miles.
New Brunswick 200 miles.
Nova Scotia 124 miles.

Giving 420 miles

as the total length of the European and North American railway.

From the surveys made of the various portions, I can state with much confidence that, of the 420 miles of railway, there will be over 350 miles upon which the grades will not exceed 30 feet per mile, and for over 100 miles of this latter distance, the road will be level. The maximum grade, with the exception of one point, will probably not exceed 50 feet per mile, with comparatively a short distance of this inclination.

The portion of the line where the grades exceed this, is confined to a distance of about 12 miles, in crossing the Cobequid Hills in Nova Scotia. These inclinations probably will not rise higher than from 50 to 60 feet per mile, and of the latter gradient there need not be more than five or six miles.

The greatest elevation passed over in the 420 miles is also at the Cobequid Hills, which is 600 feet: the greatest in New Brunswick probably will not exceed 250 feet, and that in Maine 300 feet above the ocean.

It is a fact worthy of notice, that this great work throughout its whole extent of over 400 miles, tra-

versing a country, the most prominent characteristics of which are its numerous large rivers, lakes and inlets, that at no point is it interrupted by terraces, nor are the difficulties encountered or expenditures required in the construction of bridges and other works, at all corresponding with the magnitude of the rivers to be crossed, and the objects to be attained.

This peculiarity, together with the great extent of line which may be constructed at a low rate, will tend to reduce the average cost of the whole work to a sum considerable below most of the great lines of the United States."

"Bringing the various items of business together, as hereinbefore set forth, we have the following estimate of the probable annual receipts of the proposed railway:—

1,073,000 inhabitants, estimated to pay the railway one half the amount shown in the preceding table or \$1.50 for each inhabitant \$1,609,500

35 steamer passengers each way over the railway at 2½ cents per mile, or \$10.50 each 220,320

Transportation of mails, \$300 per mile per annum 126,000

Total annual estimated receipts \$1,964,820

Deduct 50 per cent. for expenses of operating the road 982,410

Estimated net receipts \$982,410

Which is over 74 per cent. on \$12,600,000, the estimated cost of the railway."

The railway from Bangor to Oldtown, 11 miles at one end, and from Calais to Baring, 6 miles at the other, making a total of 17 miles of road built, may perhaps be brought into use as portions of the line, reducing the actual distance required to be constructed to less than 80 miles, and reducing the cost to only a trifle above 2,000,000 of dollars.

The plan is to raise one million of dollars, the amount required by law to enable the company to organize; and then secure the right of way, commence operations at each end, and lay the foundation for a credit, which will secure the balance.

The Commonwealth of Massachusetts has expressed her interest in the scheme, and from the fact of her owning nearly two millions of acres of land in Maine, it is expected that she will in some form supply a portion of the means. The application to the Legislature of Massachusetts was made at such a late period of the session, that it was deemed advisable by its friends, to have it referred to the next Legislature, when it is hoped it will be favorably considered.

The opinion is confidently expressed that if the amount required to commence, one million of dollars of available stock, be obtained, the early and complete success of this great enterprise will be rendered certain.

Any further information in relation to this scheme, may be had on application to J. A. Poor of Portland, Elijah L. Hamlin of Bangor, and A. G. Chandler of Calais, committee of the corporators.

Tennessee.

Completion of the Railroad to Murfreesboro'.—The cars are now running regularly between Nashville and Murfreesboro'—leaving this city every morning at eight o'clock, and Murfreesboro' at five o'clock in the evening. To the President, V. K. Stevenson, Esq., too much credit cannot be given for the energy, enterprise, and enthusiasm with which he has prosecuted the work of the Nashville and Chattanooga Railroad from the day he took hold of it. By the first of November it is confidently expected, that the cars will be running as far as the intersection of the Shelbyville Branch in Bedford county. We hope and believe that it will not be more than eighteen months before the road is completed to Chattanooga—"a consummation most devoutly to be wished."—*Nashville Union*.

Railroad Celebration in St. Louis.

The citizens of St. Louis and its vicinity celebrated the 4th of July by the commencement of work on the great Pacific railroad. As this is the most engrossing subject in that state, the occasion called together a vast crowd. The ceremony of breaking ground was preceded by a speech of Thomas Allen Esq., President of the road, who commenced by alluding to the advantages of railroads in general—to the rapid strides made by the world since their introduction, and to the power of the railroad as a social and moral agent, in awakening the energies of a people, in stimulating industry, in diffusing and increasing wealth, intelligence and domestic comfort, and all the blessings of civilization. He showed what a potent influence had been exerted in those states where this labor-saving machine had been introduced for transportation, and said that Missouri wanted the same mighty lever, more potent than any Archimedes ever dreamed of, to enable her to maintain her relative rank among the advancing states of the union; to invite new settlers to come and occupy her vacant lands; to stimulate industry, and unlock those mineral treasures which were scattered in such profusion throughout her domain. After giving some detail of the preliminary surveys of the road, and the probable cost of its construction, which facts have already been published in this journal, the speaker said:—

One of the first effects of the railroad will be, if you will allow me to speak of them in this connexion, increased prices of real estate, superinduced, of course, by the expectation of a demand from new settlers. This effect is already experienced. It is inevitable. And if, on the completion of the road, we were able to deduct from its cost the enhanced value of land, we should find our road costing more than 200 per cent. less than nothing!

Another important effect will be, increased prices to the producer, and diminished prices to the consumer of all farm produce. These will be proportioned to the reduction of the cost of transportation. That reduction of the cost of transportation would present the interest of a new capital that would be given to the country. The aggregate enhanced value given to agricultural produce in the hands of the producer, would in a few years pay the whole cost of the road.

After adverting to the success of various other railroad enterprises, commenced under more discouraging circumstances, and giving a sketch of what was proposed by the company, he closed with the following eloquent strain:—

It is with these lights before us, and under the circumstances, and with the hopes and prospects I have alluded to, that we have deemed it proper to make a commencement of the work of construction upon the Pacific railroad. It is for this purpose that we have assembled here to-day, on this Fourth of July, A. D., 1851, to raise the first spadeful of earth in the graduation of that road. And though the idea may be deemed remote, yet may we not hope that the spadeful put into the work to-day, here upon the bank of the Mississippi, may not grow rusty until they have been finally burntish, in the graduation of the last division of our road, through the golden sand of the Pacific shore!

This was followed by the address of Hon. Edward Bates, the orator of the day, which is spoken of as being an eloquent and patriotic speech, peculiarly appropriate to the occasion.

The Governor of the state being detained at home by illness, the ceremony of breaking ground was performed by the Mayor of St. Louis, amidst the loud acclamations of the crowd, who upon the conclusion of the proceedings, dispersed in excellent spirits. No incident occurred to mar the felicity of the occasion, and we may hope that an enterprise thus auspiciously commenced on the nation's

natal day, will be carried forward by the united hearts and hands of the people to an early completion.

Progress of the United States.

We copy the following statistics from the recent speech of Mr. Webster, delivered on the occasion of laying the corner stone of the Washington monument. They were undoubtedly prepared with great care, and are well worth preserving for future reference:—

	1793.	1851.
Number of States.....	15	31
Representatives and Senators in Congress.....	135	295
Population of the U. S.	3,929,338	23,267,498
Population of Boston.....	18,038	136,871
Population of Baltimore....	13,503	169,054
Population of Philadelphia	42,520	409,045
Population of New York (city)	33,121	515,507
Population of Washington	4,000	40,075
Population of Richmond..	4,000	27,582
Population of Charleston.	16,359	42,983
Amount of receipts into the Treasury.....	\$5,720,624	\$43,774,848
Amount of expenditures of The United States.....	7,529,575	39,355,268
Amount of imports	31,000,000	178,138,318
Amount of exports	26,109,000	151,898,720
Amount of tonnage	520,764	3,535,454
Area of the United States in square miles.....	805,461	3,314,365
Rank and file of the army	5,120	10,000
Militia, (enrolled)		2,006,456
Navy of the United States (vessels)	(none)	76
Navy armament (ordnance)		2,012
Treaties and conventions with foreign powers....	9	90
Light houses & light boats	12	37
Expenditures for do.....	12,061	529,265
Area of the first capital building, (square feet)...	14,641	
Area of the present capitol, including extension....		44 acres.
Lines of railroads in miles.		8,500
Lines of telegraph.....		15,000
Number of post-offices....	209	21,551
Num. of miles of post route	5,642	178,762
Amount of revenue from post offices.....	\$104,747	\$5,592,971
Amount of expenditure of post office department....	72,040	5,212,958
Number of miles mail transportation		46,541,423
Number of Colleges.....	19	121
Public libraries.....	35	694
Volumes in do.....	75,000	2,201,632
School libraries.....		10,000
Volumes in do.....		2,000,000

Revolution on the Isthmus.

Return of the Tehuantepec Expedition.—The schooner P.M. Sears, Capt. Graham, arrived on Sunday morning from Minatitlan, having on board the following members of the Tehuantepec Surveying Commission,—J. J. Williams, principal assistant Engineer; J. C. Avery, first assistant engineer; J. Mcf. Murphy, U. S. N., hydrographic assistant; W. L. Miller, C. C. Smith, J. M. Mercer, Jos. H. Bradley, jr., J. Johns, Wm. A. Coburn, and L. M. Davidson, assistant engineers; also, M. Muller, draughtsman, and T. C. James and Geo. Evans, together with a number of axemen and employees of the company.

Major Barnard was still at El Barrio, waiting the arrival of Mr. Sidell, with whom, as associate engineer, he was to visit the several passes and prominent points previous to returning. Mr. J. B. F. Davidge, with a small party, was left to make reconnaissances, and run a line of levels from the confluence of the streams entering on the west bank of the Coatzacoalcas, back to the experimental line. Mr. Wm. B. Williams, and a party of four, were also left to run a line through from the Jamaupa to the Chivela Pass, with a view to the construction of a carriage road.—New Orleans Picayune.

Mining in Great Britain.—No. 1.

The mines in Cornwall, the great mining district of England, are generally worked by a company of proprietors, who agree with the owner of the soil for a certain number of years, paying either a fixed per centage, or a certain proportion of the ores raised, being 1-15th, 1-18th, or 1-20th, as may be agreed upon. The grant thus made is called a *sett*. In commencing a mine from the surface, the first thing is to ascertain as far as possible, the situation and direction of the lodes, or veins of ore; this is generally done by digging pits in different parts of the sett. By this means the best situation is found for sinking the shaft, so as to take the lode at a certain depth. The shaft is generally sunk about twenty or thirty fathoms, according to the nature of the ground, when a horizontal level or gallery, called an *adit*, is driven east and west, for the purpose of ventilating the mine, and for drawing off the water as the shaft gets deeper. At every ten fathoms the shaft is sunk, similar levels to the adit are driven east and west; these levels being again subdivided by small winzes, of about ten fathoms in height, and sixteen fathoms apart, the mine becomes finally divided into pitches. The engine shaft is always sunk to a greater depth than the lowest level, in order to keep the working shaft free from water. The object of the shaft and levels is to get at the ores and to put the lode into such a state that it may be conveniently worked by a number of men. The ore, when broken from the lode, is wheeled in barrows along the levels to the shaft, and then drawn to the surface by an engine; and the winzes, besides forming communications from one level to another, also serve to ventilate the mine. The shaft is generally timbered for 30 fathoms in depth, and sometimes the whole way, depending on the nature of the ground; the timber used is Norway pine, and it is estimated that £50,000 worth is annually used in the mines. The levels are generally three feet wide, and six or seven feet high.

The great Cornish adit, which was commenced in the year 1748, is one of the most extensive mines in the world. The total extent of its ramifications is estimated to exceed thirty-five miles. In the shallowest part it is not more than twelve or fourteen fathoms deep; while in one instance, at Wheal Hope, it is seventy fathoms below the surface; its average depth may probably be from thirty-five to forty three fathoms.

The following extract will give a good idea of the nature of the various veins and lodes, with the names usually applied to them by miners:—

Most rocks are traversed by fissures, and which, when they contain minerals, are called *veins, lodes, or courses*. In regard to accurately describing them, Mr. Carne has determined—By a *lode* is meant a metalliferous vein. By *east and west lodes*, metalliferous veins whose direction is not more than 30° from these points. By *caunter lodes*, metalliferous veins whose directions are from 30° to 60° from east and west. By *cross-courses*, veins whose direction is not more than 30° from north and south. By *flookan veins*, veins of whitish or greenish clay, generally argillaceous. By *cross flookans*, veins of this clay having the same direction as the cross-courses. By *slides*, veins of slimy clay, greatly inclined, having generally an east and west, and rarely a north and south direction. The metal contained in these veins is generally found combined with other substances, and is, therefore, called *ore*. Veins or lodes run to a considerable extent, sometimes for several miles, and have in no instance, been followed to an actual termination, being always relinquished when no longer worth working; their direction or dip, downwards generally forms an angle of 70° or 80°.

If a lode continues in a straight line, it is called a regular lode—it it occasionally swells and contracts, an irregular lode, or a pipe vein; the wider parts are called *bunches*; and when it divides into branches it is said to *take horse*, or come into dead ground, leaving a branch of ore on either side.—When a vein *takes horse*, it is generally considered a good indication, for (as the miners say) at the tail of the horse, there are generally some rich bunches of ore. Sometimes, a vein called a *cross course*, interferences, and *heaves* the regular lodes, from 2 feet to 50 fathoms, out of its course; or it becomes reduced to mere thread, and reappears at a distance. A cross lode in Wheal Peever, about three miles east of Redruth, extends from sea to sea. On its west side every vein it passes is heaved 50 fathoms further north from the line it would have otherwise pursued, and which the other part still keeps. It was not until after a search during 40 years, that this heaved lode was discovered; for, until mining became so general, the heave of a lode by a cross course greatly puzzled the miners. At present, they find little difficulty on such occasions, as even when an individual case furnishes no means of ascertaining the direction in which the lode has been heaved, they have in almost every part of the mining districts, precedents by which they are enabled to form a tolerably correct judgment on the subject.

The most abundant substance in veins is crystallised spar, termed veinstone, or the leader of the lode; the veins are distinguished by names, according to the nature of the veinstones. The following are the principal:—1. *Gossan*, when the veinstone is clay, mixed with silica, and oxide of iron. Its color varies from light yellow to deep brown. This is the most common veinstone, and is considered as promising, both for copper and tin. 2. *Spar*, when quartz predominates; it is rather unpromising. 3. *Mundic*, when iron pyrites abounds; it is considered as rather promising. 4. *Peachy*, when the veinstone is chlorite; it is more promising for tin and copper. 5. *Flookany*, when one or both of its sides is lined with bluish white clay. 6. *Capely*, when the veinstone is a hard substance of a greenish or brownish color, chiefly a mixture of chlorite and quartz; tin is found in it, but seldom copper. 7. *Prairie*, when the ore is found in detached lumps. 8. When a vein abounds in blende it is called a *black jack lode*; when it contains granite it is called a *granite lode*. Tin and copper lodes generally run east and west, and lead lodes north and south. The veins in Cornwall have no determinate size, being sometimes very narrow, or exceeding several fathoms in width; extending sometimes to a great length and depth, or terminating after a short course in either direction. Their width varies from that of a barleycorn to 36 feet; only one however, has been found in Cornwall of the latter width, and that for only 20 fathoms in length, in Relistian; the average width may be stated at from one to four feet. As regards their form, they are occasionally, though rarely, contained within parallel and regularly-inclined sides or walls; but are continually varying in width, both on the line of their course and of their inclination, partaking often of the same undulating, and even curved form of the rocks which they traverse; moreover, they are accompanied on either side by innumerable branches, which extend in various directions. And, lastly, a parallel series of veins frequently meet at cross vein, either on the line of its course, or of its dip; some of these veins continue their direction on either side of the cross-vein, whilst others, on the opposite side of the cross-vein, abruptly disappear on the line of their original course, and are often found at some distance therefrom, but running in a parallel direction.

Veins vary very much in their composition; in general they consist entirely of earthy minerals, which, indeed, even when the veins are metalliferous, constitute the greater part thereof, the ores seldom being continuous for any considerable distance, but being scattered and disseminated throughout the matrix in short irregular forms; sometimes indeed, but rarely, except in very small veins, the ore entirely prevails.

On the kindly appearance of lodes, Mr. Henwood says, "All the harder rocks in the mining districts are quartzose, and whether they are

granite, elvan, or slate, this character is unfavorable. A distinctly crystalline structure of granite, and their slaty texture, and high inclination in slate, and in the latter, the moderate thickness of the beds, and the slight inclination of the laminae, are encouraging features. The veined and bedded structures of lodes, and their frequent curvatures, are not inviting, neither are they rich when having a flat underlay. The quartzose, and generally speaking the small portions, are not so rich as those which consist of softer materials, and the frequency of bunches of ore near cross veins, are generally considered beneficial."

The Value of Peat.

We have in former numbers of our Journal given some account of the experiments which have been undertaken in Ireland for the purpose of converting *Peat* into articles of use in domestic economy and in the arts. We have recently seen the Prospectus of the British and Irish peat company, formed for manufacturing peat, under a patent taken out by Mr. Reece, who, after many trials and experiments, succeeded in effecting the complete separation of its elementary constituents in a pure form, and of great value as commercial commodities. This is effected by a peculiar process of combustion, or destructive distillation, by which one hundred tons of peat are decomposed every twenty-four hours, in two furnaces of ten feet diameter each. The obvious products are tar and a watery liquor; the former is, however, divisible into paraffine, heavy oil and light oil; the latter contains ammonia, carbonic acid, acetic and pyro-ligneous acid, and pyro-xelic spirit. The gaseous products are carbonic acid, oxygen, hydrogen and nitrogen. 100 tons of peat give 10,000 gallons of liquor, 1,000 gallons of tar, and 6,263,129 cubic feet of inflammable gas. The 10,000 gallons of liquor, give one ton of sulphate of ammonia, sufficient acetic acid to give 13 cwt. of grey acetate of lime, and 52 gallons of pyro-xelic spirit. The tar yields 300 lbs. of paraffine, 200 gallons of light hydro-carbonaceous oil, and 100 gallons of more dense or heavy oils. Our space does not allow an extended description of the process of purification, and rendering fit for commercial purposes of these general substances; but we will give what the prospectus states as to their value in the market. Sulphate of ammonia is extensively employed in the manufacture of carbonate and muriate of ammonia, and is extremely valuable as manure—price, £12 per ton. Acetate of lime is in extensive demand by calico printers—£14 per ton: pyro-ligneous spirit, used by varnishers, hatters and in lamps—5s per gallon; naphtha, for polishes, varnishes, and dissolving caoutchouc, gutta percha, &c., is per gallon. The paraffine will doubtless prove a valuable product; and an extensive candle manufacturer has offered 1s. per lb. for all the company can manufacture. Little has been known until recently of this valuable vegetable product. In appearance it is a fatty, but rather firm solid; it is wholly inodorous. At 110° Fahrenheit it melts into an oily liquid, and evaporates without change. It burns with a pure white flame. It is soluble in alcohol, oil of turpentine, naphtha, and the fat oils when heated; and it unites with spermaceti, wax, and most fatty bodies by fusion. It consists of six parts of carbon to one of hydrogen. These singular properties fit it in a remarkable manner for the manufacture of candles of a high degree of purity, which are found in use to emit no smell, and to give an intense colorless light.

From this general description, it must be evident that valuable results will arise from the operations

of the company. The profits estimated from actual experiment, at the prices above given, from 36,500 tons of peat, costing in its entire manufacture and carriage £11,717 are £11,908; and by extending the annual operations, of course the returns will show a larger amount of dividends.

Important Railway Movements in Canada.

The Toronto "Colonist," of the 8th inst., says that the standing committee on railroads have agreed to recommend to the House of Assembly the confirmation of the Provincial guarantee to the extent of one half of the stock, to each, of the *Great Western*, the *Ontario*, *Simcoe and Huron*, and the *Atlantic or Montreal and Portland railroads*. Our information has been derived from a reliable source. The report of the committee, we understand, will not be formally made, until a decision is come to by them, in regard to the Halifax and Quebec railroad, under the imperial guarantee, and its extension, under the like guarantee, from Quebec to Toronto, there to unite with the Northern, and to Hamilton, there to unite with the *Great Western*.

The proposition of the government is substantially as follows, viz: to provide for the construction of a Provincial line of railroad from Halifax to Hamilton, as nearly as possible, in the manner proposed by Earl Grey, in his Lordship's despatch lately published. The money for this great work to be procured in England, under the guarantee of the imperial government, at a rate of interest not exceeding 3½ per cent per annum, on condition of the several Provinces of Canada, Nova Scotia and New Brunswick, first acceding to the terms of the proposition. It would be unreasonable to expect that Canada would agree to the proposal, if the work were to be carried no farther than Quebec; and the government, very properly have submitted the question to the railroad committee, in the enlarged shape indicated above, comprehending in the imperial guarantee, the whole of the line from Halifax to Hamilton. This point being decided, the next step in connection with it is the extent to which the Provincial guarantee shall be confirmed to other railroads, and this point having been decided, substantially, to confine the boon to main trunk lines already undertaken, the committee, as we have already intimated, have come to the decision of including the *Great Western*, the *Northern*, and the *Atlantic*, in the Provincial guarantee; and we are not aware that they have agreed to comprise any other in it.

We think it safe to predict, says the Portland Advertiser, that the foregoing plan will be agreed to by Canada, New Brunswick and Nova Scotia, and that any less comprehensive one will fail of success. The distance from Hamilton to Halifax, by the way of Quebec, is 1200 miles. Estimating the cost of this line at £7,000 sterling, this trunk line will require \$42,000,000. Add to this the cost of the European and North American railway across New Brunswick, 200 miles, at £5,000 sterling, or \$5,000,000, makes an aggregate demand for \$47,000,000 from the imperial treasury. This sum will have to be advanced by Great Britain, if she is to retain the colonies.

In reference to the Provincial guarantee, already pledged to the Atlantic and other roads already commenced upon, to the sums of the interest for twenty years on one half the cost, the change of guarantee making it applicable to *principal* as well as interest, will enable these companies to raise their money in England, at par. It is known that the largest banking house in London, have recently offered to negotiate the proposed securities, at very favorable rates. This circumstance has given a fresh impulse to the movements of the friends of the Atlantic road in Montreal.

Coming down fast.

The Scioto Gazette, only a few weeks since, was down upon us most fiercely, for saying that it was the intention of the Cincinnati and Belpre company to go to Marietta, and that that company were proposing to abandon Baltimore for a connection with Philadelphia. We now find in that paper of the 9th instant a long article reiterating our statement, almost in so many words. It also publishes a *Resolution* of the board of directors to go to Marietta upon certain conditions—well knowing that these conditions are sure to be complied with.—There is evidently no friendly feeling on the part of the Gazette to the Baltimore project. Instead of this, the whole force of the paper is thrown in favor of the northern route connecting with Philadelphia.

We may here state what are claimed by the friends of the Philadelphia route to be the comparative distances of the two routes.

From Athens to Tygart's Valley bridge. 177 miles.
From Tygart's Valley bridge to Baltimore..... 283 "

Baltimore to Philadelphia 460 miles.
..... 98 "

..... 558 miles.
From Athens, Ohio, to Greensburg..... 189 miles.
From Greensburg to Philadelphia..... 325 "

..... 514 miles.

Making a distance from Athens (a common point) to Philadelphia 44 miles nearer, by the northern line. It is also claimed that when the grades are taken into consideration, the equated distance is really less to Philadelphia than to Baltimore.

The friends of the northern route estimate the cost of the 189 miles at \$25,000 to the mile—equal to \$4,700,000. They estimate that there can be obtained on the route, as available means, the sum of \$1,500,000. It is expected that Philadelphia will furnish a like sum, and that the balance may be easily obtained on the bonds of the company.

The estimates (from the same source) of the cost of the Parkersburg route, are \$30,000 to the mile, equal to a total of \$5,310,000. Baltimore must therefore furnish at least \$2,500,000, to secure the completion of this route. It is claimed that Philadelphia will furnish her quota much more readily than Baltimore.

We give these as the *ex parte* statements of one side. The Baltimoreans may tell us a different story. However this may be, one thing is pretty certain, that the people of lower Ohio are likely soon to have a choice of markets between Baltimore and Philadelphia.

Georgia.

Southwestern Railroad.—We had the pleasure on Friday last, of making our first trip over the Southwestern road. The work of laying the iron was completed on Thursday evening, and the train, filled with freight and passengers, reached Oglethorpe about half past ten on Friday morning. Its arrival was greeted by hundreds of curious and interested spectators who had congregated at the depot from Oglethorpe and the surrounding country, all of whom seemed delighted at the event, especially as they had not anticipated the arrival of the cars before the middle of the present month.

The completion of the road will be celebrated at Oglethorpe on the 10th inst. We are also informed that the company will commence its regular transportation of the mails on or before the 15th inst., and that it expects to be fully prepared to transact all the business that may offer during the season. The engines and equipments generally are of the first class, and the passenger cars are among the most beautiful and comfortable we

have ever seen anywhere. The track is in good condition, and only needs a little ditching and trimming, to place it in first rate order. Along the entire line we were pleased to notice that due regard had been had to taste, as well as utility, in the construction of the station houses, tanks, depots, etc. The Southwestern road is 51 miles in length, has been about three years under contract, and will cost, with its equipments, a little over six hundred thousand dollars. It is indeed a noble structure—credit alike to those who conceived and those who executed it—to those who furnished the means, and those who performed the work. It was begun and prosecuted under no ordinary difficulties. The company had but a limited amount subscribed, and a large proportion of that was forfeited after the payment of the first instalments; so that the burden of the payments fell upon the Central company and the city of Savannah. To these mainly, as well as to the sound judgment of the officers and engineers, and to the perseverance and energy of the contractors, are the people of the southwest indebted. The road is now completed, and who doubts its importance to the planting interests? It has already occasioned an advance of from fifty to one hundred per cent in the price of lands—it carries freight for half the amount hitherto charged, and passengers for less than it would cost to travel the distance on foot or on horseback. These are considerations of no little importance—such as ought to commend the enterprise to all men of reason. That the road will be profitable, we have much reason to hope. Even from its present terminus, it cannot fail to get nearly all the trade and travel of southwestern Georgia.—*Macon Journal*.

Louisiana.

New Orleans, Jackson and Northern Railroad.—The Committee of Ways and Means appointed by the New Orleans railroad convention in April last, have published an "Address to the People of Louisiana," on the subject of this railroad. A late number of the *Lafayette Republican* contains an abstract of this document, from which it would appear that the commerce of New Orleans is declining—that there was a decrease of 572 in the number of flatboats arriving at her wharves from the year 1849 to 1850; a decrease of 89 steamboats during the same time, and a decrease of 175 American and 216 coastwise vessels. This is not, as might be conjectured, a period of unusual decline; but it is said to be a true illustration of the downward course of trade for years past.

The committee say that in order to redeem the business character of the city and regain her commercial advantages, the most important means is by munificent appropriations for railroads leading from New Orleans and connecting with the vast system of railroads now projected or under construction in neighboring States, and by co-operating zealously with the friends of internal improvement throughout the southwest.

On the subject of taxation, the committee of Ways and Means say that it will not do to rely solely upon individual subscriptions for the promotion of great public works—that it is unfair to throw the whole burden of a public improvement on the shoulders of a few—that a tax upon real estate is the fairest, most equal and best means that can be devised, to raise the funds necessary for the construction of the contemplated road. Real estate is the first to feel the benefits of such a work; and it gives a permanent interest to the holder of revenues, more independent of his individual agencies than any other description of property.

In support of this, the committee cite among others, the instance of Massachusetts, which in 1840 was worth in real estate \$299,878,329; in 1850 \$590,531,881. She has expended \$100,000,000 in railroad enterprises, and the increase in the value

of her real estate, in ten years is almost three hundred millions!

The importance of the proposed road is also urged, as connecting New Orleans by a short and speedy route with the projected roads of the northwest, with the great lakes, and with the eastern cities, without the delays of the present Atlantic or river routes.

Kentucky.

Maysville and Lexington Railroad.—The directors of this company have made a report, giving the reasons which induced them to locate the road upon what is known as the *upper* route, which are in substance as follows.

It appears by the surveys and estimates, that there was a difference in the cost of construction between Carlisle and Lexington, in favor of the *Paris* route, and against the *North Middleton* route, of \$112,000. In the matter of subscriptions, it was found that upon the *North Middleton* route the amount subscribed was \$100,000, and upon the *Paris* route, (including the subscription of the county of Bourbon, \$150,000,) there was subscribed an amount of nearly \$200,000. The distance, via *North Middleton* route was two and a quarter miles greater than upon the *Paris* route; and in comparing the merits of the separate routes, the board were obliged to consider fully the cost to the company of operating the road upon this extra distance. It being usual for engineers, in computing for extra distance, to allow for every mile the sum of \$50,000, the board stated that they knew of no reason why they should in this case depart from a rule so universally adopted, and which in this case can be easily proven to be correct. They therefore allow for this extra distance the sum of \$112,500 in favor of the *Paris* route.

The actual difference in favor of the *Paris* route is then—

Difference in cost of construction.....	\$112,000
" amount of subscriptions.....	100,000
Estimated difference for 2 1/4 miles extra distance.....	112,500

Total \$324,500

This was deemed sufficient to influence the board in its decision, and the location via *Paris* was unanimously adopted.

The report also gives the reasons which induced the board to adopt the location of the route from Maysville to Paris, via Helena and Carlisle, in preference to the western route. After giving careful attention to the surveys and estimates of both routes, the differences in favor of the eastern route were found to be—

1st. A difference in cost of construction of.....	\$84,221
2d. " land releases.....	27,000
3d. " private subscriptions..	23,850

Making a total difference in favor of the eastern route, of..... \$135,071

In addition to this positive difference, the tunnel at the head of Limestone creek might perhaps require side walls and arching, in which case the expense of the western route would be increased some \$60,000—making a total difference, in that event, of nearly \$200,000 in favor of the route selected.

The board remark that they are well aware of the many prejudices that exist along the line of the lower route with regard to their decision, but they consider they have acted in all cases for the best interests of the country at large, and of the stockholders. They say their policy has been from the commencement, an openly avowed one, which

was, to give no preference to either route, but to let the parties on each route bid for it, and the line that offered the most inducements would be the one adopted. In adopting, therefore, the upper route, says the report, the board are confident that they have carried out this policy, and they at least have the consciousness of knowing that they have acted without fear or favor, and have fulfilled, as well as laid in their power, the obligations imposed upon them by their office.

Pennsylvania.

Cumberland Valley Railroad.—From the sixteenth annual report of the directors of this company, (which has been for some time lying upon our table), we learn that the cost of re-building the road was \$268,696 17. The work was performed in a thorough and satisfactory manner, under the direction of Daniel Tyler, chief engineer. The bridge at Harrisburg was also thoroughly repaired and improved by the introduction of additional arches through its whole extent.

The report expresses a hope that the Dauphin and Susquehanna railroad company will soon complete their connection with the road of the Pennsylvania company, thereby forming an unbroken line of rails from the mines to the Cumberland Valley road, consequently greatly increasing their business, and at the same time supplying the demand for fuel at a price which must greatly increase its consumption.

The cost of the road thus far, including real estate, stations, shops, machinery, engines, cars, and materials for constructing cars, is \$1,187,749 98. The receipts of the year 1850 were \$92,755 78, of which the ordinary expenses were \$46,260 63,—being a little less than fifty per cent of the receipts, notwithstanding the repair of Harrisburg bridge swelled the amount of expenditure nearly seven thousand dollars, and the relaying of the track materially diminished the receipt by embarrassing the business of transportation.

The officers of the road for 1851 are—

Frederick Watts, President.

Edward M. Biddle, Secretary and Treasurer.

Wm. S. Cobean, Philip Berlin, William M. Henderson, Frederick Byers, Daniel Tyler, David Lapsley, Wm. M. Biddle, Geo. Cadwallader, Henry J. Biddle, J. N. Hutchinson, James McCormick and I. P. Hutchinson, Managers.

Railroad Movements in Pittsburg.

The movement in Philadelphia, in favor of the Hempfield railroad, by which it is intended that the city of Pittsburg shall be cut off from the line from Philadelphia to the great West, has aroused the citizens of Pittsburg to a sense of the danger that threatens them, and of the importance of doing something for self-defence. A public meeting was accordingly called and held on Saturday evening last, to secure the early completion of the railroad from Pittsburg to Steubenville, which it is believed will counteract any injurious results that might follow to Pittsburg from the making of this Hempfield Road. The call for the meeting was signed by the leading and most influential citizens of Pittsburg.

The Commercial Journal has this reference to another road, in which the city of Baltimore has an interest:

Since Philadelphia is disposed to send Pittsburg adrift to shift for herself, it has been suggested, that the time and circumstances are highly favorable for a renewal of efforts to secure a connexion with Baltimore by railroad.

The Pittsburg and Connellsville railroad company still preserves its vitality. General Latimer is the President, and his energies are active as ever. The Baltimore and Ohio railroad company remains a large stockholder in this company, and

finds us now with a western railroad almost finished, penetrating a most valuable region of Ohio, tapping her most important lines of railroad; a fact that did not exist when the Baltimore and Ohio company declined the connexion with us.—That company, and the people of Baltimore, will find and feel inducement now to connect with Pittsburg, they never felt before.

What say our citizens to the revival and prosecution of this connection with Baltimore? Ostracized by Philadelphia, we must look for connexions to suit ourselves and promptitude is all we now need.—*Baltimore Patriot.*

New York.

Albany and Schenectady Railroad.—Below we give an abstract of the report of the directors of this company, submitted to a meeting of the stockholders held on the 1st day of February last.

The receipts of the road for the six months ending Jan. 31, 1851, were as follows:—

From passengers.....	\$71,519 89
From Freight	38,370 23
For mail service	1,700 00
For rents.....	1,565 29
	<hr/> \$113,155 41

The disbursements for operating the road, and relaying three miles of track, have been.....	\$42,097 26
Interest paid on bonds.....	23,050 56
Amount contributed to reserve fund.....	2,500 00
	<hr/> 67,647 82

Leaving balance, being the nett earnings for six months.....	\$45,507 59
Out of this sum the directors have declared a dividend of 3¼ per cent....	35,000 00
	<hr/> \$10,507 59

As a surplus from the nett earnings of the half year's business, to be carried to the credit of the reserve fund, which will leave the balance to the credit of that fund, of \$36,696 17.

The receipts for the fiscal year ending January 31, 1851, were.....	\$214,786 52
Repairs, expenses, interest and contributions to reserve fund.....	134,278 93
	<hr/> \$80,507 59

Balance.....	\$80,507 59
The receipts for the six months ending January 31, 1851, were.....	\$113,155 71
The receipts for the corresponding period ending Jan. 31, 1850, were.....	95,862 70
	<hr/> \$17,293 01

The nett increase of business has been 18 per cent. for the year past, and the average annual increase for seven years has been 17 per cent. per annum.

The report states that the present road bed and track are in excellent condition, and will require no material repairs during the ensuing year. Arrangements are in progress to lay with heavy iron the remaining eight miles of double track, which will give the company an excellent double track throughout the whole length of the road, and with their present equipment will enable them to despatch their increasing business in a satisfactory manner.

Indiana.

Peru and Indianapolis Railroad.—The Indiana State Sentinel states that Mr. Burke, the President of this road, recently returned from New York, where he had been to make arrangements to insure its speedy completion. He was so fortunate as to conclude a contract with some gentlemen of that city, to complete the whole road within one year from next November.

The gentlemen who have taken the contract

were contractors on the great New York and Erie road, just completed, and have the character of being very energetic business men.

Norwich and Worcester Railroad.

At a meeting of the Norwich and Worcester railroad company, held at Norwich recently, the following gentlemen were chosen directors:—J. W. White, John A. Rockwell, Wm. Aug. White, J. Newton Perkins, Charles Johnson, Jedediah Huntington, David A. Neal, Robert D. Weeks, Alex. De Witt. Mr. J. W. White was re-elected President.

The earnings of the road for the six months ending May 31st, were—

Passengers	\$50,037 73
Freight	66,656 94
Mail service.....	4,000 00
Express, &c.....	2,136 53
Rental	952 99
	<hr/>

Total

EXPENSES FOR SAME PERIOD.

Repairs of Road, Engines, Cars, Bridges, Fuel, Oil, &c.....	\$67,515 90
	<hr/>

Int. paid, and salary Transfer Agent...	26,200 57
	<hr/>

Net earnings after paying expenses and interest.....	\$30,067 72
	<hr/>

The gross receipts for the year ending May 31, 1851, are.....	\$267,700 88
Expenses, repairs, &c.....	140,362 25
	<hr/>

	127,338 63
Interest paid.....	53,656 31
	<hr/>

Net income.....	\$73,682 32
	<hr/>

The disbursements for the year have been large for a class of expenditures which will not be required for several years, especially so far as repairs of the bridges are concerned.

The state commissioners certify that the road and its belongings is in a condition comparing favorably with the best roads in New England. The directors announce the discontinuance of one accommodation train which has been run at a loss, which will reduce the running expenses.

Ohio.

Springfield, Delaware and Loudonville Railroad.

—We learn that this company have secured the services of S. W. Roberts, Esq., chief engineer of the Ohio and Pennsylvania road, as advising engineer. This route is looked upon with much favor at Pittsburg, and regarded as very important to that city, and to Philadelphia, as securing a continuous line of railway from Cincinnati to Philadelphia, unbroken by the Ohio river.

Mad River Railroad.—This company has located a new track from Tiffin to Sandusky city, which will shorten the distance about eleven miles. It also reduces the grade to about twelve feet to the mile. At some points on the old track the grade was more than forty feet. By this reduction of grade, it is stated that the same motive power will take three times the weight over the road that could have been taken before.

Dayton and Western Railway.—We learn from the Dayton Journal that all difficulties existing between the Cincinnati and Western Railway Company have been amicably adjusted, and no obstacle exists to prevent the completion of the road west to the State line, and to a connection with Greenville. Means will be placed in the hands of Mr. Degraff, the contractor, to enable him to employ an additional force of 400 hands.—The bridge over Wolf Creek is finished, and the travelling between Dayton and the Greenville

junction in progress. The rail and a locomotive are on the way out, and will be in Dayton in a few days, when the work of laying the rails will be commenced. The Journal rejoices in the prospect of a ride on a rail, on the "Great Central Route" to Terre Haute, within eighteen months.—*Cincinnati Gazette*.

Indiana.

The New Albany and Salem Railway.—The recent sale of one hundred thousand dollars of the bonds of this railway company, bearing ten per cent. interest, in England, at ten per cent. premium, denotes the estimate by capitalists of the connexion of this work with the Michigan Central railway. Four months since, the sale of these bonds at par was held a fortunate sale. The recognised financial strength of the Michigan company, and the importance of the route from Lake Michigan to the Ohio river, have given an impulse and vitality to the New Albany road not before felt nor contemplated. It impresses upon our citizens the necessity for the speedy completion of the railway to Columbus, and for the immediate construction of the railway to Nashville, to continue the depot of business and trade at Louisville.

Unless the obstruction of the Falls is removed, the terminus of a route through Indiana, from the Northern Lakes, below the Falls, must concentrate a depot for Southern trade at that point. The limited size of New Albany is no impediment to her rapid development.—Cincinnati was, half a century since, of less population and importance than Louisville. By the Jeffersonville and Nashville railways, the depot must remain at Louisville, and the trade of Indiana and the South continue to concentrate at this place. The delay in constructing these works until the line from New Albany shall be completed, cannot be afterwards recovered.—*Louisville Courier*.

Ohio and Pennsylvania Railroad.

The opening excursion of the Ohio and Pennsylvania railroad, west, took place on the 12th inst., and on the Monday following the road was regularly opened for the transportation of passengers and freight between Pittsburgh, Rochester and New Brighton. From Pittsburgh to Alliance, 81 miles, is to be opened in October next. Alliance is 58 miles from Cleveland, and is the point where the Ohio and Pennsylvania road crosses the Cleveland and Pittsburgh road. The Cleveland and Pittsburgh road was completed to that point by the first day of July. From Pittsburgh to Canton and Massillon, 107 miles, the road is to be opened in November next connecting with the Ohio canal.—From Pittsburgh to Wooster, 132 miles, it is to be opened in the Spring of next year, and to Crestline, 185 miles, to connect with the Cleveland, Columbus and Cincinnati railroad in the autumn of next year.

By next October citizens of Cleveland will be able to reach Pittsburgh in about six hours, on a continuous railroad. Next winter and summer nearly all the travel between Pittsburgh and Cincinnati will probably go by the way of Cleveland. The distance between Pittsburgh and Cincinnati, by way of the Ohio river, is 475 miles; by railroad via Cleveland, 85 miles less, or 390 miles. The time of travel by the river would be nearly three days; by railroad less than 19 hours.

North Western Virginia Railroad.

The following letter announces the subscription to the stock of this road of an amount sufficient to secure the charter authorizing its construction:—

CORRESPONDENCE OF THE AMERICAN.

*Gazette Office, Parkersburg, Va.,
July 10th, 1851.*

Gents—One hundred and sixty thousand dollars (160,000) have been subscribed to the capital stock of the North Western Virginia railroad company, in this place. In this amount, I include the subscription of fifty thousand dollars by the Corporation of Parkersburg. Little or nothing has been subscribed in the neighboring counties. Our books will close to-morrow. Charter secured!

Respectfully, A. M. STERRETT.

The charter being thus secured, the next step to be taken is the opening of the subscription books in Baltimore, and the subsequent organization of

the company. The belief is very generally expressed by the Pittsburg press that the Hempfield railroad will be built, now that it has been taken up by the Pennsylvania railroad company and the mercantile interests of Philadelphia. In our opinion, much depends upon the manner in which the Parkersburg railroad project is treated here. If this latter work is taken up by this community with hearty good will, and prosecuted with becoming vigor, we think that the movement will prevent the investment of the requisite capital in the Hempfield road; but even should it be otherwise, Baltimore will be able to compete successfully with her rival for the immense trade and travel which must pass over the Straight Line railroad, between St. Louis, Cincinnati and the South West, and the Central Eastern seaboard.—*Baltimore Patriot*.

Ohio.

Little Miami Railroad.—The agent of this company has recently negotiated with Messrs. Winslow, Lanier & Co., of this city, \$300,000 of their seven per cent. bonds at favorable rates. This loan is made to pay off the floating debt of the company, and to enable them to make cash dividends. On the 1st of June, 1852, the company will pay cash dividends to that date, and ever after. The bonds are convertible into the stock of the company, at par, within four years from the 1st of April last, at the option of the holder. The road runs from Cincinnati to Springfield, a distance of 86½ miles, connecting at the latter place with the Madison and Lake Erie railroad, and at Xenia, with the Cleveland, Columbus and Cincinnati railroads, both completed and in successful operation. Ten per cent. dividends have uniformly been made but paid in the stock of the company, the receipts having been employed to the completion and improvement of the road. The road is now finished and in complete order. The flat rail at first laid down has been taken up and a heavy T rail put in its place. The total cost of the road including \$236,000 of stock owned and paid for in the Columbus and Xenia railroad, is \$2,435,929 48. The net earnings of the road for six months ending the 1st June last, gave a dividend of five per cent. with a surplus of \$35,528, being an increase of over 40 per cent. on the receipts of the corresponding six months of last year.

Kentucky.

Lexington and Frankfort Railroad.—From the annual report of the directors of this company, submitted to a meeting of the stockholders on the 19th of May, it appears that during the past year the indebtedness of the company has been reduced from \$220,000 to \$170,000. At the same time much has been done in widening embankments and ditching the road, so as to secure a thorough drainage of its bed; wood and water stations have been erected, and additions have been made to their stock of passenger and freight cars. The cost of the road, up to the present time, is stated as follows:—

Paid state of Kentucky for old road...	\$150,000 00
Expenditures for construction and furniture, as per items in Treasurer's statement.....	400,542 25
Real estate.....	3,457 31
Salaries chargeable to construction, about	6,000 00
	\$559,999 56
Less amounts received from old iron,	\$8,773 51
	\$551,226 05

The report states that of the four locomotive engines now owned by the company, but one has sufficient power for the heavy grades of the road. The remaining three, which were included in the purchase from the state, have been found entirely too

light. The directors have therefore ordered two additional engines, which will be furnished in the course of the summer and fall.

The receipts of the road for the year ending May 1st, 1851, are \$66,613 88; the expenses during the same period are \$31,327 45, being only about forty-seven per cent. of the receipts. This will compare favorably with the proportion of expenses to receipts on Eastern roads; and when it is taken into account that the Lexington and Frankfort railroad is only twenty-eight miles in length, and that the proportional expenses of working a short line of road are necessarily greater than the working expenses of long lines, it will be seen that the affairs of the road have been managed with a good degree of prudence and economy.

Virginia.

Seaboard and Roanoke Railroad.—The operations on the Seaboard and Roanoke railroad have been completed as far as Meherrin River, to which point it was not expected to reach before the 4th of July. Meherrin river is 65 miles from Portsmouth, only leaving about 20 miles for the entire completion of the road to Weldon.

Northwestern Railroad.—We learn that the following citizens of Baltimore have been duly appointed to procure subscriptions to the stock of this company, viz:—Robert Garrett, Thomas Hoffman, John Hopkins, Jesse Slingluff, Charles L. Slingluff, Joseph Taylor, Chauncey Brooks, and John Glenn, Esqrs. These gentlemen are authorized to open stock subscription books in the city of Baltimore at such times and places as they may deem advisable. We further learn that there has been a fair subscription to the stock in the Virginia counties lying on the route of the contemplated road.—The precise amount of subscriptions is not yet known, but as soon as ascertained the Baltimore Commissioners will open the books in this city.—We have no doubt that this movement will be cordially met by subscriptions on the part of our citizens, corresponding in liberality with the degree of interest they have in the early commencement and speedy accomplishment of this most important work.—*Baltimore American*.

Vermont.

Vermont Valley Railroad Company.—The annual meeting of the stockholders of this company was held at Bellows Falls, on the 9th inst. The Directors made a very lucid and satisfactory report upon the condition and prospects of the company, which was unanimously accepted.

The following Directors for the year ensuing were unanimously elected:—Hugh H. Henry of Chester, President; Charles Paine, Northfield, Vt.; Charles Linsley, Middlebury, Vt.; George L. Schuyler, New York; Alexander Hamilton, J. do.; Charles Chapin, Brattleboro'; Peyton R. Chandler, Putney.

Robert Schuyler was chosen Treasurer, L. G. Mead, Clerk; B. R. Chandler, Superintendent.

There was a very full attendance of Stockholders, who were highly gratified by the flattering business prospects of the road.—*Brattleboro' Eagle*.

Indiana.

Richmond and Newcastle Railroad.—The Newcastle Courier states that over \$70,000 has already been subscribed to the stock of this road, and that the grading on the heaviest part of the line is about completed. Negotiations are on foot for heavy T rail with favorable prospects of success.

New Albany and Salem Railroad.—We have seen a letter from the President of the New Albany and Salem Railroad company, from which we learn that an arrangement has been made, by which that company and that of the Crawfordsville, Ind., and Lafayette company are to be consolidated under an act of the Legislature authorizing it, and that the road is to be pressed forward to Michigan city with all possible dispatch. We learn that the desire along the road is so great to have it completed at

an early day, that the Michigan Central railroad company has agreed to anticipate some of the later instalments of its subscription for stock in that road, in order to aid in putting the work under contract from Michigan city to Lafayette immediately. —*Detroit Free Press.*

AMERICAN RAILROAD JOURNAL.

Saturday, July 19, 1851.

British Provinces.

Affairs in the neighboring British Provinces are assuming an aspect which is attracting a careful and increased attention, both in the United States and in England. It is plain to see that a general discontent pervades the great mass. They are dissatisfied with the present condition of things, and are in favor of change, in hopes that it may bring relief and contentment. They have reached a point where numbers, wealth and strength, secure respect and consideration abroad, and give at home a consciousness of an ability to consult their own ideas of welfare in questions that relate to their internal and domestic economy.

The British Provinces certainly embrace one of the finest portions of this continent. They have an abundance of the most valuable minerals, and an excellent soil. Their capacity for production is enormous, but they are almost entirely wanting in suitable markets. Their coal and iron cannot be sent to England, and they are kept out of the United States by high duties. The only exportable agricultural products of the northern States and the Provinces, to England, are wheat and Indian corn. In the latter article the Provinces cannot compete with the United States, while only a limited portion of their territory is well suited to wheat. These make up but a small fraction of their agricultural products, and are not equal to the consumption of these articles among themselves. The coarser and more valuable products will not bear a long voyage at sea, as before stated. Their domestic markets amount to nothing of moment, and those of the United States are almost inaccessible. We thus find a widely extended and numerous people, with all the material basis of great wealth and prosperity, unable to turn their resources to account, simply from the difficulty and cost of getting their products to the markets where they are wanted, and would, but for such charges, command a remunerating price. This state of things is breeding great discontent, which is manifesting itself in almost every manner possible. A great part of the differences of opinion which now exist in the Provinces arise from the external relations to which we have alluded. Dissatisfied with the present, they strike out into some new line of policy, which, having no relation to the cause of the troubles, is repudiated for something else equally wide of the mark; and many of the important propositions now before the Canadian Parliament have been brought forward in the hope that some of the experiments tried may effect a cure of the evils under which the body politic is now laboring.

The home government sees the discontent and disaffection which prevails; is anxious to retain the colonies, and hence the newly awakened attention to their complaints, and proffers of aid to assist them in their projects. The Provinces, seeing what railroads have effected in the United States, and assuming that similar results would follow their introduction among them, are eager for their construction. To a limited extent they would produce similar results; as they would render other

pursuits, beside agriculture, necessary. Every person withdrawn from agriculture would create a demand for what he did not produce. But change in this respect would be too slow to bring immediate relief. Production, by the diminished cost of carriage, would be stimulated in much greater proportion than the new demand, so that labor would not be any better remunerated. Railroads are merely the *corollaries*, not the great remedy for Provincial embarrassment and discontent. They would not effect a cure, but instead, would be the cause of further and increased disaffection. The greater the ease with which their products could be transported, the greater would appear the want of a market. Let us suppose a case. A Canadian farmer, having no demand at home, places aboard a train a car load of potatoes, for the purpose of sending them to Boston. At the lines he is met with a tax, in the shape of a duty, which eats up all the profit to be made by sending them into the States. The fact that he must pay this tax, in which he can in no way be benefitted, will breed more discontent and complaint than all his grievances beside. This tax constantly stands between him and his interests. He feels it to be a practical wrong, what is a *legal* right; and the contest that must arise between his interests and his predilections (supposing him attached to the present order of things;) will in the end most certainly be decided in favor of the former. The promotion of our physical and our material good will sooner or later always control, as it should, our political views. If therefore the Canadian, or the British government, expect that railroads are to administer a soporific to the colonies, that they will secure contentment and harmony, they are grandly mistaken. They will not only serve to discover, in a more complete manner, the true wants of the colonies, but they will give the strength and ability to gratify them. They will be of great benefit, no doubt, but as far as political effect is concerned, they will constitute another and a powerful element of discord.

It will be a long time before the turbid stream of Canadian politics will run clear. The political principles of those at the head of affairs are the maxims of a monarchical government. Their sympathies are all on the side of an aristocracy. Many of the leading men in the Provinces have been in military life, and their political views are moulded by their ideas of political subordination. Habit has attached them to their ideas, and their interests, to the existing order of things; and they look with undefined terror upon everything that may call in question their principles, which have become a second nature, or which may threaten to take from them their means of support. With such people, change is but another name for an attack upon what are deemed personal right. Hence the bitterness which many of them feel toward their busy and innovating neighbors, over the lines. Another future source of disturbance is the present limited right of suffrage. This must gradually be extended, though not without a severe struggle on the part of those who possess this right. The extension of this privilege will undoubtedly lead to some excess, till the exercise of the thing shall fit the new recipients for the enjoyment of freedom. There is too, a large party in Canada in favor of maintaining the connection with the home government, and a strong one in favor of dissolving such connection. All these elements heaped together constitute a highly inflammable mass; and we must expect repeated explosions till the

combustible ingredients shall have become exhausted, and the whole reduced to one homogenous mass. The material interests of the Provinces are what in the end will direct their policy, despite the financial interests or policy of those in office, or the theories, the ideas, or the pursuits of the great mass. Our neighbors must strive to be better logicians, even should this make sad havoc both with conviction and tradition.

New York.

A Convention of citizens of Chautauque and Cattaraugus Counties was held in the village of Jamestown, on the 27th ult., to take measures for the organization of a company to construct a railroad from the mouth of Little Valley Creek to the State line in the town of Ripley. Hon. Benjamin Chamberlain, of Randolph, was chosen President. It was resolved to build the road, and a large number of local committees were appointed to collect subscriptions and obtain right of way. The Convention adjourned to meet on the 11th instant, at Randolph.

To Contractors.

Peru and Indianapolis Railroad.

PROPOSALS will be received at the office of the Peru and Indianapolis Railroad, in Noblesville, until the evening of the 13th of August next, for the Grading of the line of the above road from Noblesville to Peru, a distance of fifty miles.

The proposals are to be addressed to W. J. HOLMAN, Esq., Chief Engineer, at the Company's Office, where plans and specifications of the work may be seen. Payments will be made monthly in cash, reserving 15 per cent. till the contracts are completed.

Indianapolis, July 12, 1851.

Stock and Money Market.

The market continues without much change.—Money is abundant, and the quotations are well sustained. The receipts upon all our roads show a great increase over the past year, which fact exerts a strong influence in sustaining the price of stocks, and in securing confidence to our railroad enterprises. We have nothing new to add in reference to bonds of new works. There are too many of the securities before the market to permit an active demand, but they continue to find purchasers at prices not unfavorable in the whole to lender and borrower, so that all our leading works can keep under full headway.

The Madison and Indianapolis railroad company has declared a semi-annual dividend of five per cent. This makes eleven per cent. for the year just ended.

The earnings of the Boston, Canada and Montreal railroad for the month of June were \$12,718 38, against \$10,715 94 in 1850.

The receipts on the Cleveland, Columbus and Cincinnati railroad for the first week in July were \$9,576 for passengers only.

The earnings of the Michigan Central road in June are.....\$110,826 87
June, 1850.....70,313 56

Increase, 57 per cent.....\$40,513 31

The President of the Belpre and Cincinnati road Hon. W. P. Cutler, and Col. John Madeira, one of the directors, have effected an arrangement in this city for the sale of \$300,000 of the bonds of Ross county, issued in aid of the above work. The county of Ross is one of the of the richest in Ohio, and its bonds are equally as good as the securities of the state. Thirty-five miles of this road is already under contract, and the work on 50 miles more

is soon to be let. The whole length of line is 188 miles.

The Evening Journal gives the annexed statement of the quantity of flour, wheat, corn and barley, left at tide water during the 1st week in July, in the years 1850 and 1851, as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1850....	37,528	27,368	181,029	5,006
1851....	67,882	44,145	294,174	4,035
Increase.	30,354	16,777	113,145	dec. 971

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 7th July, inclusive, during the years 1850 and 1851, is as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1850....	670,948	258,272	1,471,420	116,951
1851....	1,200,788	578,849	3,180,955	103,751

Increase. 538,840 330,577 1,709,565 dec. 13,200

The amount received for tolls on all the New York State Canals during the first week in July, is.....\$82,827 14
Same period in 1850.....66,176 24

Increase in 1851.....\$16,650 90

The aggregate amount received for tolls from the commencement of navigation to the 7th of July inclusive, is.....\$1,211,678 89
Same period in 1850.....992,663 90

Increase in 1851.....\$219,015 99

The following is the business of the Peru and Indianapolis railroad for June, 1851:—

Amount of Freight transported, (pounds).....948,170
Number of passengers transported.....773

RECEIPTS.

Rec'd for transportation of passengers.....\$326 20
Rec'd for transportation of freight, 443 08

The following is the business of the Indianapolis and Bellefontaine railroad for June, 1851:—

Amount of freight transported, (pounds).....992,103
Number of Passengers transported
in regular trains.....770
Number of passengers transported
in celebration.....5,000

RECEIPTS.

Rec'd for transportation of Passengers in regular trains.....\$411 50
Rec'd for transportation of freight, 430,03

Rec'd for transportation of passengers in celebration.....\$841 53

Total.....\$1,943 03

The earnings of the Chicago and Galena road shows a very favorable condition of traffic. The receipts in June were:

Freights.....\$8,350 16
Passengers.....8,277 52

Total.....\$16,627 63

AURORA BRANCH.

Freights.....\$1,000 18
Passengers.....771 30

ST. CHARLES BRANCH.

Freights.....\$267 98
Passengers.....199 06

Total.....\$18,866 20
Earnings, June, 1850.....9,953 40

Increase.....\$8,912 80
Nearly 100 per cent.

The receipts of the Hartford and New Haven railroad up to the 1st of July, 1851, show an in-

crease of \$61,200 over the receipts for the corresponding period of last year.

The coinage at Philadelphia for the past six months has been as follows:—

GOLD COINAGE AT THE PHILADELPHIA MINT.

	Double Eagles.	Half Quarter Eagles.	Quarter Eagles.	Dollars.
Jan...2,116,020	None.	None.	253,900	251,046
Feb...4,560,980	.....	.....	333,315	188,702
March, 5,683,940	.....	243,315	95,260	263,220
April, 2,354,880	211,790	.....	222,270	387,118
May, 1,734,940	366,250	215,000	561,690	422,682
June, 2,610,300	121,270	356,180	285,610	279,888

Total 19,061,060 599,340 814,495 1,752,045 1792,656

TOTALS.

January.....\$2,620,966	April.....\$3,176,058
February.....5,082,997	May.....3,201,262
March.....6,285,735	June.....3,653,248

Grand total.....\$4,020,266

The amount turned out at New Orleans will probably raise the aggregate to \$30,000,000.

SALES OF STOCK IN NEW YORK.

	July 10.	July 17.
	Sales.	Sales.
U. S '67 Loan.....	116½	116½
Erie R.R.....	84½	84½
Harlem R.R.....	73	73½
Stonington.....	44½	44½
L.I. R.R.....	17	17½
Norwich & Wor.....	57	56
Del. & Hudson.....	121½	121½
Reading.....	56½	56
Morris Canal.....	16	16½
Erie income.....	97½	98
" " Bonds.....	103	103½
Canton.....	67	68
Farmers Loan.....	69	69

SALES OF STOCKS IN BOSTON.

	July 9.	July 16.
Old Colony Railroad.....	68	67½
Boston and Maine R.R.....	103½	103½
Eastern Railroad.....	98	98
Fitchburg Railroad.....	110	109½
Michigan Central Railroad.....	103	103½
Northern Railroad.....	69½	—
Vermont Central Railroad.....	35½	35
Vermont and Mass. R.R.....	30½	30½
Western Railroad.....	102½	103
Ogdensburg Railroad.....	35½	36
Rutland Railroad.....	55	—
Boston and Worcester Railroad.....	103½	103½
Rutland Railroad Bonds.....	97	—
Ogdensburg Railroad Bonds.....	97	—
Vermont Central R.R. Bonds.....	91½	—
Boston and Providence R.R.....	90	—
Philadelphia, Wilm'gton & Balt.....	29½	—
Concord R.R.....	55	—

To Railroad Companies.

THE undersigned has discovered and patented an imperishable, cheap, and sufficiently elastic substance, to be introduced between the sill and rail, so that the stone sill can be used in place of the wooden sill: entirely overcoming that rigidity where the rail is laid directly on stone. Address

J. B. GRAY, care of A. G. HOLMES,

108 Arch st., Philadelphia.

July 10, 1851.

4m

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,

No. 24 Commercial St. Boston.

August, 16, 1849.

6m33

Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron.

THOMAS B. SANDS & CO.,

73 New street,

February 3, 1849.

New York.

European and North American Railway.

THE undersigned, the three persons first named in the first section of an act passed by the Legislature of Maine, and approved the twentieth day of August last past, entitled "An Act to incorporate the European and North American Railway Company," and being specially authorised therefor in and by said act, hereby give public notice that, for the purpose of receiving subscriptions to the stock of said company, as established by the act aforesaid, according to the provisions thereof, not exceeding forty thousand shares, books of subscription will be opened under the direction of the undersigned, according to the regulations prescribed, at the time and places following, viz:—On WEDNESDAY, the Twentieth day of August next, At Calais, Maine, with Noah Smith, Jr., Esq. Eastport, do. " Col. Bion Bradbury. Machias, do. " Walker & O'Brien, Ellsworth, do. " Seth Tisdale, Esq. Oldtown, do. " Gep. P. Sewall, Esq. Bangor, do. " Gep. W. Pickering, Esq. Orono, do. " Hon. Israel Washburn, Jr. Waterville, do. " Hon. Timothy Boutelle. Brunswick, do. " Prof. William Smyth. Augusta, do. " B. A. G. Fuller, Esq. Belfast, do. " John Y. McClintock, Esq. Portland, do. " John B. Brown, Esq. Portsmouth, N.H. " Hon. I. Goodwin. Salem, Mass. " Stephen A. Chase, Esq. Boston, do. " Francis Skinner & Co. Lowell, do. " John Wright, Esq. Worcester, do. " Charles Washburn, Esq. Providence, R.I. " Billings Brastow, Esq. Hartford, Conn. " Hon. C. F. Pond. New Haven, do. " Allen Prescott, Esq. New York, N.Y. " R. & G. L. Schuyler, No. 2 Hanover street. Albany, do. " John V. L. Pruyn, Esq. Troy, do. " Hon. John D. Willard. Philadelphia, Pa. " Hon. Wm. C. Patterson. Montreal, Canada, " Hon. John Young. Quebec, do. " J. B. Forsyth, Esq.

Said books will remain open for ten successive days at the places and with the persons aforesaid. Dated at Portland, this sixteenth day of June, A. D. 1851.

ELIJAH L. HAMLIN,
ANSON G. CHANDLER,
JOHN A. POOR.

Trautwine on R. R. Curves.

By JOHN C. TRAUTWINE, Civil Engineer, Philadelphia, Pa.

IN press, and will be published in a few days; accompanied by a Table of Natural Sines and Tangents to single minutes, by means of which all the necessary calculations may be performed in the field.

This little volume is intended as a field-book for assistants; and will be found extremely useful, as it contains full instructions, (with wood cuts) for laying out, and adjusting curves; with Tables of Angles; Ordinates, etc., for Curves varying from 13 miles, down to 146 feet Radius.

A portable Table of Natural Sines and Tangents to minutes, has for a long time been a desideratum among Engineers, independently of its use in laying out curves.

The volume is neatly got up in duodecimo; and handsomely bound in pocket-book form.

Sold by Wm. Hamilton, Actuary of the Franklin Institute, Philadelphia. Price \$1.

Also in press, and will be issued in a few weeks, "Trautwine's Method of Calculating Excavation and Embankment."

By this method, which is entirely new, (being now made known for the first time) the cubic contents are ascertained with great ease, and rapidly, by means of diagrams, and tables of level cuttings. Thin octavo; neatly half bound, \$1. For sale by Wm. Hamilton June 28, 1851.

Railroad Spikes.

THE subscribers are prepared to make and execute contracts for Railroad Spikes of a superior quality, manufactured by the New Jersey Iron Company, at Boonton. DUDLEY B. FULLER & CO., 139 Greenwich st. corner of Cedar.

THE Fourth Annual Exhibition of AMERICAN MANUFACTURES, by the MARYLAND INSTITUTE for the Promotion of the Mechanic Arts, will be opened in Baltimore on the 20th October, 1851.

The Exhibition will be held in the SPLENDID NEW HALL of the Institute, (fronting on Baltimore street) now being rapidly completed. Their edifice is centrally situated, chaste in its architecture, solid in its construction, and is by far the largest and most complete building in the United States, devoted to the Mechanic Arts. It may be added that this building is 355 feet long by 60 in breadth, with an average height of 68 feet, containing some twelve apartments, the largest of which is 255 feet by 60, and that the cost will be over \$70,000.

To this Exhibition, the Managers ask the attention of all engaged in industrial pursuits throughout the country, and cordially invite them to contribute specimens of their best productions for public inspection, and to compete for the prizes offered by the Institute. These prizes consist of GOLD and SILVER MEDALS, DIPLOMAS, etc., which were last year distributed as follows:—Gold Medals, 16; Silver ditto, 90; Diplomas, 60; besides 85 articles of Jewelry, etc., to ladies. Fair play will be scrupulously observed towards all, and every facility of Steam power, shafting, fixture, labor, &c., &c., will be amply provided free of expense. The machinery will be under a special superintendent, and a fine display of it is looked for. The last exhibition of the Institute was visited by more than 40,000 persons, and with their vastly improved accommodations and alterations, this number will be doubled at the coming display, embracing many Virginians, Pennsylvanians, and other strangers from the South and West.

Joshua Vansant, President.
Ed. Needles, } Vice Presidents.
F. A. Fisher, }
Samuel Sands, Rec. Sec'y.
Wm. Prescott Smith, Cor. Sec.
F. J. Clare, Treasurer.

BOARD OF MANAGERS.

Ross Winans,	Simeon Alden,
P. S. Benson,	J. T. Watson,
Josiah Reynolds,	W. Robinson,
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Thos. J. Lovegrove,	Adam Denmead,
A. Flannigan,	C. W. Bentley,
E. Larrabee,	Geo. R. Dodge,
John F. Davis,	Saml. E. Rice,
Wm. H. Keighler,	John F. Meredith,
Richard Edwards, Jr.,	W. Abrahams,
Wm. Bayley,	Thos. Trimble,
R. Eareskson,	Chas. Suter.

(The last nine in *Italics* are the Committee on Exhibition.)

The Hall will be opened for the reception of goods on MONDAY, 13th October; on the next Monday, 20th, at 7 P. M., the Exhibition will be formally opened to the public, and will positively close on Wednesday, 19th November. Articles for competition must be in the Hall by Thursday night, Oct. 16, unless delayed in shipment after starting in ample time.

Those who intend depositing, will give the Committee or the Agent, notice as early as possible, stating the nature of the goods, and probable amount of room required, to exhibit them to advantage.

Circulars, containing a view of the new Hall and the full regulations of the Committee, with special information, if required, may be had promptly, by addressing the undersigned, or the Institute's Agent, J. S. Selby, Baltimore, post-paid.

ADAM DENMEAD,
Chairman Com. on Exhibition for 1851.

SUPERIOR BLACK WRITING & COPYING INK.

Jones' Empire Ink.

87 Nassau st., Sun Building, New York city.

Net prices to the trade—

Quarts, per dozen,	\$1 50	6 oz. per dozen,	\$0 50
Pints,	1 00	4 " "	0 37½
8 ounces,	0 62½	2 " "	0 25

On draught per Gallon, 20 cents.

This is the best Ink manufactured. it flows freely, is a good copying ink, and will not mould, corrode, precipitate or decay. Orders for export, or home consumption, carefully and promptly attended to by

THEODORE LENT.

Notice to Contractors.

Engineers' Office, E. T. & V. R. R. Company, }
Greenville, E. T., June 5th, 1851. }

PROPOSALS will be received until the 1st day of October next, for the Grading and Masonry of that part of the E. T. & V. Railroad between the Eastern terminus of said road at King's Meadow, and Rheatown, in Greene County, a distance of about forty seven miles. A large amount of very heavy work, both in Grading as well as Masonry, will be found on this division, offering strong inducements to able Contractors.

Maps, Profiles, and Specifications can be seen at this Office, on and after the 20th of July next.

The Company reserve the right to reject all, or any proposals that they deem unsatisfactory.

Proposals should be directed to the Treasurer and Secretary of the E. T. & V. Railroad Company, Jonesborough, E. T.

LLOYD TILGHMAN,
Chief Engineer.

Lovegrove's Patent Cast Iron Water and Gas Pipes.

THE Subscriber, the Inventor and Patentee of the Centrifugal mode of giving form to metallic substances while in a molten state, is preparing to make Cast Iron Water and Gas Pipes, of any dimensions, at prices much lower than they can be made in the old manner, and the pipes warranted to stand a pressure of three hundred pounds to the square inch, and to be soft enough to drill. Steam Engines and all kinds of machinery. Cast Iron Doors and Frames, and Mill Castings of every description, made to order.

THOMAS J. LOVEGROVE,
Machinist and Founder,
West Falls Avenue, below Pratt st., Baltimore.

Superintendent of a Railroad.

THE Post of Superintendent of a Railroad is wanted by a middle aged man, who can give satisfactory evidence of his capacity, integrity and qualifications for such a situation. Letters addressed to A. B., care of the Editor of the Railroad Journal, New York, (to whom the above would refer), will receive immediate attention.

New York, June 11, 1851.

Spikes, Spikes, Spikes.

ANY person wishing a simple and effective Spike Machine, or a number of them, may be supplied by addressing J. W. FLACK, Troy, N. Y. or, MOORE HARDWAY, Richmond, Va. March 6, 1850.

Railway Iron.

3000 TONS, 50, 57, and 60 lb. Rails, made of best English Iron and under particular specifications.

Rails imported on commission or at a fixed price, delivered at a port in England, or at any port in the United States. Apply to

DAVIS, BROOKS & CO.,
June 5, 1851. 28 Beaver st., New York.

Wheel, Forge and Foundry Iron.

LOCUST GROVE Wheel Iron of great strength and superior chilling property. Balt. Charcoal Forge Iron, from Patuxent, Curtis Creek and Gunpowder furnaces.

Elkridge Foundry Iron, of superior strength and softness. Anthracite and Charcoal Iron from Pennsylvania and Virginia. Gas and Water Pipes, Lamp Posts from Elkridge furnace.

LEMMON & GLENN,
\$m9 62 Buchanan's Wharf, Baltimore.

To Railroad Companies.

SALISBURY REFINED IRON.

THE Undersigned, having enlarged and perfected his Works, is now prepared to furnish Locomotive Tire of a better quality than have heretofore been used. Railroad Companies who may wish it, will be furnished with a set for trial, not to be paid for until they are satisfied of their superior quality over any other. Also made at short notice, and in the best manner, Locomotive Cranks, Engine and Car Axles, and other Locomotive Forgings.

All work ordered from me will be made of Salisbury Iron, and done in the best manner.

Address HORATIO AMES,
Falls Village, Conn.

May 1, 1851.

TO CONTRACTORS.

Engineer's Office, S. S. R. Road Co. }
Petersburg, Va., May 27, 1851. }

PROPOSALS will be received at the Engineer's office, South Side Railroad, at Petersburg, Va., until the 31st of July next, for the construction of Appomattox Bridge, to be erected near Farmville.

The Bridge will be about 3000 feet long and 80 feet high; to consist of a wooden superstructure resting on abutments and piers.

The piers will be of brick or stone, to be determined after receiving the proposals.

Good brick earth can be obtained near the site of the Bridge.

The proposals may be made for the structure complete, or for the various items of work and materials, viz.: Masonry, furnishing Bricks or Timber; workmanship of laying Bricks and workmanship of superstructure.

Security will be required for the fulfilments of the contracts, and it will be necessary that each proposal be accompanied with a letter from a responsible person or persons, stating that they will become security.

C. O. SANFORD,
Ch. Engineer, S. Side R. Road.

Railroad Iron.

THE Subscribers, Agents for the Manufacturers, are prepared to contract for the delivery of Railroad iron at any port in the United States or Canada, or at a shipping port in Wales.

WAINWRIGHT & TAPPAN,
29 Central Wharf.

Boston, June 1, 1851.

Bowling Tire Bars.

40 Best Flange Bars	5½x2 inches,	11 feet long.
40 " "	5x2 " "	7 feet 8 in. long.
40 " Flat " "	6x2 " "	11 feet long.
40 " " "	6x2 " "	7 feet 8 in. long.

Now in store and for sale by

RAYMOND & FULLERTON,
45 Cliff street.

To Railroad Companies, Machinists, Car Manufacturers, etc., etc.

CHARLES T. GILBERT,
NO. 80 BROAD ST., NEW YORK,

IS prepared to contract for furnishing at manufacturer's prices—

Railroad iron,
Locomotive Engines,
Passenger and Freight Cars,
Car Wheels and Axles,
Chairs and Spikes.

Orders are invited; and all inquiries in relation to any of the above articles will receive immediate attention.

JOHNSON, CAMMELL & Co's Celebrated Cast Steel,

AND ENGINEERING AND MACHINE FILES, which for quality and adaptation to mechanical uses, have been proved superior to any in the United States. Every description of square, octagon, flat and round cast steel, sheet, shovel and railway spring steel, best double and single shear steel, German steel, flat and square, goat stamps, etc. Saw and file steel, and steel to order for any purposes, manufactured at their Cyclops Steel Works Sheffield.

JOHNSON, CAMMELL & CO.,
24 Cliff St., New York.

November 23 1849.

Car Wheel Iron.

100 Tons "Columbia" No. 2 Cold Blast Charcoal Iron.

300 Tons "Salisbury" No. 1, do. do.
For sale by CHARLES T. GILBERT,
No. 80 Broad st.

New York, Sept. 21, 1850.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

To Railroad Companies, etc.



The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

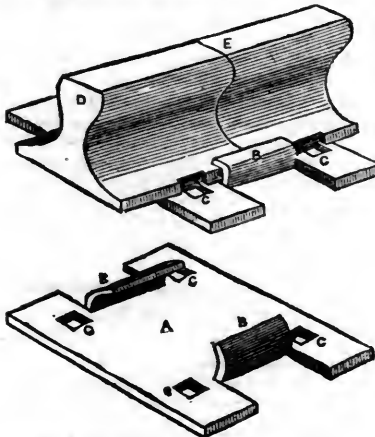
I also invite attention to an improved PATENT SPRING LOCK, for SLIDING Doors to Freight and Baggage Cars, now in use upon the Pennsylvania Central, Greenville and Columbia, S.C., Reading, Pa., and other Railroads.

Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH,
46 South 8th St. Philadelphia.

May 9, 1851.

The American Railroad Chair Manufacturing Co.



ARE prepared to make WROUGHT IRON RAIL ROAD CHAIRS, of various sizes, at short notice.

By use of the WROUGHT IRON CHAIR, the necessity of the wedge is entirely done away—the lips of the chair being set, by means of a sledge or hammer, close and firmly to the flange of the rail.

The less thickness of metal necessary in the Wrought Iron Chair gives much greater power and force to the spikes when driven—and consequently a much less liability to the spreading of the rails by reason of the spikes drawing or becoming bent.

The less weight necessary in the Wrought Iron Chair, will enable us to furnish them at a cost much below that of CAST IRON CHAIRS.

DESCRIPTION OF THE ABOVE CUTS.

Figure 1 is a perspective view of the rail secured in the chair, and fig. 2 is a perspective view of the chair itself. D, E, are sections of two rails placed together, and secured at the joint on the chair by the jaws B, B. The chair is bolted down by spikes C, C. In fig. 2, the chair is represented as made of a single block or plate A of wrought iron.

The chair is set in its proper place on the track, spiked down, and the ends of the two rails brought together within the jaws as represented in fig. 1.

For further information address,

N. C. TROWERIDGE, Secretary,
Poughkeepsie, N. Y.

June 1, 1851.

Railroad Commission Agency.

THE Subscriber offers his services to Railroad Co's and Car Makers for the purchase of equipment and furniture of roads and depots and all articles and materials required in the construction of cars, with cash or approved credit. No effort will be spared to select the best articles at the lowest market price.

He is sole Agent for the manufacture of the ENAMELED CAR LININGS, now in universal use. The best Artists are employed in designing new styles, and he will make to order pieces with appropriate designs for every part of the car, in all colors, or with silver grounds and bronzed or velvet figures.

He is also Agent for Page's Car Window Sash Fasteners, which is preferred by all who have used it to any other.

CHARLES STODDER,
75 Kilby st., Boston.

June 20, 1851.

3m.

LOWMOOR
AND
U. S. BEST FINCH IRON.
To Iron Merchants.

JOHN FINCH & SONS, Iron Merchants, Liverpool, now are, and for more than twenty years past have been, sole Agents for the LOWMOOR IRON COMPANY, for the United States and Canada, for the sale of their well known Railway Tire Bars, and Axles, Piston Rods, Boiler Plates, Angle, Rivet, and all other kinds of Lowmoor Iron; also, sole Agents for the sale of the superior St. flordshire Iron stamped "FINCH CROWN" and "U. S. BEST FINCH;" and Merchants and Wholesale Dealers in all other kinds of British Iron.

We hereby inform our friends and the public that we have this day appointed Mr. WM. BAILEY LANG, of Boston, as our only representative to receive orders and to transact our general business in the United States.

For JOHN FINCH & SONS.,
JOHN FINCH Sen.

Boston, April 11, 1851.

LOWMOOR and other Bent, Welded and Blocked RAILWAY TIRES, ready for use, E. FINCH'S Patent Dovetailed and other kinds of WROUGHT IRON RAILWAY WHEELS, with, or without the finished Axles, for Locomotives and for Passenger and Merchandise Cars, also Wrought Iron Railway Chairs, Railway Spikes, etc.

To the Managers of Railways, Engineers and others: Gentlemen:—We, FINCH & WILLEY, Engineers, Liverpool, Manufacturers of the above articles, respectfully inform you that we have this day appointed Mr. WM. BAILEY LANG, of Boston, as our sole Agent for the sale of said articles, and the transaction of our business in the United States of America, and for whom we solicit your kind attention and patronage.

For FINCH & WILLEY,
JOHN FINCH, Sen.

Boston, April 11, 1851.

Having accepted the above Agencies, I beg leave to solicit your orders, which shall at all times receive my prompt and careful attention. Please address all communications either to MESSRS. JOHN FINCH & SONS or MESSRS. FINCH & WILLEY, Liverpool; or to me, at my Steel Warehouse, No. 9 Liberty Square, Boston. Yours very respectfully,

WM. BAILEY LANG.

Boston, April 11, 1851.

The following are testimonials of the quality of FINCH & WILLEY'S WROUGHT IRON RAILWAY WHEELS from the Yorkshire and Lancashire Railway Co., one of the largest in Great Britain, and from the London and North Western Railway Co., the largest Railway Company in the world.

LONDON AND NORTH WESTERN RAILWAY,
(Northern Division.)
WAGON DEPARTMENT, ORDSALL LANE,
Manchester, January 4, 1851.

Gentlemen:—I have very great pleasure in bearing my testimony to the excellent quality of your Wrought Iron Railway Wheels.

This Company have many of them now in use on their lines, and during my experience, as their Superintendent, which is now upwards of 9 years standing, I have not known any of them to fail during that time.

I am, Gentlemen, yours, truly,

OWEN OWENS.

MESSRS. FINCH & WILLEY,
Windsor Foundry. }

LANCASHIRE AND YORKSHIRE RAILWAY,
Wagon Department, Jan. 3, 1851. }

Messrs. Finch & Willey,
Gentlemen: In reply to your request writing me to give my opinion of the 700 sets of Wrought Iron Wheels you furnished this company during the years 1847 and 1848, I have much pleasure in stating that we have not had a single instance of your Wheels failing in any respect, and I consider them equal if not superior to any Wheels we have on this line of railway. The Tires being LOWMOOR Iron, 1½ inch thick, I have no doubt they will run under ordinary goods' wagons 12 years without any repairs more than the tires turning up.

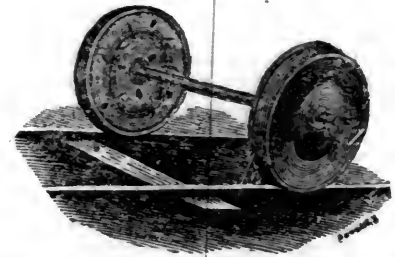
I am Gentlemen,
Yours, truly, WM. EMMETT.

NOTE.—4 Wheels and 2 Axles are one set, consequently this order contained 200 WHEELS and 100 AXLES; value over \$100,000.

Boston Locomotive Works,
—Late Hinkley & Drury—
No. 380 Harrison Avenue,
BOSTON.

Locomotive and Stationary Steam Engines; Boilers; Iron, Brass, Copper and Composition Castings; Coppersmith's Work, and all kinds of Railroad Machinery furnished at short notice.

ALSO



Van Kuran's Improved Railroad Wheel,

Patented May 1, 1849. Manufactured under the personal superintendence of the Patentee, as above.

Orders for any quantity of wheels executed with dispatch, and wheels and axles fitted in the very best manner and at the lowest rates. Address

DANIEL F. CHILD, Treasurer, Boston.



Providence Tool Co.,

MANUFACTURERS OF

Plane Irons, Tooth Irons, Soft Moulding and Rabbet Irons, Cornice Irons, Plow Bits, and Planing Machine Knives:

NUTS, WASHERS AND BOLTS.

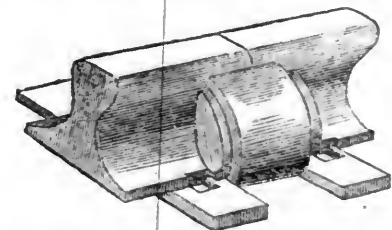
—ALSO—

PLATE HINGES AND PICK AXES.

They are prepared to execute orders for all descriptions of Cold Punching and Job Work.

WM. FIELD, Agent. RUFUS WATERMAN, Treas.
PROVIDENCE, R. I.

Railroad Iron,
SPIKES, AND
WROUGHT IRON CHAIRS.



THE Undersigned, Agent for Manufacturers, is authorized to contract for Welsh Railroad Iron of the best quality, and deliverable at any port on favorable terms, also Spikes and Wrought Iron Chairs, made from the best iron, and of any pattern and weight. The new Wrought Iron Chair, with the introduction of a "Key," as per the annexed plan, will be found a great improvement on the old pattern.



Boiler Plates of superior quality, perfect regularity in the squaring and thickness, and made with great care.

Samples can be seen at our office, No. 20 Beaver
CHARLES ILLIUS

RAILROAD CAR MANUFACTORY
TRACY & FALES,
GROVE WORKS, HARTFORD, CONN.
 Passage, Freight and all descriptions of
RAILROAD CARS,
 AS WELL AS
LOCOMOTIVE TENDERS,
 Made to order promptly.

The above is the Largest Car Factory in the Union. In quality of Material, and in Workmanship, Beauty and Good Taste, as well as Strength and Durability, we are determined our work shall be unsurpassed.
JOHN R. TRACY. THOS. J. FALES.

CHILLED TIRES FOR
LOCOMOTIVE ENGINES.
To Railroad Companies.

THE Undersigned, Assignee of Letters Patent, respectfully invites the attention of Railroad Companies to the **CHILLED TIRES FOR LOCOMOTIVE ENGINES**, which he offers for sale.

These Tires were first introduced by Messrs. Perkins & McMahon, upon the Baltimore and Ohio Railroad, in 1843, where, after a long and severe trial, they were generally adopted, on both passenger and freight engines, and now have entirely superseded Wrought Tires on that road, on which are many engines of the heaviest class, which ascend grades of *eighty-five feet per mile*, taking with them *one hundred and twelve tons*, exclusive of cars. This performance shows in some measure the adhesive character and strength of the Tire.

During a service of seven years, these Tires have very much exceeded in durability those of wrought iron, while their first cost, and expense of repairs, is more than *fifty per cent. less*. They also retain more equally their diameter and proper form of tread, which is a point of much value in engines with coupled wheels.

It is believed these Tires are peculiarly well adapted to freight engines, as the objection to coupling the wheels of locomotives is the *increased friction*, arising principally from the *unequal wear* of wrought tires; and hence most of the freight engines where wrought tires are used, have but *four wheels as drivers*, with frequently a weight of *sixteen tons*, or more, upon them, which may be of no disadvantage to the engine, although its effect upon the track is like a car with *sixteen tons* upon four wheels, and it is presumed no one would permit cars so heavily loaded to pass over their road.

As Chilled Tires wear more *uniformly* than those of wrought iron, there can be no doubt when these are used, that the weight necessary for adhesion may be distributed upon more driving wheels, without any material disadvantage to the engine, and thus placing *less weight* upon a single point, would relieve the track, and secure, to a great extent, the object sought to be gained by the plan so frequently proposed, of using *light engines*, which would bring with it the necessity of increasing the number of trains and train hands.

The complete success of Chilled Tires upon the Baltimore and Ohio road for the last seven years, and upon other roads for a more subsequent period, is a strong proof of their *practical character*, while their *cheapness* and *durability*, it is believed, recommend their trial by every railroad company.

It may be thought by some that the *whole wheel for strength*, would be preferable to wheels with tires, but experience shows the latter to be a much *stronger and more durable* wheel, on account of its freedom from *tension*, which is never the case with a *whole wheel*. That *TENSION* has much to do with the breaking of wheels and tires, may be inferred from the fact, that a set of *chilled tires*, five feet diameter, on a first class passenger engine, have been in constant service during the past winter, on one of our Eastern roads, and have withstood the severities of the season, where *whole wheels and wrought tires* have broken. And it may be proper to remark, that wherever chilled tires have been introduced, *whole wheels as drivers* are invariably abandoned, they being far more expensive to maintain, as there is a *crank* to form as often as a wheel is renewed, which is *not* the case on the renewal of a tire.

The peculiar manner of *fastening* these tires to the wheel without *shrink*, applies equally well to wrought tires, and is of much importance where they are used, as it secures them against the *TENSION* or *STRAIN* they receive by the present plan of *shrinking* them to the wheels, which undoubtedly is the cause of wrought tires breaking so frequently, particularly in cold weather, which produces a greater *contraction* of the tire, thereby increasing the *strain*. This plan makes the tire perfectly secure upon the wheel, and is attended with *less expense*, as will be seen by the following testimonials, which are respectfully submitted.

Lowell, March. 1851.

L. B. TYNG.

TESTIMONIALS.

Baltimore and Ohio R. R. Office, }
 Jan 2, 1850. }

Mr. L. B. TYNG, Lowell, Mass.—Sir: Your favor of the 26th ult., is before me, asking my opinion of the Chilled Cast Iron Tires, of Messrs. Perkins & McMahon, patents. I do not hesitate to speak favorably of them, nor to say that I would give them the preference over wrought iron tires, whenever the adhesive tenacity of the latter to the rails is not all called for, there being somewhat less adhesion to the chilled wheel.

This can, however, scarcely be called a practical point, as nearly all of the Passenger Engines now in use have a surplus of adhesion, and nearly all Freight Engines being provided with the sand box, for emergencies arising from sharp curves, heavy grades or wet rails.

The Chilled Tire is very much cheaper in first cost, will last longer, and offers a facility for putting it on the wheel, rendering comparison with the wrought iron tire an absurdity—it not being necessary even to take the wheels from the machine for the purpose.—Many of them are in successful use on this road, and I consider its curves and other peculiarities the most severe of all existing tests. One set of five feet in diameter, has run 50,000 miles under one of our Passenger Engines, and will to all appearance, run as many more; and, in the mean time, they have not cost a dollar for repairs or adjustment.

It may be suggested that they might not stand a Northern frost. This is possible; but I believe otherwise, as the weather here is occasionally as severe as in Boston, and if I had charge of a northern road, after the experience I have had here, I would make their trial one of my very first acts.

Respectfully your Ob't Serv't,
 WM. PARKER, General Supt., etc.

January 29, 1851.

Philadelphia, Wilm. and Balt. R. R. Office, }
 Wilmington, Del. }

Mr. L. B. TYNG—Sir: We have used the solid Cast Iron Chilled Wheel, and Cast Iron Chilled Tire, for engine drivers, on this road since 1842. When wrought iron tires under new engines, purchased from time to time, wear out, I invariably replace them with the Chilled Tire of Messrs. Perkins & McMahon, patents.

These Tires will last, on the average, three times as long as wrought tires; seldom requiring renewals under three years, and lasting much longer usually. We have a set which has been in constant use for five years, and still in fair order. The adhesion supplied by the Chilled Tires, I find in practice with engines of the same model and weight, to be equal to that given by wrought tires. This is certainly a fact, though not an acknowledged one, in general. Those who think otherwise, will in time change their opinions.

I am of opinion that the Chilled Tire is as safe as the wrought, at any temperature. In eight years use, we have broken but one tire out of more than fifty, and that by a violent concussion on the occasion of a run off.

The use of the Chilled Tire, and the ease and rapidity with which it may be replaced, would certainly enable a road to do the same amount of work with fewer engines—since but little time would be lost in laying up an engine for new tires, or for turning down old ones, as must be done when wrought tires are used.

I am yours respectfully,

I. R. TRIMBLE,
 Engineer and General Supt.

Office Eastern R. R., Salem, Dec. 23, 1850.

L. B. TYNG, Esq.—Sir: Your favor of Nov. 30th, inquiring respecting the Chilled Cast Iron Tires, came duly to hand, and in answer, I will say, that this road have in use one set cast and fitted to the wheel, by Messrs. Bush & Lobdell, upon a twenty ton first class Passenger Engine, which has run in eight months, 26,639 miles, and to all appearance, are about as good as when they first commenced running.

In regard to the comparative expense of the cast or wrought iron tires, I do not hesitate to say that the difference would be vastly in favor of the former.

I have ordered a second set, and they will be put on to the engine immediately. Respectfully,
 JOHN KINSMAN, Supt. E. R. R.

Chilled Tires for the various sized wheels, or wheels with either chilled or wrought tires fitted up upon this plan, may be had of the following persons:

ALDRICH, TYNG & Co, Lowell, Mass.
 SMITH & PERKINS, Alexandria, Va.

Rights for using Tires upon the above plan, may be had on reasonable terms, of L. B. TYNG, Lowell, and at N. York.

Railroad Iron.

THE UNDERSIGNED, HAVING made arrangements abroad, are prepared to contract for the delivery of Foreign rails, of approved brands upon the most favorable terms.

They will also make contracts for American rails, made at their Trenton works, from Andover Iron, in whole or in part, as may be agreed upon.

They are prepared to furnish Telegraph, Spring and Market Wire; Braziers and Wire Rods; Rivets and Merchant Bars to order, all made exclusively from Andover Iron. The attention of parties who require iron of the very best quality for special purposes, is respectfully invited.

COOPER & HEWITT,
 17 Burling Slip, New York.

February 15, 1850.

S. S. Keyser & Co.,
IRON WAREHOUSE,
 Corner of South and Pratt Streets,
 BALTIMORE, MD.

Selling Agents for the Rough and Ready Bar Iron and Elk Boiler and Flue Iron Rolling Mills, Sarah and Taylor Furnaces, and Wrightsville Hollow Ware Foundry, and Dealers in Bar and Sheet Iron, and Cast, Sheer, German, Blister, Spring and Electroplated Steel, etc., etc.

Iron.

200 Tons Fishkill Charcoal Iron for sale on reasonable terms, also from 1000 to 5000 tons Fishkill Hematite Ore—delivered at Poughkeepsie or New York. Samples of the ore may be seen at the store of Messrs. Hoffman, Bailey & Co., No. 62 Water st., New York. Enquire by letter to
 NORMAN M. FINLAY,
 Poughkeepsie, Dutchess county, N. Y.

July 10, 1851.

ENGINEERS.

Atkinson, T. C.,
 Mining and Civil Engineer,
 Orange and Alexandria Railroad, Alexandria, Va.

Clement, Wm. H.,
 Little Miami Railroad, Cincinnati, Ohio.

Cozzens, W. H.,
 Engineer and Surveyor, St. Louis, Mo.

Alfred W. Craven,
 Chief Engineer Croton Aqueduct, New York.

C. Floyd-Jones,
 Central Railroad, Decatur, Illinois.

Gay, Edward F.,
 Columbia and Philadelphia Railroad, Philadelphia Pa.

Gilbert, Wm. B.,
 Rutland and Burlington Railroad, Rutland, Vt.

Gzowski, Mr.,
 St. Lawrence & Atlantic Railroad, Montreal, Canada.

Grant, James H.,
 Nashville and Chattanooga R. R., Nashville, Tenn.

S. W. Hill,
 Mining Engineer and Surveyor, Eagle River,
 Lake Superior.

Holcomb, F. P.
 Southwestern Railroad, Macon, Ga.

Latrobe, B. H.,
 Baltimore and Ohio Railroad, Baltimore, Md.

Miller, J. F.,
 Buffalo and Conhocton Valley Railroad, Bath, N. Y.

Morris, Elwood,
 Engineer, Chartiers Co., Pittsburgh, Penn.

Nott, Samuel,
 Lawrence and Manchester Railroad, Boston.

Osborne, Richard B.,
 Cattawissa, Williamsport and Erie R. R., Tamaqua.

Prichard, M. B.,
 East Tennessee and Georgia R. R., Cleveland, Tenn.

W. Milnor Roberts,
Bellefontaine and Indiana Railroad, Marion, Ohio.

Shanly, Walter,
Chief Engineer Bytown and Prescott Railway,
Prescott, Canada.

Roberts, Solomon W.,
Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

Sanford, C. O.,
South Side Railroad, Virginia.

Schlatter, Charles L.,
Northern Railroad (Ogdensburg), Malone, N. Y.

Steele, J. Dutton,
Pottstown, Pa.

Trautwine, John C.,
Civil Engineer and Architect, Philadelphia.

Tinkham, A. W.,
United States Fort, Bucksport, Me.

Troost, Lewis,
Alabama and Tennessee Railroad, Selma, Ala.

Whipple, S.,
Civil Engineer and Bridge Builder, Utica, N. Y.

HOTELS.

**DAVIS'S
ALHAMBRA HALL,**
No. 136 Pratt street,
BALTIMORE.

Exchange Hotel,
Adjoining Eastern Railroad Depot,
BUFFALO, N. Y.
BY.....**FISS & SPERRY,**
Late of Delevan House, Albany.

MANSION,
Corner of Maine and Exchange Streets,
P. DORSHIMER. BUFFALO.

Barnum's City Hotel,
MONUMENT SQUARE, BALTIMORE.
This Extensive Establishment, erected expressly
for a Hotel, with every regard to comfort and convenience,
is situated in the centre and most fashionable
part of the city, and but a few minutes' walk from the
Railroad Depots and Steamboat Landings.
The House has lately undergone a thorough repair,
embracing many valuable improvements, and will accommodate 250 Guests. **BARNUM & CO.**

American Hotel,
Pratt street, opposite the Railroad Depot,
BALTIMORE.
HENRY M. SMITH.....Proprietor.
Late of the Exchange & St. Charles Hotels, Pittsburg

Washington Hotel,
BY **JOHN GILMAN,**
\$1 Per Day.
No. 206 Pratt street, (near the Depot),
BALTIMORE.

**GUY'S
United States Hotel,**
(Opposite Pratt street Railroad Depot),
BALTIMORE.
JOHN GUY. **WILLIAM GUY.**

DUNLAP'S HOTEL,
On the European Plan,
NO. 135 FULTON STREET,
Between Broadway and Nassau St.,
NEW YORK.

JONES' HOTEL,
NO. 152 CHESTNUT STREET,
PHILADELPHIA.
BRIDGES & WEST, Proprietors.

Fountain Hotel,
LIGHT STREET, BALTIMORE,
MURSTON.....Proprietor.

BUSINESS CARDS.

Walter R. Johnson,
CIVIL AND MINING ENGINEER AND ATTORNEY FOR PATENTS. Office and Laboratory, F St.,
opposite the Patent office, Washington, D. C.

Lithography.
JOHN P. HALL & CO.,
161 Main at., Buffalo, (Commercial Advertiser Build.)
Are prepared to execute all kinds of Lithography
in good style and at reasonable rates. Particular
attention will be paid to Engraving Railroad Maps, Engineer's
Plans and drafts, etc., and orders in this line
are respectfully solicited.

**Cumberland, (Md.) Coals for
Steaming, etc.**
ORDERS RECEIVED FOR AND FILLED
by
J. COWLES, 27 Wall St., N. Y.

J. & L. Tuckerman,
IRON COMMISSION MERCHANTS,
AND MANUFACTURERS OF
ULSTER BAR & POUGHKEEPSIE PIG IRON,
69 WEST STREET,
NEW YORK

Henry I. Ibbotson,
IMPORTER of Sheffield and Birmingham Goods.
Also, Agent for the Manufacture of Telegraph
Wire.
218 PEARL ST., NEW YORK.

Charles T. Jackson, M. D.,
STATE ASSAYER, late Geologist to Maine, Rhode
Island, New Hampshire, and the United States,
offers his services to his friends and the public in making
any Chemical, Mineralogical or Geological re-
searches that may be required for the improvement of
Agriculture and the Manufacturing Arts. Particular
attention will be paid to the exploration of mines and
to assaying of ores of the metals.
State Assayer's office, 31 Somerset st.
Boston Sept. 3, 1850.

STEEL AND FILES.
R. S. Stenton,
20 CLIFF STREET, NEW YORK,
AGENT FOR

J. & RILEY CARR,
BAILEY-LANE WORKS, SHEFFIELD,
Manufacturers of Cast, Shear, German, Blister, and
Spring Steel,
Of all descriptions, Warranted Good.
FILES.

Manufacturers of Machinists' Warranted Best Cast
Steel Files, expressly for working upon Iron and Steel,
made very heavy for recutting.
A full Stock of Steel and Files at all times on
hand. 6m4

Dudley B. Fuller & Co.,
IRON COMMISSION MERCHANTS,
No. 139 GREENWICH STREET,
NEW YORK.

Manning & Lee,
GENERAL COMMISSION MERCHANTS,
NO. 51 EXCHANGE PLACE,
BALTIMORE.

Agents for Avalon Railroad Iron and Nail Works.
Maryland Mining Company's Cumberland Coal 'CED'
—'Potomac' and other good brands of Pig Iron.

Samuel Kimber & Co.,
COMMISSION MERCHANTS
WILLOW ST. WHARVES, PHILADELPHIA.
AGENTS for the sale of Charcoal and Anthracite
Pig Iron, Hammered Railroad Car and Locomotive
Axles, Force Pumps of the most approved construction
for Railroad Water Stations and Hydraulic
Rams, etc., etc.
July, 27, 1849.

James Herron, Civil Engineer,
OF THE UNITED STATES NAVY YARD,
PENSACOLA, FLORIDA.,
PATENTEE OF THE
HERRON RAILWAY TRACK.
Models of this Track, on the most improved plane,
may be seen at the Engineer's office of the New York
and Erie Railroad.

PLUSHES

FOR
Railway Cars & Omnibuses.
F. S. & S. A. MARTINE,
112 WILLIAM ST., NEAR JOHN.

ARE now receiving a large and complete assortment of Plain and Figured PLUSHES, of their
own importation, which will be sold at the lowest
market price, viz: Crimson, Maroon, Scarlet, Green,
Blue, Purple, etc.
ALSO—CURLED HAIR, the best manufactured
in market.

**Manufacture of Patent Wire
ROPE AND CABLES,**
For Inclined Planes, Suspension Bridges, Standing
Rigging, Mines, Cranes, Derrick, Tilters, &c., by
JOHN A. ROEBLING, Civil Engineer,
TRENTON, N. J.

FORGING.
Ranstead, Dearborn & Co.,
MANUFACTURERS OF
LOCOMOTIVE CRANKS AND CAR AXLES,
ALSO
WROUGHT IRON SHAFTING,
And All Kinds of Hammered Shapes.
Office 25 Foster's Wharf, Boston.

Samuel D. Willmott,
MERCHANT, AND MANUFACTURER OF
CAST STEEL WARRANTED SAWS,
—AND FILES—
IMPORTER OF THE
GENUINE WICKESLEY GRINDSTONES
NO. 8 LIBERTY STREET,
NEW YORK.

Railroad Instruments.
THEODOLITES, TRANSIT COMPASSES,
and Levels, with Fraunhofer's Munich Glasses,
Surveyor's Compasses, Chains, Drawing Instru-
ments, Barometers, etc., all of the best quality and
workmanship, for sale at unusually low prices, by
E. & G. W. BLUNT,
No. 179 Water St., cor. Burling Slip,
New York, May 19, 1849.

Knox & Shain,
MANUFACTURERS OF
LEVELS, TRANSITS AND SURVEYING
COMPASSES.
No 72 Dock st. first door south of Walnut, west side,
PHILADELPHIA.

IRON.

Iron.
Pig Iron, Anthracite and Charcoal; Boiler and Flue
Iron, Spring and Blistered Steel, Nail Rods, Best Re-
fined Bar Iron, Railroad Iron, Car Axles, Nails, Stove
Castings, Cast Iron Pipes of all sizes, Railway Chairs
of approved patterns for sale by
COLEMAN, KELTON & CAMPBELL,
109 N. Water St., Philadelphia.

Iron Store.
THE Subscribers, having the selling agency of the
following named Rolling Mills, viz: Norristown,
Rough and Ready, Kensington, Triadelphia, Potts-
grove and Thorndale, can supply Railroad Companies,
Merchants and others, at the wholesale mill prices for
bars of all sizes, sheets cut to order as large as 58 in.
diameter; Railroad Iron, domestic and foreign; Loco-
motive tire welded to given size; Chairs and Spikes;
Iron for shafting, locomotive and general machinery
purposes; Cast, Shear, Blister and Spring Steel; Boil-
er rivets; Copper; Pig Iron, etc., etc.

MORRIS, JONES & CO.,
Iron Merchants,
Schuylkill 7th and Market Sts., Philadelphia.
August 16, 1849. 1v33

Glendon Refined Iron.
Round Iron, Band Iron, Hoop Iron,
Square " Flat " Scroll "
Axles, Locomotive Tyres,
Manufactured at the Glendon Mills, East Boston, for
sale by **GEORGE GARDNER & CO.,**
5 Liberty Square, Boston, Mass.
Sept. 15, 1849. 3m37

Bowling Iron. Stamped B.O.

Railway Tire Bars
Locomotive and other Axles
Boiler Plates
Rivet Iron
Locomotive Frame do
Bars,
and every other description of this superior Iron.

The subscribers, agents for the sale of Bowling Iron, are prepared to execute orders for importation, especially for railway and machinery uses, with despatch from the manufacturers.

RAYMOND & FULLERTON, 45 Cliff st.

**Ibbotson, Brothers & Co's
CELEBRATED CAST STEEL**

AND

Best Cast Steel Royal Improved Files, well known as better adapted for Engineers' and Machinists' purposes than any now in use in the United States.

Every description of Square, Octagon, Flat and Round Cast Steel, Sheet, Shovel and Railway Spring Steel, etc., and Steel to order for any purposes—manufactured at their works in Sheffield—and universally known by the old stamp "Globe."

HENRY I. IBBOTSON, Agent,
218 Pearl st., New York.

**Smith & Tyson,
IRON COMMISSION MERCHANTS,
BALTIMORE.**

REFINED Junata Charcoal Billet Iron for Wire. Do. for Bridging, of great strength.
Flat Rock, Boiler and Flue Iron, rolled to pattern.
Elba, Wheel Iron of great strength and superior chiling properties. Elba Forge Iron, American Shot Iron, Cut Nails, Spikes and Brads, Nail and Spike rods, Railroad Spikes of superior quality, Wrought Chair plates of any pattern, punched or plain.

**WILLIAM JESSOP & SONS'
CELEBRATED CAST-STEEL.**

The subscribers have on hand, and are constantly receiving from their manufactory,

PARK WORKS, SHEFFIELD,

Double Refined Cast Steel—square, flat and octagon.
Best warranted Cast Steel—square, flat and octagon.
Best double and single Shear Steel—warranted.
Machinery Steel—round.

Best and 2d gy. Sheet Steel—for saws and other purposes.

German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.

Genuine "Sykes," L Blister Steel.

Best English Blister Steel, etc., etc.

All of which are offered for sale on the most favorable terms by
W. M. JESSOP & SONS,
91 John street, New York.

Also by their Agents—

Curtis & Hand, 47 Commerce street, Philadelphia.
Alex'r Fullerton & Co., 119 Milk street, Boston.
Stickney & Beatty, South Charles street, Baltimore.
May 6, 1843.

Railroad Iron.

P. O. Railway Tires, Railway Wheels,
Scotch Pig Iron, Tin Plates and Banca Tin,
Muntz's Patent Metal Sheathing,
Baltimore Copper.

Contracts for Rails made on behalf of the manufacturers, for delivery at any ports in the United States, at fixed prices.

Bowling Tires and Tire Bars and Scotch Pigs imported to order.

Muntz's Ship-sheathing, and a general stock of Tin Plates and Banca Tin in store, and for sale by
RAYMOND & FULLERTON, 45 Cliff st.

IRONDALE PIG METAL, MANUFACTURED
and for sale by the Bloomsburg Railroad Iron Co.
LINDLEY FISHER, Treasurer.
75 N. Water St., Philadelphia.

Car Wheel Iron.

THE celebrated cold blast "Conowingo" Pig Iron, for Railroad Wheels, Chilled Rolls, etc., for sale by
E. PRATT & BROTHER,
Baltimore, Md.

Railroad Iron.

3,000 TONS C. L. MAKE 63½ lbs. per yard, now landing and to arrive.

Also contracts made for future delivery of above superior make English Iron.

300 Tons Banks Best Iron, Round, Square and Flat.
200 " English Bar " " " "

10 " 9-16 Square Iron for Railroad Spikes.

For sale in lots to suit purchasers by

DAVID W. WETMORE.
New York, March 26, 1850.

**PATENT EXCELSIOR SPRING
for Railroad Cars, Locomotives, etc.**

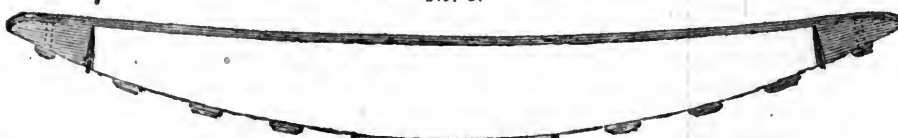
No. 1.—At Rest.



No. 2.—Under Heavy Pressure.



No. 3.



THESE Springs are composed of a Plate of Steel with Oak or Ash Wood, firmly riveted thereto, having saw kerfs in which are inserted flat plates of metal. The Spring is very powerful and yet sensitive.

They are now being manufactured and sold by the Excelsior Spring Company, under a Patent granted on 20th May, 1851.

The above Drawing, No. 1, represents a side view of the Spring when it is at rest. No. 2, shows the same when under heavy pressure. No. 3, represents a Spring having only two plates instead of the usual number inserted in the wood.

This is undoubtedly the best Spring of the day—it is very simple—easy of application—light—cannot get out of order—and it is without any exception the most adjustable spring now made—for it will spring fifty

or five thousand pounds with the same ease.

The cost of the springs is very much less than that of any other.

The Excelsior Spring Co., determined that every spring shall be of the best quality, have established a Factory, where each spring is made directly under the eye of Mr. Bissell, the inventor—and before a spring is allowed to leave the factory it is subjected to a much severer test than it ever can be when at work. Each Spring is guaranteed to perform the required work.

Any person infringing on this patent will be prosecuted.

Office of EXCELSIOR SPRING COMPANY.
33 Broadway, New York.

June 7, 1851.

Railroad Spikes, Boiler Rivets, etc.

THE Subscribers, Agents for the sale of James S. Spencer's, Jr., Railroad and Boat Spikes, Boiler Rivets, and Wrought Iron Chairs for Railroads, made at his Works near this city, will execute all orders with promptness, despatch, and of the best quality.

ALSO IMPORTERS of English refined and Merchant bar Iron; Extra refined Car and Locomotive Axles (from 3½ to 6½ inches in diameter); B. O. Locomotive Tire (welded by Baldwin). Also, supply Boiler and Flue Iron cut to pattern or otherwise.—Spring, Shear, and Cast Steel, etc., etc.

T. & E. GEORGE.

Philadelphia, November 14, 1850.

Railroad Iron.

THE Undersigned, Agents for Manufacturers, are prepared to contract for the delivery of English, Welsh and Scotch Rails, of any pattern and weight, also for every description of English, Welsh, Scotch, and Swedish Iron, Railway Chairs and Spikes, Rivets, Bolts, Nuts, Washers, Chain Cables, Anchors, Tin Plates, German Spelter, Iron Castings, and every description of Machinery.

WILLIAM BIRD & CO.,

Iron and Tin Plate Merchants,

44 Wall st., New York.

And at 5 Martin's Lane, City, London,

and 140 Buchanan st. Glasgow.

July 27th, 1850.

Railroad Iron.

THE "Montour Iron Company" is prepared to execute orders for Rails of the usual patterns and weights, and of any required length not exceeding 30 feet per rail. Apply to

THOS. CHAMBERS, President,

66 Broadway, N. Y.,

Or to the Agents,

CHOUTEAU, MERLE & SANFORD,

NO. 51 New at., New York.

September, 1850.

Railroad Iron.

THE Undersigned, Agents for the Manufacturers, are prepared to contract to deliver free on board at shipping port in England, or at port of discharge in the United States, Rails of superior quality, and of such weight or pattern as may be required.

VOSE, PERKINS & CO.,

74 South St.

New York, June 1, 1851.

Railroad Iron.

1650 Tons, weighing about 61 lbs. per yard, 40 tons, weighing about 52 lbs. per yard, and 825 tons, weighing about 53½ lbs. per yard, of the latest and most approved patterns of T rail, for sale by
BOORMAN, JOHNSTON & CO.,
119 Greenwich street.

New York, Aug. 26, 1850.

N.B.—B. J. & Co are also prepared to take contracts for English rails, delivered in any of the Atlantic ports of the United States.

Tredegar Iron Works.

ROLLING MILL FOUNDRY AND MACHINE SHOPS. The undersigned continues to manufacture at his Works in this city (from best charcoal metal) Bar Iron of every description, embracing Rounds and Squares, from ½ to 5 inches diameter. Flats, from ½ to 7 inches, all thicknesses.

Bands and Scrolls, all sizes. Boiler plate and Plough Iron. Railroad and Locomotive Axles and Tires. Locomotive Frames, Spikes and Plates. Hoops, Ovals, Half Ovals, Half Rounds, Angle, T, L, and indeed every description of Iron usually manufactured, all of which he warrants to be equal to any made in this country. He also manufactures at his Foundry and Machine Shops all descriptions of Railroad Work, say, Locomotives, Railroad Wheels and Axles complete and ready for the road, Railroad Chairs, etc. Also, Marine and Stationary Engines all sizes, Sugar mills and Engines, Horse mills, and every kind of Machinery usually required for the operations of the country. He has paid particular attention to getting up machinery, etc., for Gold Mine operations, and those in want of such work might find it to their advantage to give him a call.

J. R. ANDERSON.

Richmond, Va., Sept. 10, 1850.

CUT NAILS OF BEST QUALITY, BAR IRON (including Flat Rails) manufactured and for sale by
FISHER, MORGAN & CO.,
75 N. Water St., Philadelphia.

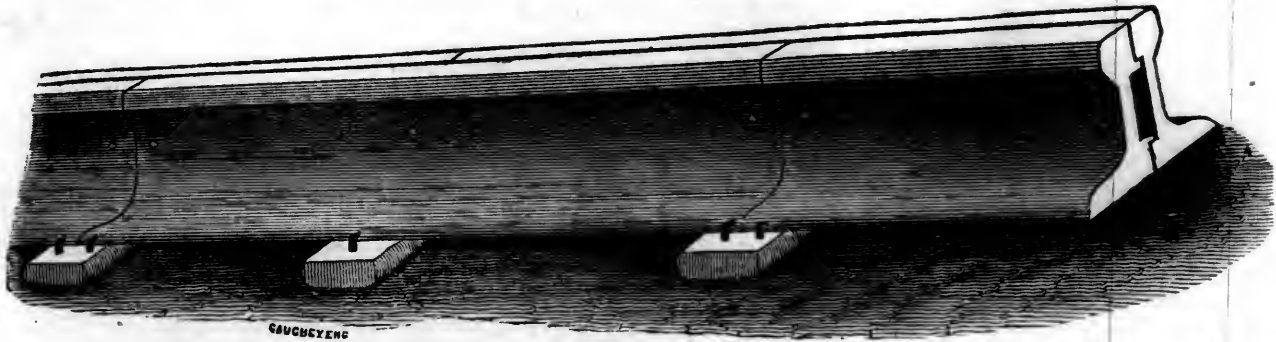
TO RAILROAD COMPANIES, CAR MANUFACTURERS, etc.

THE Undersigned hereby gives public notice, that the Commissioner of Patents, pursuant to his decision in relation thereto, on the 8th day of October, 1850, issued to him a Patent for the sole right to manufacture, and exclusive use of the INDIA RUBBER CAR SPRING, on account of priority of invention of said Spring.

New York, Oct. 23, 1850.

F. M. RAY.

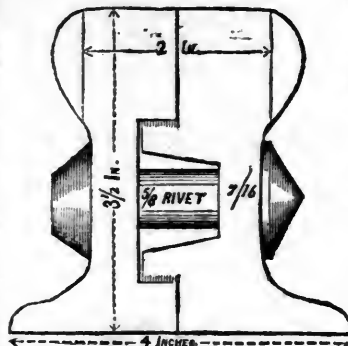
PATENT COMPOUND RAIL.



THE UNDERSIGNED NOW OFFER TO THE Railroad Public a new Compound Railroad Bar, which possesses, as they believe, a decided superiority over every kind now in use. The Cuts annexed will give a good idea of the form of the Rail, and the mode of combination.

This Rail has now been in use on the New York and Erie and the Utica and Schenectady Railroads for nearly two years, and has proved itself to be a durable and continuous rail, realizing the advantages of a theoretically perfect rail, over the one in common use. We invite the attention of Railroad Companies to a careful examination of the merits of the form now offered.

The advantages of this Rail are: first, it effects a saving of from 25 to 50 per cent. in the wear and tear of the machinery; secondly, it saves to a vastly greater extent in the repairs of track; thirdly, it secures a much higher rate of speed with the same power; and what is of still



greater importance, it offers complete protection against most of the accidents to which companies are liable. For these reasons, it is believed to be not only the best, but the cheapest rail that can be used. In enumerating its advantages, the proprietors only repeat the statements of competent persons, who have had the best opportunities of judging of its merits.

This improved Rail is now being manufactured at the Works of the Mount Savage Iron Co. in Maryland. Any communications or enquiries addressed to either of the undersigned will receive prompt attention.

J. F. WINSLOW, President,
Troy, N. Y.
ERASTUS CORNING, Albany,
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore.

April 8, 1851.

N.B.—Patterns of the above rail are placed with Mr. A. V. Winslow, Cincinnati, Ohio, who is authorised to negotiate with parties for the same.

Fagotted Car and Engine Axles

FORGED by RANSTEAD, DEARBORN & Co., Boston, Mass. These Axles enjoy the highest reputation for excellence, and are all warranted.

Iron Trade of Pennsylvania.

DOCUMENTS and Statistics relating to the Manufacture of Iron in the State of Pennsylvania—giving a history of the manufacture from its commencement to this date, illustrated by diagrams. Also tables giving the address and capacity of every establishment in the State. Prepared by direction of the late convention of the trade held in Philadelphia. For sale by

LINDSAY & BLACKISTON, Philadelphia.
FIELDING LUCUS, Jr., Baltimore.
HENRY G. NICHOLS, 79 Water st., N. Y.
or at this office—price \$1 00.

It will be sent by mail to any order enclosing the money, and post paid.

Ulster Iron.

THE ULSTER IRON WORKS, Saugerties, N. Y., continue in full operation. Orders for round, square, flat, band, hoop and scroll iron, will be received and promptly executed by

J. & L. TUCKERMAN,
69 West St., New York.

India-rubber for Railroad Cos.

RUBBER SPRINGS—Bearing and Power—Fuller's Patent—Hose from 1 to 12" diameter Suction Hose, Steam Packing—Jams 1-16 to 2 in thick. Rubber and Gutta Percha Bands. These articles are all warranted to give satisfaction, made under Tyler & Helm's patent, issued January, 1849. No lead used in the composition. Will stand much higher heat than that called "Goodyear's," and is in all respects better than any in use. Proprietors of rail roads do not be overcharged by pretenders.

HORACE H. DAY,
Warehouse 23 Courtlandt street
New York, May 21, 1849.

Railroad Iron.

2000 TONS T RAILS, of desirable pattern, arrived, and to arrive, for sale by
RAYMOND & FULLERTON,
6121 45 Cliff st.

Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, Alleghany county, Maryland, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. J. F. WINSLOW, President
Troy, N. Y.

ERASTUS CORNING, Albany,
WARREN DELANO, Jr., N. Y.
JOHN M. FORBES, Boston.
ENOCH PRATT, Baltimore, Md

November 6, 1848.

Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phoenix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehanna river; which two establishments are now turning out upwards of 1800 tons of finished rails per month.

Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.

REEVES, BUCK & CO.
45 North Water St. Philadelphia;

March 15, 1849

LAP—WELDED WROUGHT IRON TUBES

FOR

TUBULAR BOILERS, FROM ONE AND A QUARTER TO SEVEN INCHES IN DIAMETER.

THE ONLY Tubes of the same quality and manufacture as those so extensively used in England Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER & SON, Patentees,
28 Platt street, New York.

AMERICAN PIG IRON.

"**POUGHKEEPSIE**" brand, Dutchess Co., N. Y.
"GLENDON" brand, Lehigh county, Pa.
Orders for the above two well known brands will be received, and promptly executed, by
J. & L. TUCKERMAN,
69 West St., New York.

American Cast Steel.

THE ADIRONDAC STEEL MANUFACTURING CO. is now producing, from American iron, at their works at Jersey City, N.J., Cast Steel of extraordinary quality, and is prepared to supply orders for the same at prices below that of the imported article of like quality. Consumers will find it to their interest to give this a trial. Orders for all sizes of hammered cast steel, directed as above, will meet with prompt attention.
May 28, 1849.

PATENT HAMMERED RAILROAD, SHIP & BOAT SPIKES.—The Albany Iron Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for rail roads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscribers at the works will be promptly executed.

JOHN F. WINSLOW, Agent.
Albany Iron and Nail Works, Troy, N. Y.
The above Spikes may be had at factory prices, at Erastus Corning & Co Albany; Merrill & Co., New York; E. Pratt & Bro., Baltimore, Md.

Stickney & Beatty, DEALERS IN IRON AND IRON MANUFACTURERS.

AGENTS for the Baltimore City Rolling Mill (Works of Messrs. Ellicott) also agents for the sale of the Laurel, Locust Grove and Gunpowder (Balt.) Forge Pig Irons; Hupp's Cold Blast Columbian Wheel Iron, Fort and anti-Eaton Pig Irons. Caledonia, Columbia and Capon Cold Blast Boiler Blooms, warranted; Wm. Jessop & Son's Steel; Old Colony and anti-Eaton Nails; Bar Iron, Boiler Plates, Hoop, Sheet, Oval, Half Oval, Horse Shoe and other Iron. Exchange Place, Baltimore.

Railroad Iron.

2000 Tons, weighing 58 pounds per lineal yard, of the most approved pattern of T rails, in store and to arrive, for sale by
COLLINS, VOSE & CO.,
74 South St.

New York, June 1, 1850.

MACHINERY.

Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phoenixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staffs, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll sounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y. P. A. BURDEN.

Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery for making Spikes, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

CHILLED RAILROAD WHEELS.—THE UNDERSIGNED are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of spokes or discs, by a new process which prevents all strain on the metal, such as is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St., below 13th,
Philadelphia, Pa.

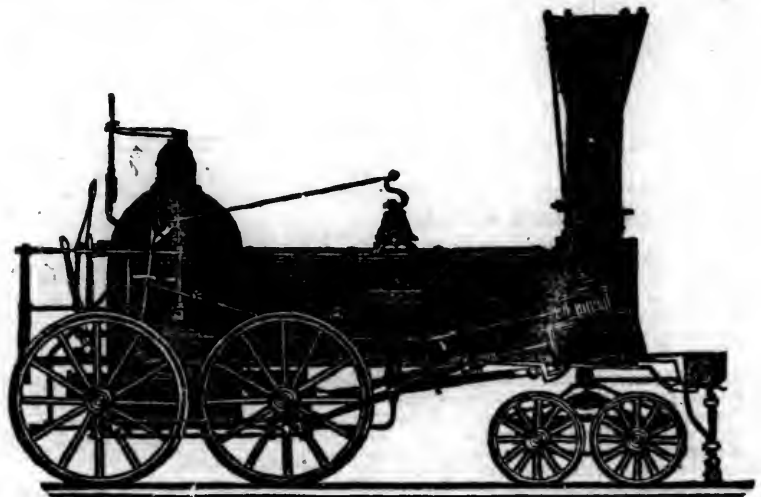
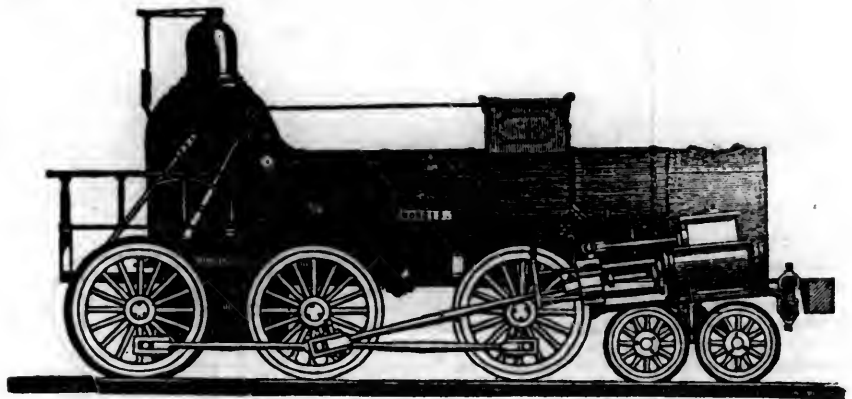
Brown's Old Established SCALE WARE HOUSE,
NO. 234 WATER ST., NEW YORK.

THE Subscriber, Practical Manufacturer of Scales of every description, respectfully asks the attention of Railroad Companies to his Improved Wrought Iron Railroad Track and Depot Scales which for strength, durability, accuracy, convenience in weighing, and beauty of workmanship, are not surpassed by any others in this country.

He is aware that this is rather a bold assertion for him to make, yet he can say with confidence that they have but to be tried to give them precedence over all others.

J. L. BROWN.
Bank Scales made to order, and all Scales of this make warranted in every particular.

Reference given on request

NORRIS' LOCOMOTIVE WORKS.
BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,

THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size. Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given, the Tyres are made to fit on same without the necessity of turning out inside.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS, BROTHERS

PATENT MACHINE MADE HORSE-SHOES.

The Troy Iron and Nail Factory have always on hand a general assortment of Horse Shoes, made from Refined American Iron.

Four sizes being made, it will be well for those ordering to remember that the size of the shoe increases as the numbers—No. 1 being the smallest.

P. A. BURDEN, Agent,
Troy Iron and Nail Factory, Troy, N. Y.

Etna Safety Fuse.

THIS superior article for igniting the charge in wet or dry blasting, made with DUPONT'S best powder, is kept for sale at the office and depot of

REYNOLDS & BROTHER,

Sole Manufacturers, No. 85 Liberty St.

NEW YORK.

And in the principal cities and towns in the U. States. The Premium of the AMERICAN INSTITUTE was awarded to the Etna Safety Fuse at the late Fair held in this city.

November 3, 1849,

ly

UNION WORKS,

North street, opposite the Railroad Depot,
BALTIMORE.

Poole & Hunt,

Manufacturers of Steam Engines and Mill Gearing, Machinists' Tools, and all kinds of heavy and light Machinery.

Also put up Arrangements of Wrought-Iron Pipes for heating buildings and conveying steam or water. Castings of every kind furnished at short notice.

Every exertion will be made to insure the satisfaction of customers.

Patent Machine Picket Fence

SIX DIFFERENT STYLES of this fence are now made by patent machinery; and is by far the most economical fence for Railroads, Farms, Yards, etc., ever yet offered to the public, costing only from 4 to 30 cents per foot, according to pattern; and is so put up as to be shipped at a trifling expense. Full particulars will be furnished, by addressing the subscriber, to whom all orders should be sent.

N. STRATTON, Troy, N. Y.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

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GEN. CHAS. T. JAMES, *For Manufactures and the Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & Co., 136 NASSAU ST.

Saturday, July 26, 1851.

The Britannia Bridge.

We have frequently given detached sketches of this great work, so interesting to scientific men, and engineers. We now present a pretty full account of its construction, together with the various experiments that led to the adoption of the form of tube used, compiled from a history of the work prepared by a person intimately connected with the same.

It was originally intended that the Chester and Holyhead railway should cross the Menai Straits by Telford's suspension bridge; but this plan was abandoned on account of engineering difficulties, and the site occupied by the present bridge was fixed on. It takes its name from the Britannia Rock, lying in mid-channel, on which its centre pier is founded. At this place, Mr. R. Stephenson proposed to build a bridge of two cast iron arches,

each of 350 feet span and 100 feet in height, which were to be erected without the use of centres, by continued additions to the spandrils, each piece being connected to its fellow on the opposite side of the pier by tie-rods. An end was put to this design by the requirement of the Admiralty, that the same height should be preserved at the springing of the arch as at the crown; in other words, that its under side should be a straight line.

In this position of affairs, the conception of a tube occurred to Mr. Stephenson; and to determine its shape and the details of its construction, he immediately, by authority of the directors of the line, instituted a series of experiments upon a magnificent scale. The first series of experiments was on 34 tubes, of different sections, round, oval and square or rectangular, varying in length from 18 to 27 feet, and in diameter from 9 to 18 inches. They were in all cases supported at their ends, the testing weight being hung in the middle, till fracture took place. The rectangular form was found to be much the strongest: it was the only one in which failure did not take place in the upper side.

When a beam, supported at its ends, is loaded at the middle, the fibres of the upper side are compressed; while those of the bottom are stretched. When, therefore, a beam of uniform shape is broken by the failure of the top, it is evident that the strength of the material to resist compression is not equal to that with which it resists tension; and vice versa. The power of cast iron to resist compression is to its power of resisting tension as 5 to 1; while these experiments showed that in wrought iron the proportion is reversed: its power to resist compression being to its power to resist tension as 9 to 11.

The second series was on a model tube, one-sixth of the dimensions assumed for the real bridge, 75 feet long, 4 feet high, 2 feet 9 inches wide. Six experiments were made with this model, to determine the proper proportion to be kept between the material of the top and of the bottom. In the last experiment, the tube broke with 86 tons suspended—equal to 172 tons distributed over its length—the sectional area of the top being 26½ inches, and that of the bottom 22½, or as 11 to 9 very nearly.

During these experiments, the masonry of the bridge was proceeding rapidly.

The Britannia rock is in mid-channel; and upon it is the tower called by its name, which at its base is 60 feet by 50 feet 5 inches. Its entire height is

221 feet. At a distance of 460 feet on each side of the Britannia Tower, stand the two land towers on the Carnarvon and Anglesey shores. At their base they are 60 feet by 37 feet. From the land towers to the face of the abutments, which stand still further inland, is a space of 230 feet; the abutments themselves are in all 176 feet long.

A large number of cast iron girders were built into the solid stone work, for the purpose of effectually distributing the pressures of the enormous weights which were carried by certain spots during the lifting of the tube. Of these, the Britannia tower contains no less a weight than 394 tons—the total weight in the towers and abutments being 929 tons.

The dimensions of the tubes having been definitely fixed, it was determined to build the four large ones on platforms or jetties, lying along the high water mark of the Carnarvon shore; then to float them to the foot of the towers; and finally to raise them to their places by hydraulic power. The land-tubes were to be built in their places on scaffolding.

Supposing one of the large tubes to be completed, and lying ready to be floated on the platform; it is 472 feet long—3 feet higher at the end which is to enter the Britannia tower than at the other, which is 27 feet high. It has eight cells in the top, and six in the bottom; in both cases 1 foot 9 inches high, but of different widths. The platforms forming the upper and lower sides of the top cells, are of single thickness; and they are connected with the upright plates of the cells by two angle-irons, matched on the opposite side of the plate by a flat strip. These junctions are formed by rivets, which are inserted at a red heat, and while hot are closed up—exerting, by their contraction, a great power on the plates through which they pass. The plates forming the sides, run vertically; and they are joined together by double T-irons, which form a pillar of great strength at every two feet distance throughout the tubes. These T-irons are bent round at right angles, and riveted to the platform of the top and bottom; and a triangular plate, called a gusset, is used to fill the corners with great effect, against the twisting strain exerted by the wind. The platforms of the bottom cells are of double thickness of plates, arranged so as to break joint; the covers (plates riveted over the joints) being large and strong: the whole forming in fact a chain to resist tension; while the top is construct-

ed with small covers and nicely executed joints, so as to act as a *pillar* to resist compression.

Cast iron frames of great strength are fitted into each end of the tubes, and into the lower set of cells, to resist the great strain occurring at the points of support in the towers. To these frames were fitted the iron beams to which the lifting chains were to be attached, and which consisted of three very strong cast iron girders, accurately fitted, having pillars of iron jammed between them, and a strap of wrought iron passing completely around them, so as to combine them all into one solid mass.

The tubes having been completed on the platforms, it was necessary that they should be cut away in order to make room for the pontoons by which the work of transport was to be done. Temporary stone towers were therefore built under each end; and the platforms having been built with an upward curve of nine inches, it was found that after they were cut away and the tube took its own bearing, the deflection only slightly exceeded this.

The beach beneath the tubes was next excavated to admit the pontoons. These were eight in number, each 100 feet in length; six of them of wood, 25 feet wide and 10 feet deep, and two of iron, 31 feet wide, and 8 feet 9 inches deep. These pontoons were sunk, by means of valves, below the tubes; and the valves were closed and the water then pumped out. The principle on which it was determined to conduct the floating of the first tube was, that the tube should be hauled out into the rising tide which runs in the required direction, when the velocity of the tide was such as to bring the tube to the foot of the piers just at the time of high water; the ends of the tube being brought over stone shelves, prepared at the bases of the towers, on which, as the tide descended, it would be left resting. Thus the tide itself was made to do the work of transport, and no exertion was necessary, except for the work of pilotage.

It is difficult to form a just estimate of the delicacy of this undertaking. Here was a mass of 2000 tons in weight, of an awkward shape, to be navigated in a tideway where the current is often eight miles per hour, and where the variations of the wind might create unexpected obstacles; but, owing to the prudence and foresight of Mr. Stephenson, the object was safely accomplished. On the 20th of June, 1849, at half past seven o'clock, the mass swung out into the stream, and at twenty-two minutes after nine, the tube reached its destination at the foot of the piers. As the tide ebbed, the pontoons floated away from below, leaving the tube to span the opening alone.

The next object to be accomplished, was to raise it through the 100 feet between that position and its ultimate place. This was done by hydraulic presses of enormous dimensions—that at the Anglesey end having a ram of 20 inches diameter, and a cylinder 10 inches thick; and that at the Britannia end, two cylinders, with rams 18 inches diameter. The ram carried a crosshead of prodigious strength of cast iron, strengthened on the top side by wrought iron links put on hot; from it depended the lifting chains, the lower ends of which were secured to the beams in the end of the tube. The "stroke" of the press, or the height which it was capable of lifting through, was six feet, and each link of the lifting chains corresponded in length. On the upper part of the frame of the press, 12 feet below the top of the crosshead when at the highest point of its lift, was an arrangement of "clams," which were blocks of iron, planed accu-

ately to fit the square shoulders of the head of the chain; by screws and gearing these clams could be opened or closed, so as to let the chain pass, or to embrace and hold it firmly. On the crosshead was a precisely similar arrangement. When, therefore, the press had completed its lift of six feet, the head of the third link had just reached the level of the clams. These being brought in under the shoulders of the link, transferred to themselves the weight of the dependent tube. The clams on the crosshead were then opened, the ram lowered, the top link taken off, the crosshead clams closed, and the bottom clams opened, when all was ready for another lift of six feet.

The whole of this ponderous machinery was supported on beams of wrought iron, of immense strength, which spanned the tower above the tube.

The time occupied in making each lift of six feet was about 38 minutes. The precaution was taken to underbuild the tube with brickwork in cement; and during the lift, a packing of thin wood was introduced between the top of the brick work and the bottom of the tube, that, in case of accident, an inch might be the greatest distance fallen thro'. That these precautions were not needless, was shown on the 17th of August, when the bottom of the cylinder of the single press broke, and allowed the tube to descend on to the packing. No serious injury was done to the tube, though the delay in procuring a new cylinder was considerable. The full height was reached on the 13th of October.

The expansion and contraction of such a length of metal is considerable, even under ordinary changes of temperature. Its effects are rendered more manageable, by allowing the tube to rest in the Britannia tower, and to expand outwards in both directions—there being arrangements of rollers, etc., in the land tower abutments, to facilitate its motion. The greatest motion hitherto observed in each half is 3 3-16ths inches.

The second tube was floated on the 4th of December, and lifted to its place on the 7th of January, 1850. The last of the land tubes for the first line was lowered to its place on the 4th of March, and on the next day Mr. Stephenson and staff passed through with a monstrous train, drawn by three locomotives. Ten days after this, the line was tested by the Government Inspector, with a train 434 feet long; which caused a deflection of less than three-fourths of an inch.

The third tube was floated on the 10th of June, and deposited on its permanent bed on the 11th of July. The fourth tube was floated on the 25th of the same month, and placed on the 12th of September.

The total weight of the tubes is nearly 11,000 tons. This weight is made up of 9,360 tons of wrought iron, and more than 1,200 tons of cast iron and timber. They are composed of about 186,000 separate pieces of iron, pierced by more than 7,000,000 of holes, and united by upwards of 2,000,000 rivets, the angle and T-iron being not less than 83 miles in length. The weight of the lifting chains alone, at each end of the tube, was more than 40 tons, which with the crosshead and ram of the press, made a total of more than 60 tons to be lifted before any effect could be produced on the tube itself. Of the masonry in the towers and abutments, there was about 2,500,000 cubic feet—the weight in all being about 150,000 tons.

The construction of this bridge may well be regarded as one of the most stupendous undertakings of modern times.

IRONTON, LAWRENCE COUNTY, OHIO, }
July 10, 1851. }

H. V. POOR, Esq.:

Permit me through the columns of your valuable Journal, to give you and your readers some facts relative to this important mineral region, now but little known out of the State, and not much known or appreciated in it, except perhaps in this vicinity. There are but few people, comparatively speaking, who know that within a distance of twenty miles of this town, there are no less than thirty-five large blast furnaces, now in successful operation, producing annually seventy thousand tons of "Pig Iron"—worth at the present low prices (twenty-five dollars per ton), one million seven hundred and fifty thousand dollars.

To dig the ore, (viz., 175,000 tons), to chop the wood and make the charcoal (14,000,000 bushels) sufficient to make the above quantity of iron, to haul the same to the furnaces, and the iron thence to the Ohio river, and to do all other work necessary to manufacture this amount of pig iron, requires an expenditure of labor and money: to what extent is almost entirely unknown, except by the manufacturer himself. It is true, the farmers on the Ohio and Scioto rivers know that the "Iron Master" buys yearly a "right smart chance" of corn; but tell him the fact, that seven hundred thousand bushels are consumed annually by the furnaces, and he will look very incredulous.—The flour dealer of Cincinnati and elsewhere, also knows that a considerable quantity of flour is sent into this iron region; but he has little or no idea that the amount is equal to thirty thousand barrels per year. Neither is it generally known that these furnaces buy annually 1,500,000 lbs. of pork and bacon, 350,000 lbs. beef, besides other products of the farm to a large amount, such as mutton, butter, cheese, poultry, &c., &c., to say nothing of the amount of dry goods, groceries, boots and shoes, &c., which would amount in the aggregate to at least the sum of \$225,000.

During the years 1845, 1846 and 1847, the iron business was very prosperous, and the make of iron increased rapidly in quantity, from year to year; many new furnaces were built, and old ones which had long been out of blast, repaired and put in operation; there was then a large demand for iron at good prices, and labor and the products of the farm were higher; but the tariff and low duties of 1846, (deferred for a brief period by the famine in Ireland, and the consequent increased demand for breadstuffs from this country) soon began to be felt, and the iron business has now become so prostrated, that large establishments ceased operations in this section of country last year; and they are stopping, or have mostly all stopped in Pennsylvania and the eastern States; and were it not for the superior quality of our iron (it being better than Scotch pig), and the protection which the cost of transportation of foreign iron to the western States afford us, we too should be obliged to put out our furnace fires, and engage in raising agricultural products to feed the population of Europe, and rely wholly upon them for our iron and other manufactures. But situated as we are, so far inland from the seaboard, and hoping and expecting a better state of things in the future, our business has not sensibly declined in the quantity of iron made, although our profits are reduced to so low a figure as barely to compensate us for the depreciation of our property, caused by the consumption of the raw material, (ore, timber, &c.,) and the interest on our capital invested; but notwithstanding

the very small profits, this mineral region is steadily improving in population and wealth, and if the low price of pig iron does not entirely prostrate the energies of these enterprising iron manufacturers it will continue to improve, and with the benefits of the important improvements now in progress, when completed, will perhaps enable this iron region to make iron at remunerating profits.

Among the improvements alluded to, the most important one is the completion of the iron railroad which commences at this town, on the Ohio river, running north through the entire county, and passing by, or very near to, ten furnaces, and intersects the Belpre and Cincinnati railroad, some six miles north of the town of Jackson, in the county of that name. The length of this road is about 52 miles, ten of which is nearly completed, from Ironton to Lawrence Furnace. When this ten miles is finished, which will be by 1st January next, it will be used by eight or nine furnaces, Olive, Buckhorn, Mount Vernon, Lawrence, Centre, Etna, Vesuvius, Lagrange and Clinton. These eight or nine furnaces will deposit their iron at Ironton—a town of some 1,200 inhabitants, beautifully situated on the banks of the Ohio river, high above any floods which have ever been experienced. The Ohio iron and coal company, purchased about three years since 300 acres of Ohio river bottom land, and laid out this town; it was then a cornfield, now it has the population mentioned, and three hotels, a large foundry in operation, employing fifty hands or upwards; a large rolling mill is in progress of building by some practical Pittsburgh men; dry goods, boot and shoe, grocery, clothing and furniture stores, abound; and last, not least, a bank of \$100,000 capital under the free banking law of this State, is now authorised to commence business, and will be soon in operation. Hon. James Rodgers, of Hanging Rock, President, and James O. Willard, of Buckhorn Furnace, Cashier.

Ironton is destined to become a large manufacturing town in a few years. It possesses superior advantages to any other place in the western country; its beautiful location on the Ohio river in the centre of this rich mineral region, the large amount of capital it can command, its proprietors being the wealthy "iron men" of this region, its facilities for procuring stone coal, and iron, at little or no cost for transportation, fully warrant this prediction. The company who own this town, foreseeing its vast importance as a manufacturing town, purchased four thousand acres of stone coal land, immediately back, and adjoining the town; the railroad passes through the centre of these lands, thus enabling the company to deliver coal at the various manufacturing establishments at the low price of one dollar per ton.

When the iron railroad is completed, should the iron business become more profitable, a number of new furnaces will be built along its route, there being an abundance of ore, stone coal and timber, the distance from the river having hitherto prevented the improvement of furnace sites in every respect as good as those now in operation. This iron must all be taken to Ironton over the iron railroad, and large quantities there manufactured into bar iron, castings, machinery, &c.

The tract of land purchased for the town of Ironton, extends along the Ohio river nearly a mile, affording a fine landing for boats of every description, the water being deep a few feet from the shore. Many of the wealthy "iron men" have built or are building fine residences, and are calculating to make Ironton their permanent home, and give to

it the benefit of their furnace profits as they accumulate from year to year.

I know of no place in the western country where mechanics of every description could do as well as here. The consumption of manufactured goods in the iron region is large, thus affording a good home market for a large amount, and there are facilities for transporting any surplus to the great markets of the west, in the cheapest and most expeditious manner.

A cotton factory for the manufacture of coarse cotton goods would do an excellent business here. It combines all the advantages of cheap fuel, cheap food, and cheap labor, and a large saving in the cost of transportation on the raw material and manufactured goods, to which the eastern manufacturer is subjected, to say nothing of the large expense incurred in sending bread stuffs to the east, to feed the mechanic or laborer there. A saving in these items of expense mentioned, would be a fair profit of itself.

The immediate prosperity of the town of Ironton and the iron region, depend somewhat upon the early completion of the iron railroad. That this road will be built, is certain, for enterprise, perseverance and capital, are here, perhaps, undeveloped in a measure now, but the future will bring it forth. If the railroad company could obtain some pecuniary aid at this time it would be of great advantage to this region, but the company are all practical "iron men," know all about making pig iron, and but little about the best method of awakening an interest to the importance of developing the inexhaustible resources of this rich mineral region.

AN IRON MAN.

Application of Iron to Railroad Structures.

We find in the last number of the Journal of the Franklin Institute, an article by H. L. Damsel, Esq., upon the comparative qualities of iron employed in the construction of railroads, the substance of which is given below:—

On the introduction of railroads, engineers were of opinion that iron railway bars would endure for an indefinite period, and that their destruction would eventually be effected by the oxydation of the metal from its exposure to atmospherical changes. But a real iron way had not long been constructed, and in use, before it was discovered that the iron bars were subject to abrasion and disintegration, by the sliding and rolling of the locomotive engines and carriages that traversed it; and that on lines having a considerable traffic, worked at high speeds, their destruction was effected within a very limited period. The injury to the rails from oxydation of the surface is scarcely perceptible on those in constant use. The abrasion of the head of the rail, thereby diminishing the width and depth of the bars, is on some railroads the means of lessening the duration of the rails. But lamination or disintegration of the fibres of the metal composing the wearing parts of the rail, is a fruitful source of expense on numerous railroads in Europe and America.

No sooner, however, was it discovered that the bars were liable to laminate and splinter, than a number of inventions were produced with a view of obviating the evil. It was supposed that the shape of the rails was faulty; and parallel, T or web-footed, bridge and plate rails have been used with more or less success. But from the diversity of opinion which exists among engineers respecting the best section for iron rails, it may fairly be inferred that of itself it is a matter of very little im-

portance; and we must look elsewhere for the cause of the evil complained of.

The occurrence of lamination in the rails may be traced to one or more of the following causes: 1st. From the line of rails being unsupported with a sufficiency of suitable sleepers and ballasting. 2d. From the improper state of the working stock. 3d. From a disproportion of the quantity of metal in the bars, and the weight of the locomotive engines and rolling load, and the velocity at which these are propelled. 4th. From the imperfect and negligent manner in which the bars are too often manufactured. 5th. From their having been manufactured from improper metal.

The condition of the permanent way has an important connection with the duration of the rails. If the ballasting has originally been made of unsuitable materials, or if it has since been negligently maintained, the very best rails are as liable to injury from this cause as the very worst. No matter what care may have been taken in their manufacture, if the rails be not properly supported at necessary intervals, or what is still better, continuously, crushing and lamination will ensue. The best manner of laying rails is on longitudinal strings of timber; and by using larger timber than hitherto adopted, the injury to the rails from the deflexion of stringers would be greatly reduced.

Injury may also be occasioned to the rails by a bad condition of the carriages and other working stock. If the wheel tyres are much worn, it will often produce a broken and splintered state of the outside edge of the rails—which, unless attended to, will extend inwards, and ultimately render their renewal necessary.

The rail at first laid down, and even now in many instances adopted, was much too light for the immense trains and great velocity so common in the present improved condition of locomotion, and it is now a well established fact that for railroads of the usual description, rails weighing from 75 to 90 pounds per lineal yard, are much safer and more economical than those of a less weight.

But after all, the principal cause of lamination in rails would seem to arise from the peculiar mode of their construction. Railroad companies, in their desire to secure good rails at low prices, generally stipulate with the manufacturers that a certain portion of the metal used in manufacturing each bar shall be of a definite quality and superior to the rest. But the effect of this mode of manufacturing will be evident when the process is detailed more at length. It may therefore be necessary to state that iron rails of whatever section, are rolled from a number of short flat bars, placed one on the other to form a "pile" as it is technically called, of the requisite size and weight. This pile for rails of ordinary dimensions, is about 3 feet long, 7 inches wide, and 9 inches high. With the present system of manufacturing, the body of the pile is built up with puddled iron, averaging about 3½ ins. wide by ½ an inch thick, and the length of the pile, while the top and bottom are each composed of an iron plate about one inch thick by seven inches wide, and of a similar length with the others. These plates are styled "best iron." Their employment being usually specified in all contracts, it is therefore compulsory on the part of the manufacturer. When rolled, the metal in these plates forms portions of the head and foot of the finished rail.

But this use of the "best iron," instead of rendering the rails better able to withstand the wear and tear of heavy travel at high velocity, strange

as it may appear, produces the very opposite effect. On the occurrence of lamination, it will be found that the strip of metal severed from the body of the rail rarely exceeds one third of an inch in thickness, let its breadth be what it may. By referring to the materials of which the rail is rolled, it will be observed that the plate of best iron, 1 inch thick, 7 inches wide and three feet long, is in the process of rolling, extended over the head of a rail, probably 20 or 24 feet long, and 3 inches wide, thus becoming reduced to less than one third of an inch in thickness. It is this thin covering of best metal, which it is customary to place on the heads of the rails to resist the wear and tear from the rolling of millions of tons of traffic. If soundly welded to the other layers, such a thin provision for wear may bear a few millions of tons; but if otherwise, it will probably peel off in long thin flakes before it has borne many thousands. Unfortunately for railroad companies, the latter is too frequently the case.

The reason why the welding is in so many cases imperfectly accomplished, is because the top plate requires a greater degree of heat to bring it to the welding point than the small bars of puddled metal, on account of its greater magnitude; and if it be thoroughly heated, the intense heat of the furnace must necessarily burn the small bars. The desire of producing large quantities of rails in a limited period, often induces the manufacturer to hasten the heating powers, and thus the pile is not unfrequently drawn before the smallest bars have been properly heated. By so doing, the waste of metal and consumption of fuel in the operation, is considerably diminished, and a corresponding saving effected to the manufacturer. The workmen too, from being paid by the contract on the quantity produced, have a direct inducement to withdraw their charges before they have been properly heated, of which it is believed they take advantage, to the loss of the purchaser.

A set of experiments was recently made on nearly 50 tons of rail, to test this matter. The rails were of a fair average quality, selected indiscriminately from a heap of several hundred tons, which had been manufactured at various periods during the past ten years. The result was that of 272 bars tested, 45 or 17 per cent. were sound and free from any defects in the welding of the top to the other plates; 148 or 54 per cent. were more or less imperfect; while in 79, equal to 29 per cent. of the whole, the top plates were but superficially united to the others. The perfectly sound bars would probably wear for some time; the imperfect ones might, under favorable circumstances, stand considerable rolling before laminated; but the remaining quantity which had not been welded, would not sustain any heavy traffic. It is not, therefore, surprising that with such a large per centage of imperfect rails, lamination should extensively prevail on the majority of railroads now in use.

The employment of the best iron in the rail pile, is attended with another disadvantage. It is generally admitted that the metal in the wearing part of the rail should be of a hard and solid texture; and premising that the thin layer of best iron has been securely united, it is not of this character. Being manufactured from the same description of puddled iron as that used in the body of the pile, the difference between them consists in its having visited the heating furnace and undergone an extra rolling. By this extra rolling, it has increased its fibrous character, and parted with a portion of its cinder, to which it owes its welding properties. On

being reheated in conjunction with the new puddled iron, it is incapable of furnishing the quota of cinder necessary to their complete cohesion; and the weld, though apparently perfect, is incomplete, while the metal itself, from repeated rollings and reheatings, has acquired an open, fibrous character, easily ruptured by pressure and concussion.

In order to avoid these imperfections, it is suggested that the whole bar should either be rolled from puddled iron or from the best iron, in either of which cases it might be welded in a permanent manner. The most advantageous way however, it is said, would be to dispense altogether with the use of the "best iron" which is always more liable to lamination than less highly wrought metal.

Mining in Great Britain.—No. II.

The most regular tin and copper lodes are very complex in their composition; quartz generally prevails in the matrix, but is always more or less blended with a substance similar to the adjoining rock—indeed, the latter often occurs in distinct forms, as nodules, angular pieces, and even masses of considerable size, which are independent of the main rock, being completely enveloped in the quartzose part of the lode. These are of such common occurrence, as to be named by the miners *horseshoes of killas*. Sometimes the schist so abounds in the lode, that the quartzose part altogether disappears, or is only continued in minute strings; in this case the lode is said to have dwindled away, or to have been *wrung out*. It also frequently happens, that both these principal parts (the rock and the quartz) are intimately united, producing a silicious layer of rock, which is still metalliferous, and is commonly called *capel*—hence the courses of schorl rock, porphyry, and some anomalous rocks, which have been called by the miners *elvan*, have been properly considered by them to be analogous to lodes; for they are in fact veins on a large scale; and from the great width of many of them, they are termed channels or courses; they are generally composed of hornstone, quartz and felspar, having the appearance of hornstone porphyry. Other substances, however, are called *elvan* by the miners. Thus, a stone composed of very compact hornblende and chlorite, is called *blue elvan* in Wheal Ann; a mixture of hard hornblende and quartz has the same name at Boallack; a compound of felspar and hornblende is *elvan* at Gwallior, and is as soft as the neighboring country; a mixture of hornstone, quartz, schorl, and chlorite, forms the *black elvan* of Chacewater; and the fine-grained granite is the *elvan* of Rosewall Hill. Hardness is not an essential quality of elvan. The elvan courses vary in width from one to sixty fathoms, or three hundred and sixty feet. Their direction is generally a little north of east and south of west; and they almost always underlay towards the north—perhaps, on an average, a foot to every foot in depth, or at an angle of 45°. The extent of their length has never been ascertained, although one of them has been traced five miles.

"By a true vein (Mr. Carne says), I understand the mineral contents of a vertical or inclined fissure nearly straight, and of indefinite length and depth. Their contents are generally, but not always, different from the strata or the rocks, which the vein intersects. True veins have usually regular walls,* and sometimes a thin layer of clay, between the wall and the vein. Small branches are also frequently found to diverge from them on both sides. Contemporaneous veins have been usually distinguished from true veins by their shortness, crookedness and irregularity of size, as well as by the similarity of the constituent parts of the substances which they contain to those of the adjoining rocks, with which they are generally so closely connected as to appear a part of the same mass. Two other marks, more distinctive, must be added. When these veins meet each other in a cross direction, they do not exhibit the heaves or interruptions of true veins, but usually unite. In

* By this term is meant, that the rock of the country stands against the vein, on each side, as a wall, without being intermixed, or forming one body with it.

a multitude of contemporaneous veins, some may appear to be heaved; but the apparent heave seldom affects more than one vein—and it is in general easy to perceive that what appear to be separate parts of the same vein, are different veins, which terminate at or near the cross vein. When they meet with true veins, they are always traversed by them." Tin lodes are, in general, richer or poorer in the elvan than in the adjoining rocks in proportion to the hardness or softness of the elvan. A very soft, or very hard gossan (earth-brown iron ore), is equally thought less favorable than if its consistency be moderately firm; and a very dark color is also discouraging. The copper gossans are generally softer, paler, and less quartzose, or rather, perhaps, the quartz in them is often friable; and they are more vesicular than tin gossans.

In granite, the lodes which are chiefly productive of tin are, for the most part, composed of a pale greenish felspar, of a confusedly crystalline structure; but seldom containing distinct crystals. Through this substance the tin ore is interspersed in form of crystalline granules, seldom so large as a pea, but generally as small as sand.

The lodes which yield copper ore in granite almost always contain gossan near the surface; and this usually continues to somewhat greater depths than it does in slate—as at Tresavean, Ting Tang, Dolcoath, &c., in Cornwall. When the lodes are very granitic, or when they contain much of the schorlaceous quartz, they are seldom productive—indeed, copper ores are rarely found embedded in schorl. The lodes which yield copper ores in slate contains large quantities of gossan of a pale hue, soft, and full of soft cavities. In them, also tin ore frequently occurs in small quantities, and blende is very plentiful; but iron pyrites (mundic) is almost constantly present. These earthy minerals are mostly quartz, mixed with quantities of felspar, clay or flookan; near the surface these are spotted with earthy black copper ore, and at length by copper pyrites. In many places, and more especially in the slaty rocks in the neighborhood of the fossiliferous beds in the eastern district of Cornwall, some portions of the lodes, when large, consist almost wholly of a very white crystalline quartz, abounding in vughs, or cavities, lined with crystals of the same, and enclose innumerable disjointed pieces of slate. The cavities lined with crystals, and the included spots of slate, are most unequivocal signs of poverty in these parts of the lodes where they occur. There are also certain minerals which are seldom found in the richer parts of lodes; in those which yield copper ore, chlorite (provincially called *peach*) is one of the most conspicuous. The occurrences of tin ore in the deeper parts of lodes which have previously produced copper ore only, is accounted a very unfavorable indication. Ores of a certain character produce the same metal; and the miner, from experience, can immediately say which ore contains copper, which tin and which lead.

It is generally, if not invariably, the case that a peculiarly favorable matrix for copper ore is found at the juncture of killas and granite, and the richest and most numerous veins are generally discovered in killas [clay-slate] at no great distance from the granite, and are seldom sought after anywhere else by cautious miners. The pale blue killas generally accompanies a rich vein of copper, and it is the easiest to work on, in sinking shafts and pursuing discoveries. The lodes vary in width from one inch to thirty feet, but the most general in tin and copper veins in Cornwall is from one foot to thirty feet, and in the thinner veins the ore is less mixed with other substances. A lode composed of beautiful spar, yellow ore, white iron, and a portion of mundic, is seldom known to fail making a great quantity of ore. The *underlay* [or deflection from the perpendicular] of lodes is north and south. If the north side of the roof of a church were, retaining its slanting position, supposed to be underground, it would give an idea of the direction of a lode. In deep mines the lode sometimes passes through the killas, and is continued in granite.

When copper lodes, from a state of poverty, become either gradually or suddenly rich, the change is rather in the qualities than in the constituent parts of their veinstones; as from hard quartz or capel to quartz in a state of decomposition, called

by the miners *sugary spar*, or to soft chlorite, which they call peach. Another frequent change is from a very solid compact lode to what the miners call a *hollow* lode, abounding in cavities.— Sometimes the lode becomes greatly enlarged. It is generally believed that wherever a lode is rich, if there be another lode near it, having nearly the same direction and in the same country, whether killas or grown, even in an elvan course, it is probable that the second lode will be found rich in that part which is opposite to the rich part of the first lode. The phrase, *ore against ore*, is of early date; but although this circumstance has undoubtedly often occurred, yet, in many places the miners have been disappointed in their expectations.— There is also a very general idea, that a lode which has been rich in one part is likely to be rich in every other; that such a lode may be rich in many parts, distant from each other, has been proved in several instances; but for want of proper attention to the connection which appears to exist between the lodes and the rocks which they intersect, very large sums of money have been spent to no purpose. In Wheal Ann £30,000 were lost in exploring the same lode as had been rich in Wheal Alfred; had it been a different lode, the adventurers would have been satisfied with a much less expensive trial. In Tregajoran and Burncoose [Carn Brea] the adventurers laid out, and eventually lost a large sum on the lode which had been productive in Cook's Kitchen and Tincroft—on the other hand, in several mines, of which the principal lodes were partially exhausted, by *driving* northward and southward, other lodes have been discovered, which are now uncommonly productive.

The fairest method of working a mine, and which is generally adopted in the best conducted, is to promote *discovery*; ground being constantly opened, but more than half the ore found taken away, the other half being left as a reserve, in case of any temporary falling off in the mine, that there may be something to fall back upon whilst operations are extended in search of more; and great skill and judgment are required in a mining captain to arrange the workings, so as to keep up a regular and good supply of ores.

The legitimate value of a mine chiefly depends upon the value of the ore actually discovered underground, and the reasonable anticipations of further discoveries being made, as determined by the state of the mine and the richness of the district in which it is situated—the value of the mineral produce of the market, and the value of the machinery materials, and erections on the surface; and persons entering upon mining, with the view of a permanent investment, would do well to remember this, and not to take as a sole criterion of the value of a mine, its having realised large profits; for there is such a thing known to miners as "picking out the eyes" of a mine, or taking away the reserved ores, in order to make those very profits, and so raise a fictitious value for their shares in the market!

Many cases have occurred where every branch of ore discovered has been exhausted, and the profits divided immediately; so that when the lode for a time became small and profitless, calls had to be made upon the pockets of the proprietors for money to extend their operations, which, by proper management, should have been paid out of the produce; and the mines, in consequence of not paying, have been "knocked," or abandoned, by one party, and soon after taken up by another, who, by working fairly and properly, have made them both good and lasting.

In the case of a lode unexpectedly becoming poor, the mine, under this dangerous system of working, has no resources in itself to furnish the means of paying its ordinary expenses. The system of taking away all the ores may be compared to a man who lives at the very extent of an income which is dependent upon his own exertions. If a fit of sickness overtakes him, he has no resources whatever; but, independently of the risk which attends this system, it is enormously expensive.— In the first place, it is obvious, that even if all the lode consists of ore, a mass of ore can be taken away from above, at much less expense than from below; but this is the least important part. In *stopping* downwards, the whole of the lode, whether good or bad, must be taken away, as it is impossible to get

at the ore without taking away the *dead ground* also, and all this work must be done before the lode is properly drained.

The mixture of the ore with the rubbish also occasions much greater expense in dressing it, and causes considerable waste, as when so much washing is necessary, the finer parts of the ore (especially the rich black oxide of copper) are liable to be carried off by the water. This mode of working also occasions a much greater consumption of timber for the purpose of keeping open the space from which the lode has been taken.

Cotton Statistics.

In 1641. The first mention of cotton, the soft and beautiful vegetable substance forming the covering or envelope of the seeds of the gossypium or cotton plant, as an article used in manufacture, appears in a small treatise, entitled the *Treasure of Traffic*, written by Lewis Roberts, author of the noted book, *Merchant's Map of Commerce*, in which treatise it is stated that "the town of Manchester buys the linen yarn of the Irish in great quantity, and weaving it, returns the same again to Ireland to sell; neither doth her industry rest here, for they buy cotton wool in London that comes first from Cyprus and Smyrna, and work the same into fustians, vermillions, dimities, and other such stuffs, which they return to London, where they are sold, and thence not seldom are sent into foreign parts, which have means on far easier terms to provide themselves of the first material."

1690. About this time the art of calico printing was introduced into England from France. It ranks amongst those advantages which England gained by the revocation of the edict of Nantes, by Louis XIV., in 1685.

1693. A prescriptive claim, set up by the lord of the manor, for a duty of twopence per pack on all goods sold within the manor is defeated.

1695. By an indenture bearing this date, it appears that the fee with an apprentice to a Manchester manufacturer, was sixty pounds, serving seven years.

1701. The town of Liverpool rises rapidly into importance, and first forms the port of Manchester.

1701. The import of raw cotton was 1,985,868 pounds, the export of cotton goods being £33,253.

1730. Mr. Wyatt spins the first cotton yarn in England by machinery.

1736. The Dutch first export cotton from Surinam.

1738. The mode of *spinning by rollers* further improved by John Wyatt, and a patent taken out in the name of Lewis Paul, his partner.

1740. The agency system commences, and cotton weaving extends into the country.

1740. About this time Manchester merchants began to give out warps and raw cotton to the weavers, receiving them back in cloth, and paying for the carding, roving, spinning and weaving. Guest says, "the weaving of a piece, containing twelve pounds of eighteenpenny weft, occupied a weaver, about fourteen days, and he received for the weaving 18s.; spinning the weft at ninepence per pound, 3s.; picking, carding and roving, 8s."

1743. East India yarns used in Lancashire, up to this period, for the finer kinds of goods.

1743. The import of cotton wool amounted to 1,132,288 lbs. The quantity retained for home consumption, 1,091,418 lbs.

1749. The import of cotton wool amounted to 1,658,365 lbs. The quantity retained for home consumption, 1,327,367 lbs.

1759. Manchester begins to grow into celebrity for its cotton manufacture: the entire value of the cotton goods made was £200,000 per annum.

1761. Arkwright obtained the first patent for the spinning frame.

1761. The first English "Navigation Canal," extending from Worsley to Manchester, is opened June 17th. It originated with Scrope, Duke of Bridgewater, called the "Father of Inland Navigation in England."

1764. Cotton markets first opened abroad. At this time the trade of Manchester was greatly pushed by the practice of sending out riders for orders all over the kingdom, carrying with them patterns in bags.

1764. The following table of cotton wool import-

ed, and cotton goods exported, contrasted with similar tables of more recent date, will prove an extraordinary record:—

COTTON WOOL IMPORTED.		COTTON GOODS EXPORTED.	
	lbs.		Official value.
1697.....	1,976,359	1697.....	£5,915
1701.....	1,985,868	1701.....	23,253
1710.....	715,008	1710.....	5,698
1720.....	1,972,805	1720.....	16,200
1730.....	1,543,472	1730.....	13,524
1741.....	1,645,031	1741.....	20,509
1751.....	2,976,610	1751.....	45,986
1764.....	3,870,392	1764.....	200,354

1770. The manufacture of gingham, &c., is greatly improved by the inventions of Mr. Meadowcroft.

1772. James Hargreaves applies the contrivance of a crank and comb to take wool off the cards in a continuous fleece.

1773. The manufacture of calicoes introduced about this time.

1774. An act of Parliament, by which a duty was imposed on printed, painted, and stained cottons, declares the manufacture to be lawful.

1779. Mule spinning invented by Hargreave.

1780. The manufacture of muslins introduced. The import of raw cotton was upwards of 6,700,000 pounds; and the export of cotton goods was £355,060.

1782. A panic was created in Manchester by the circumstance of 7,012 bags of cotton having been imported between the months of December and April.

1782. First import of cotton from Brazil into England.

1783. Power looms invented by Dr. Cartwright—steam-engines used in cotton factories.

1784. The "Fustian Tax" imposed on the suggestion of the Right Hon. William Pitt. Great consternation was excited by this act in Manchester and the neighborhood; 15 houses, employing 38,000 persons in different branches of the cotton trade, petitioned against it; and the masters dyers and bleachers announced that "they were under the sad necessity of declining their present occupations until the next session of Parliament."

1785. The "Fustian Tax" repealed through the endeavors of Mr. Thomas Walker and Mr. Thomas Richardson, who were presented with a silver cup each. Splendid processions upon the occasion, May 17th.

1785. The privileges of the spinning-jenny, which had partly been thrown open in 1783, were in this year wholly given to the public, when cotton mills began to increase as well as the population.

1787. Muslin manufacture rises into note through mule spinning, and 500,000 pieces are manufactured in Great Britain.

1787. Steam engines first introduced into the Lancashire cotton factories, by Messrs. Peel at Warrington.

1787. The value of exported cotton goods, in this year (immediately after the overthrow of Arkwright's patent) amounted to £1,101,457.

1788. East Indian and North American cotton first imported.

1788. A meeting was held in Manchester to consider the great depression of our cotton manufactures, arising from the "immense importation of Indian goods;" and government was solicited to allow a drawback as an encouragement to the export of English products. It was estimated that the cotton manufacture employed 159,000 men, 90,000 women, and 101 children.

1789. Sea Island and upland cotton first planted in the United States.

1789. The first steam engine for spinning cotton erected in Manchester. The improvements made in the steam engine by Watt, and the various inventions, each contributed to advance the extent of the trade. The quantity of goods produced was augmented thirty-fold.

1790. The cotton spinners of Lancashire and Scotland solicited permission of the government to create themselves into a "Company of Traders," with privileges similar to those enjoyed by the East India Company, with whom, it seems, they considered themselves otherwise unable to compete.

1790. The import of raw cotton was 31,500,000 pounds; and the value of cotton goods exported was £1,662,369.

1790. Slater, an Englishman, builds the first American cotton factory, at Pawtucket, Rhode Island.

1790. It was mentioned as an extraordinary fact, that Manchester paid in postages £11,000, being a larger amount than any other provincial town.

1790. Messrs. Grimshaw, of Gorton, erected a factory at Knot Mill, for the introduction of power-looms into Manchester, but the experiment did not succeed.

1792. Eli Whitney, an American, invents the cotton gin, which he patents.

1800. Quantity of cotton wool imported was 56,010,732 pounds.

1814. The declared value of all the woolen, silk, and cotton goods exported from Great Britain was £14,658,442.

1815. The power loom introduced into the United States, first at Waltham.

1815. The export of twist legalised by Parliament, at which time the consumption of cotton amounted to 99,306,343 pounds, increased in two years to 124,912,966 pounds.

1817. The number of spindles in Great Britain are estimated at 6,545,833, and the number of operative spinners at 110,763, by Mr. John Kennedy, of Manchester.

1820. The import of cotton wool for home consumption was 152,829,633 pounds, the duty on which amounted to £426,957 11s. 3d.

1822. The first cotton factory in Lowell erected.

1822. The New Quay company began by Mr. John Brettargh and two others, with a capital of £30,000.

1823. The import of cotton into Great Britain was 187,231,520 pounds, of which 171,993,160 lbs. were imported into Liverpool, and may, therefore, safely be said to have been consumed in and about Manchester.

1823. There were 2,500 looms employed on silk, and about 3,000 on mixed goods.

1826. Self-acting mule spinner invented in England by Roberts.

1830. The number of yards of goods printed in Great Britain was 130,053,520; the amount of capital in the trade was £56,000,000, employing 330,400 persons in factories alone.

1832. The quantity of cotton wool imported was 283,000,000 pounds.

1832. A new throstle frame invented by Mr. Robert Montgomery, of Johnston, Scotland.

1832. There were from 12,000 to 14,000 looms, and ten throwing mills, giving employment to about 3,000 hands.

1833. The import of cotton wool was 303,656,837 pounds, and the duty £473,011.

1834. The quantity of cotton retained in England for home consumption was 295,684,997 pounds.—The export of cotton yarn amounted to 76,478,468 pounds. The quantity of yarn spun in England was 241,731,118 pounds.

1835. The declared value of cotton manufactures exported was £15,306,922; and of yarn £4,704,823.

1835. The quantity of cotton retained in Great Britain for home consumption was 330,829,834 pounds. The export of cotton yarn amounted to 82,457,885 pounds. The total quantity of yarn spun in England was 248,114,531 pounds.

1835. According to the Parliamentary return, the total number of power looms employed in the manufacture of silk, in Manchester and Salford, was 300. The total number throughout the United Kingdom was 1,716.

1836. Of 63,623 persons employed in mills in the parish of Manchester, 35,283 were females; 37,930 were above the age of 18 years, and 16,965 were below the age of 15.

1838. The amount of steam power employed in the various branches of manufacture in the Parliamentary boroughs of Manchester and Salford was—Manchester, 7,926½; Salford, 1,998; total horses' power, 9,924½.

Virginia.

South Side Railroad.—A locomotive has been manufactured in Petersburg, Virginia, by Uriah Wells, Esq., for the South Side railroad.

Strength of Pillars.

Mr. Buchanan communicated, in 1848, to the Scottish Society of Arts, an interesting exposition of the strength of materials, including the compressive strength on posts and pillars, and the remarkable effects of the length of the pillar in diminishing its strength. On this subject much light has been thrown by the experiments of Messrs. Hodgkinson and Fairbairn. Pillars or rods were tried of different lengths, from 3 inches to 5 feet, and of different diameters; rods half an inch diameter, with 3½ inches length, bore 11 tons; but when the length was 7½ inches it only carried 5 tons; when 15 inches long, 3 tons; and at 30 inches, only 13 cwt. From these experiments a general rule may be drawn for different lengths. Taking the strength of cast iron as formerly given at 50 tons per square inch, this will hold good in pillars till the length reaches five times the diameter, and then it begins to diminish. When the length is ten times the diameter, the strength is reduced to the proportion of 1½ to 1; with the length at 15 times the diameter, it is reduced as 2 to 1; twenty times as 3 to 1; thirty times as 4 to 1; and forty times, as 6 to 1. Hence the great advantage in cast iron of using hollow pillars or tubes in place of solid metal, whereby, with the same area or section of fracture, the diameter of the pillar is increased, and with it the resistance to flexure, and an increase of strength in proportion to the length. A solid pillar, for instance, 6 inches in diameter, if extended to 7½ feet in length, would be weakened one-half, but if cast hollow, 10 inches in diameter, and three-fourths of an inch thick, giving the same weight of metal per foot in length, it might then be extended to 12½ feet, and still possess the same strength as the other. In all these cases a remarkable circumstance was observed in regard to the mode of applying the strain. With the ends of the pillar turned flat, and a flat plate interposed at top and bottom, which is the case in supporting buildings, this was found to sustain nearly three times as much as when the pillar was rounded on the ends, so as to make the force pass directly through the axis, as occurs so frequently in machinery with the connecting-rods of steam engines, and in other cases.

Improvements in Smelting Iron.

Mr. Andrew Barclay, C. E., of Kilmarnock, has secured a patent for a peculiar arrangement of blast-furnace for the smelting of iron, which is stated to effect a considerable saving in fuel, time, labor, and expense. The furnace is circular, or may be of any other suitable internal shape, and is provided with three tuyeres, communicating with the main cold air-pipe by vertical branches. Each tuyere has a triple branch, furnished with stop cocks—one of which opens into the small end of a bell-shaped chamber, forming part of the furnace; while the other two communicate with it at the sides near its junction with the body of the furnace. Each chamber has a charging place, closed by a double door, for the introduction of fuel while the blast is on. Fuel and carbonaceous matter being introduced into the chambers, in addition to the charge of ores, the blast is turned on at each central pipe, so that the fuel is quickly ignited; but as the air passing through the incandescent fuel becomes deoxidised, more air is supplied by turning on the blast through the side pipes. More equally to diffuse the heat, additional tuyeres may be provided, which will enable the furnace to perform the double operation of combining and separating. In another arrangement there are also three tuyeres—the blast-pipe of each of which terminates in a forked branch. One arm of this serves to admit air above the burning fuel, while the other conducts the blast beneath the grate-bars, and through the fires in the chambers to the body of the furnace. There is also another construction in which two tuyeres are employed; and in each case the blast can be so regulated as to vary the quantity of oxygen, according to circumstances, and the quality of iron required. When it is to be converted at once into malleable iron, it is run into ladles at the time for charging the puddling-furnaces, and poured in them in a melted state, with a sufficient addition of carbonaceous matter. It is recommended, when erecting furnaces on this construction, to have the floor of the blast higher than the charging door of the puddling-furnace, to facilitate

the operation. There is also a claim to a steam cylindrical blower, which keeps up a regular blast by alternately filling with steam and condensing it, effected by any proper mechanical arrangement of stop-cocks and valves.

New Line of Steamships.

A new line of the largest class of steam propellers is about to be established between Boston and Liverpool. It is to be composed of four ships, the first to be ready to take her place on the 1st of August next.

This movement shows the determination of Boston to maintain her position as an importing city. Of late she has suffered greatly from the overshadowing influence of New York. Her lines of railroad are now completed, connecting her with the navigable waters of the Lake, and with Montreal, and a vigorous effort is to be made to render Boston the importing port for the Canadas, as well as to add to the convenience of those importing for domestic consumption. We heartily wish success to this new move. We copy from the Boston Courier the following in relation to this new enterprise:—

The first line of these new steam packets will, we understand, consist of four vessels, and occupy the route between Boston and Liverpool. The first one will take her departure about the first of August ensuing. She is named the "S. S. Lewis," and is one of the most splendid vessels of her class ever seen. She is of not less than 1800 tons burthen, and altogether the most costly ship ever owned in Boston. She belongs to "the Ocean Steam Ship Company of New England," incorporated by the state of Massachusetts, with an authorized capital to an immense amount—larger, it is believed, than that of any other similar incorporated company in the United States. In a few days, then, the "S. S. Lewis" will come from the hands of the constructors, and take her berth at the wharves of the Grand Junction railroad and depot company, and thence leave on her first voyage over the Atlantic. The day of her departure will be the dawn of a new era in this section of the country; for she will be the American file-leader of a new means of transportation and transit between New England and the Old World; the Yankee pioneer of a change in our commercial intercourse and relations both at home and abroad—a change, destined to be as impulsive, eventful and lasting, as marked and beneficial in its result,—so far as the traffic of our citizens with foreign climes is concerned, as has been effected among us, in the way of internal improvements, inter-communication and internal trade by the iron horse upon the land; a change, it may be added, which, as it goes on from year to year, involving, as sooner or later it must, steamboat building among us, and all matters connected with it, will create more and more activity in every branch of business among the people, to an extent, indeed that it were vain to expect to see realized in any other way.

This new and superior line of steamers has been founded by Messrs. Harnden & Co., of this city, in conjunction with a number of wealthy and powerful parties—not less eminent for their foresight and energy in commercial matters, than for their resources and influence in the community. The originator of this house, it will be recollected, was the person who established or led to the establishment of all the express lines upon the railroads in the United States. Leaving some time ago this particular branch of business to their successors in it, they have since been engaged as merchants and bankers, and now the public are again indebted to them for being among the first to lead in the establishment of American steamships from Boston to the ports of other nations; an undertaking, by far the most important for New England, that has been projected since the introduction of railways and locomotives among us—the most momentous and promising, in fact, that now remains to be carried on in this quarter of the country.

P. S. It has been stated that the steam ship "S. S. Lewis" will be in her dock in East Boston about the first of August ensuing. It is proper to add, that trains of cars are expected to leave Ogdensburg

and Montreal, with delegations from the merchants and principal men of those cities, and of Quebec, Toronto, Hamilton, and other places along the routes, in season to meet the new ship on her arrival, or for the passengers by these trains from the upper roads to visit her previous to her departure for England.

The first Steamboat on the Ohio River.

We find in the Cincinnati Chronicle the following statement, signed by J. Winton and Wm. McGranahan of Newport, Kentucky, in relation to the first steamboat that navigated the Ohio River:

As there are many erroneous opinions extant concerning the first steamboat built on the western waters, the undersigned would like you to publish their evidence in the matter.

In the fall of 1811 we were both present at the launching of the first steamer built on the Ohio river, and on board of her. She was built at the Pipetown shipyard at Pittsburgh; was intended for the Pittsburgh and New Orleans trade, and called the "Orleans." She was built after the fashion of a ship, with portholes in the side—long bowsprit—painted a sky blue. Her cabin was in the hold.

She left in November of that year (1811) for New Orleans and made the trip down in safety, but was never able to get back over the Falls, her power being insufficient to propel her against a strong current. She continued to run below the Falls for some time. Many persons are of the opinion that the *Enterprise* was the first boat built for the above trade. Such is not the fact. The *Enterprise* was the fourth or fifth boat built. The names of the others were the *Ætna* and *Vesuvius*, built by a company who had a charter for 14 years renewable, for the sole navigation by steam, of the Ohio and Mississippi rivers. The *Enterprise* was built at Brownsville by a private company, and on her arrival at New Orleans was attached for an infringement of the chartered rights of the company. A legal investigation followed, and the owners of the *Enterprise* gained the suit by proving that the plaintiffs had violated their charter. Thus ended the steamboat monopoly on the Ohio and Mississippi rivers.

Water vs. Railroad Carriage.

The Michigan Central railroad company have established a grain harehouse at Michigan city, and have undertaken to compete with lake vessels in transporting produce to Buffalo. The following we learn from the Michigan City News, is the difference in price by the two modes of conveyance:—

The freight price, by railroad to Buffalo, is 10 34-100 cents for 56 lbs.; but ordinarily the cost will be 11 cents, as the railroad charge is 14 cents per 100 lbs., and freight from Detroit to Buffalo 3 cents per bushel. By propeller, the usual rates are six cents per bushel to Buffalo; and produce, by this conveyance, reaches Buffalo as soon, within three days, as that shipped by railroad. This gives a difference of five cents in favor of the lake, as there is no warehouse charge upon grain received and sold to the forwarder after the opening and before the close of navigation.

Sheet Iron Pipes.

Sheet iron pipes of a new manufacture have lately been introduced into England from France, where they have been in use for several years.—They are made of sheet iron, which is bent to the required form and then strongly riveted together, after which they are coated with an alloy of tin, and the longitudinal joints are soldered so as to render them both air-tight and water-proof. In order to give them more stiffness, they are next coated on the outside with asphalt cement, and if they are intended to be used as water-pipes, the inside is also coated with bitumen, which resists like glass, the action of acids and alkalis. They are so elastic that they will bear a considerable deflection without injuring the pipes, or causing any leakage at the joints. The vertical joints screw together in the same manner as cast-iron gas-pipes. These pipes have been used for water, for gas, and for draining, and are found to be more economical than cast iron, besides being less liable to leak;

and for water pipes they are more healthy than the common ones.

Suspension Bridge across the Mississippi.—The Burlington (Iowa) Hawk-Eye states that Mr. Field, who is now engaged in constructing a suspension bridge across the Kentucky river for the Louisville and Frankfort railroad, proposes to the city council of Dubuque to erect a suspension bridge across the Mississippi at Dubuque. He offers, if suitable charter can be obtained, to take one-fourth of the stock; or, if \$100,000 can be obtained, he will take the balance of the stock. The city council have not replied to his proposition.

Illinois and Michigan Canal.

The report of the Treasurer exhibits the condition of the affairs of this company, on the 30th of November, 1850, as follows:—

The balance on hand, November 30, 1849, was	\$116,016 42
To this add—	
Sale of Canal lands and lots	263,907 04
Tolls received in 1850	125,504 25
Interest and exchange	4,781 96
Sale of old materials, &c.	191 65
	<hr/>
	394,326 90

Total to be accounted for 30th of November

The amount expended during the same period, by statement of Treasurer, was as follows:—

Payments on account of principal and interest, on loan of \$1,600,000, between 1st of Nov. 1849, and 30th Nov. 1850	331,794 86
Maintenance and repairs of Canal, including damages by freshets, &c.	56,415 20
General expenses and contingencies	23,324 01
Canal lands, land damages, 12,270 51	
Tolls, collectors and inspectors, drawbacks, &c., &c.	6,097 28
	<hr/>
	429,901 86

Balance to be accounted for

Of this balance, \$63,894 83 is deposited in the American Exchange Bank, New York, at interest, and the residue, \$16,546 60, in Illinois.

The canal was open for navigation 259 days in the year 1850, during which time the aggregate number of miles passed by boats navigating the canal was 333,141, equivalent to 3,501 boats through the entire canal.

The aggregate number of miles travelled by passengers, was 2,967,384, equivalent to 30,710 passengers through the entire canal.

Taking some of the same articles transported on the canal in 1849, and comparing them with the same quantities in 1850, it will be seen where the increase is, and where the decrease in the articles enumerated has taken place, for example:—

	1849.	1850.
Pork, barrels	9,398	12,933
Salt	58,353	24,609
Sugar, pounds	4,218,298	5,680,324
Merchandise, pounds	9,176,943	10,372,623
Wheat, bushels	579,598	417,036
Corn	754,288	317,674
Coal, tons	7,579	3,361
Lumber, M. feet	26,882,000	38,687,528
Tolls received	\$118,375	\$125,504
The annual sale of town lots in 1850 produced	\$82,750 00	
Canal lands, 6,443 acres	40,212 18	
	<hr/>	
Total	\$122,962 18	

Or \$26,659 54 greater than the annual sale of 1849.

Notwithstanding several unforeseen obstacles which the company have had to encounter, the general result of the operations of the year exhibits a

small increase in the revenue, of from \$118,375 in 1849, to \$125,504 in 1850, with the prospect that the business of 1851 will be more favorable than that of the past year.

Texas.

Buffalo Bayou, Brazos and Colorado Railroad.

We have received the report of John A. Williams, Esq., Chief Engineer of this road, giving the results of his preliminary surveys and examinations for a railroad route from Harrisburg to the Brazos river. These surveys were commenced May 17th, and the first division of eighteen miles of the whole distance was definitely located, and prepared for the contractors; the second division of sixteen miles more was examined instrumentally, with sufficient accuracy to determine the character of the route, and the comparative cost. The following is the estimate for the first thirty miles of the road, built substantially and of the best materials, and put in good working order:—

Graduation, drains, &c.	\$19,900
Superstructure	160,349
Motive power and equipment	27,200
Depots, Engine House and tools	16,100
Engineering, Agencies and Contingencies ..	10,451
	<hr/>
	\$234,000

being \$7,800 per mile.

The soil is a hard firm clay, mixed to some extent with sand, and will, it is believed, upon drainage, make a substantial track, as in that climate there will be no frost to contend with. The plan of superstructure estimated for is as follows:—A T rail of the best English iron, weighing 47 lbs. to the yard, laid upon post oak and red cedar cross-ties, 2,347 to the mile, and fastened with wrought iron chairs and hook-headed spikes of the best quality. Contracts have already been made for the rails, grading, and cross-ties for the first thirty miles, on favorable terms; and the directors express a confident expectation that twenty miles will be in running order by the middle of February next.

The grades on this road are extremely light, not exceeding ten feet per mile, and that only in one instance for less than half a mile, near Harrisburg. The route is also to a great extent free from curves. The eastern terminus of the road, Harrisburg, which is situated upon Buffalo Bayou, a stream always navigable to that point, is fifty miles by the bays of Galveston and San Jacinto, and twenty miles more by the Bayou, north-west from the city of Galveston, the principal seaport of the state; and is upon the direct line of communication from the seaboard to the interior and north-western portions of the state. Accompanying the report is an estimate of the probable business of the road for the first year, as follows:—

DOWN FREIGHT.	
20,000 bales cotton at 75 cts.	\$15,000
3,000 hhds. sugar, at \$1.50	4,500
4,000 barrels molasses, at 62½ cts.	2,500
30,000 bushels corn at 5 cts.	1,500
Miscellaneous freight	5,000
	<hr/>
	\$28,500
UP FREIGHT.	
100,000 bales and bls. merchandize, at 30 cts.	\$30,000
20,000 bushels corn, at 5 cts.	1,000
2,000 M. Lumber, at \$3	6,000
Miscellaneous	1,750
	<hr/>
	\$38,750
Passengers both ways	12,500
Mails, &c. " "	1,000
	<hr/>
	\$80,750

Gross receipts

These estimates are made, says the report, from the most reliable sources, and may be considered

as within the actual business which the road will secure. The soil is very fertile, and it is stated that one planter near the line of the road, sold, during the last year, 9,000 bushels of corn at over a dollar a bushel, in addition to 350 hds. of sugar, and 600 bales of cotton, while there are numerous plantations equally productive although less extensive. Fort Bend and Wharton counties, including the Brazos Valley or bottom, extending from four to eight miles on each side of the stream, and through which the road will pass, contain some of the best cotton, sugar, and corn growing land in the country. Much of this land is, however, lying unimproved, by reason of the extreme difficulty and great expense and uncertainty attendant upon getting the produce to market. The immediate effect of a railroad through that section would be to develop to an immense extent these dormant resources, and pour wealth into the lap of those who reside in its neighborhood.

After paying the expenses of working the road, and interest on the stock, the amount of receipts above estimated would leave a handsome dividend to be divided among the stockholders; and with these facts in view, the enterprising planters will no doubt urge forward the work with commendable vigor.

American Railroad Journal.

Saturday, July 26, 1851.

Stock and Money Market.

Since our last report there has been an increased activity in the money market. Money is in active demand, and though in the regular channels of business it is sufficiently abundant, it is much more difficult of access for purposes of speculation. There is a pretty strong downward tendency on stocks, and the prospect is that fancies will rule low for some time to come. Railroad bonds are in pretty good demand, and are now become a favorite investment. Those of the first class find a pretty ready sale at fair prices.

The supply of money for the future, depends upon the extent of our shipments of specie. The rapid rate at which it has gone forward since the commencement of the year has created a good deal of alarm. In Boston and Philadelphia the markets are pressed. In Boston particularly so. In speaking of the state of matters, the *Journal* says:—

Money was in active request this morning for short loans. The whole market wears a decidedly stringent aspect, and the people seem thoroughly alarmed. It would, however, require but a slight improvement in the specie statistics, to create a quick reaction, and the movements of coin during the next two or three weeks will exert a powerful influence on the opinions of money operators. As long as uncertainty and distrust exist, there is a disposition to contract, even with the ability to extend, and money becomes stringent by anticipation, though actually in quite as good supply as during two months past.

In Providence money was in request at higher rates.

A sale of 600,000 Boston city 5 per cent. stocks have been made to a foreign house through Blake, Ward & Co., at or about par.

The Comptroller advertises that he will receive proposals until the 19th of August, for one million of canal revenue certificates. Proposals may be made for taking the whole sum, or any part thereof—not less than one thousand dollars—but no certificate will be issued under one hundred dollars. The money is required by the 23d August. The certificates will be made payable on the 1st day of

July, 1861, and will bear interest at the rate of six per cent. per annum, payable semi-annually, at the Manhattan Company in New York, or at the state bank in Albany.

The foreign iron market continues depressed. Rails may be quoted from £5 to £5 5s. 0d. Below will be found the weekly report of Wm. Bird & Co.

140 Buchanan Street, Glasgow, }
June 28th, 1851.

The *Pig Iron* market continues quiet, and since our report of the 21st inst. we have heard of no transaction to any extent. In spite of the apparent languor, however, the consumption is greatly on the increase; and shipments which at the end of April were 50,000 tons in excess of corresponding months of last year, now show an increase of upwards of 70,000 tons.

For speculative purchases, the market has afforded for some time no margin,—hence in some measure, the dull tone; but the stocks in commission hands, coupled with the regular and increasing demand, lead us to believe that the opportunity for buying cheaply has not been wholly neglected by those who require pig iron for their own use.

Prices during the past week has undergone no change, though makers rates are somewhat easier.

Our quotations are as follows:—

	Mixed		No. 3.
	No. 1.	Nos.	
	s. d.	s. d.	s. d.
*G.M.B.	39 6	39 6	39 3 f.o.b Glasgow.
Gartsherrie. .	41 3	41	40 6 "
Langloan. . .	39 9	39 6	39 3 "
Forth.	43	42 6	42 " Charlestown.
Kinneil.	42 6	42 3	42 " Bo'ness
Eglinton and			
Glengarnock.	40 6	40	39 9 " Ardrossan.
" Gartsherrie" delivered f.o.b. East Coast at 1s.			
6d. per ton addl. Other brands 2s. 6d. per ton.			
Manufactured iron unaltered, with little demand,			
Bar Iron.—" Monkland" and			
similar quality. .	£5 5 0		per ton,
"Dundivan" do	5 5 0		f.o.b.
"Govan" do	5 12 6		Glasgow
Sheet and Plates.	7 10		usual
Hoops.	7 10		discount.
Nail Rods.	6 5		
* "Good Merchantable Brands."			
† "Free on Board."			

The *Petersburg Railroad Company* have declared a semi-annual dividend of 3½ per cent. Stockholders on the Philadelphia list will receive their dividends at the bank of Pennsylvania.

The following half yearly dividends have been declared upon some of the Massachusetts railroads, viz:—*Old Colony* 2 per cent.; *Passumpsic* 3; *Fall River* 3; *Boston and Worcester* 3½; *Fitchburg* 4; *Boston, Concord and Montreal* 6 per cent, dividend of interest in stock.

The following are the receipts of the *Hudson and Berkshire Railroad* for the month of June,—
Receipts to 30th June, 1851.....\$26,488
Same time 1850.....17,475

Increase, over 50 per cent.....\$9,013
The earnings of the *Ogdensburg Railroad* for the month of June, 1851, were:—

Through freight going East.....	\$8,222 78
" " " West.....	1,929 79
Way " " East.....	7,208 10
" " " West.....	1,884 89

Total freight.....	\$19,844 56
Passengers.....	8 256 23
Miscellaneous.....	2,056 00

Total earnings.....\$30,158 79

Michigan Central Railroad.—The following table exhibits the aggregate receipts and expenditure for the year ending May 31, 1850:—

	1851.	1850.
For passengers.....	\$505,964 31	\$375,695 98
For freight.....	412,262 50	279,056 13
Miscellaneous.....	48,777 75	44,124 61
	\$967,104 56	\$698,876 12

Expenses, exclusive of interest, but including the cost of replacing the depot and cars destroyed by fire..... 400,839 86 301,619 13

Leaving net income....\$566,264 70 \$397,226 99

The surplus from last year was \$18,061 77, leaving income and interest fund \$584,326 47. Paid interest, \$277,460 64. Dividend 9 per cent. cash declared Dec., 1850, \$230,544, leaving present balance of interest account, \$76,312,544, leaving \$76,312 83.

Whole number of passengers for the year ending May 31, 1850, was 152,671; from that date to May 31, 1851, was 191,851.

Morris Canal.—The receipts of the first two weeks of July were \$7,912 70, an increase of \$955 74 over last year.

Pennsylvania Canals.—The following statement shows the amount of tolls received upon the Pennsylvania state works up to the 1st of July, which, as compared with last year, shows an increase of upwards of \$75,000:—

December to July.....	\$967,433 76
Same period last year.....	891,973 55

Increase in 1851.....\$75,460 21

Kennebec and Portland Railroad.—Receipts for the first four months in 1851, \$21,371 11; same month in 1850, \$14,885 68; increase, \$6,485 43. The account for May will also show a handsome gain over the same month last year.

Rochester and Syracuse Railroad.—The receipts of this road for June, 1851, fare two cents per mile, amount to.....\$98,320
The receipts for the same month last year, fare three cents per mile, were..... 84,030

Increase in June, 1851..... 14,290

The Erie railroad is opened through from New York to Lake Erie, and doing large business; but the above statement shows that the competition has not injured the business of the Central Line, and is a conclusive argument in favor of cheap fare, which, like cheap postage yields the largest revenue.

Southern Michigan Railroad.—The traffic on this road has been good, and the returns made by the officers show a large gain. The earnings for the month of June, 1851 and 1850, were:—

June 1851.....	\$22,322 58
June, 1850.....	8,349 47

Increase.....\$13,973 16

The aggregate for the last six months.....112 774 46
Same time 1850..... 34,707 55

Increase.....\$87,066 89

The *Evening Journal* gives the annexed statement of the quantity of flour, wheat, corn and barley, left at tide water during the 2d week in July, in the years 1850 and 1851, as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1850.....	24,598	10,035	35 958	9,850
1851.....	68,105	90,528	322,879	880

Increase.....43,507 80,493 286 921 dec.8,970

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 14th July, inclusive, during the years 1850 and 1851, is as follows:

RAILROAD STOCKS.

[CORRECTED FOR WEDNESDAY OF EACH WEEK.]

	July 23.	July 16.
Albany and Schenectady.....	96½	—
Atlantic and St. Lawrence.....	55a60	—
Androscoggin and Kennebec.....	40a45	—
Boston and Maine.....	103½	103½
Boston and Lowell.....	110½	—
Boston and Worcester.....	104	103½
Boston and Providence.....	88a89	90
Bost., Concord and Montreal....	40	—
Baltimore and Ohio.....	75½	—
Baltimore and Susquehanna.....	34	—
Cheshire.....	54½	—
Cleveland and Columbus.....	—	—
Columbus and Xenia.....	—	—
Camden and Amboy.....	—	—
Connecticut River.....	68a70	—
Delaware and Hudson (canal)....	—	—
Eastern.....	98	98
Erie.....	83½	84½
Fall River.....	95	—
Georgia.....	—	—
Georgia Central.....	—	—
Harlem.....	73½	73½
Hartford and New Haven.....	126½	—
Housatonic (preferred).....	52	—
Hudson River.....	75	—
Kennebec and Portland.....	50a55	—
Little Miami.....	—	—
Long Island.....	16½	17½
Mad River.....	—	—
Madison and Indianapolis.....	96	103½
Michigan Central.....	103½	103½
Montgomery and West Point....	—	—
Michigan Southern.....	—	—
Manchester and Lawrence.....	95½	—
Morris (canal).....	16	16½
New York and New Haven.....	114	—
New Jersey.....	133	—
Northern.....	69	—
Nashua and Lowell.....	107½	—
New Bedford and Taunton.....	111	—
Norwich and Worcester.....	56½	56
Norfolk County.....	18a20	—
Ogdensburg.....	35½	36
Old Colony.....	67½	67½
Passumpsic.....	80	—
Pennsylvania.....	—	—
Pittsfield and North Adams.....	95	—
Philadelphia, Wilm'gton & Balt.	29½	29½
Petersburg.....	—	—
Richmond and Fredericksburg....	—	—
Richmond and Petersburg.....	—	—
Reading.....	56	56
Rochester and Syracuse.....	115	—
Rutland.....	53	53
Stonington.....	44	44½
South Carolina.....	—	—
Syracuse and Utica.....	130	—
Sullivan.....	15a18	—
Taunton Branch.....	110	—
Troy and Greenbush.....	90	—
Tonawanda.....	—	—
Utica and Schenectady.....	130	—
Vermont and Canada.....	103	—
Vermont Central.....	35	35
Vermont and Massachusetts.....	29	30½
Virginia Central.....	—	—
Western.....	102½	103
Wilmington and Raleigh.....	—	—
York and Cumberland (Pa.).....	22	—

The St. John New Brunswicker.

This paper finds fault with our review of Mr. Howe's railroad speeches, and says they are written by a gentleman connected with the European and North American railroad. There is not the remotest foundation for this statement. The person alluded to has neither written, nor suggested the writing of a leading article for this paper for a year past, nor even a line for many months. We might with equal truth say that he writes the leading articles for the New Brunswicker.

The editor of that paper, instead of disproving any of our positions, merely echoes some of our statements, and stands with mouth open, and hand raised, in mute astonishment at what we have said.

If the Editor does not agree with us, let him show in what we are wrong; and to give him something better to do than sneering, will he please tell us how much it will cost per ton to transport produce from Toronto to Halifax, over the Quebec railroad when built? Will he also give us the figures to prove Mr. Howe's assertion that the produce of Upper Canada will take the above route for shipment? Mr. Howe takes the affirmative. We claim that it will cost \$16 per ton to send over this route, when at the same time freight can be forwarded from Toronto, via New York, for one half that sum. If Mr. Howe is incorrect, it impugns either his motives, or his knowledge upon the subject of transportation by railroad—the latter of course. Mr. Howe's speeches are excellent specimens of popular speaking; but he cuts a ridiculous figure when he assumes to be authority upon subjects of railroading.

Railroad Furnishing Store.

A new railroad furnishing store has recently been opened in this city, by Bridges & Brother (late of the firm of Davenport & Bridges, of Cambridge Mass.,) where almost every article used in the equipment of roads may be found. Mr. Bridges has had a long experience in the practical department of car and locomotive manufacture; and for this reason can more easily meet the wants of companies,—who will find at their store, at No. 64 Cortland St., every article and of good quality, that comes within the circle of their wants.

A New Locomotive Establishment.

Messrs. Smith and Perkins, of Alexandria, Virginia, have commenced the manufacture of Locomotives upon a pretty extended scale. They now employ about 150 hands, and are now manufacturing at the rate of about twenty locomotives a-year. Mr. Perkins was for many years superintendent of machinery and repairs upon the Baltimore and Ohio railroad; and has long enjoyed the reputation of being one of the most skilful and practicable mechanics in the country. There is probably no person among us better capable of constructing a good engine, or a better judge of work. The above establishment is now engaged in filling orders for the Orange and Alexandria and the Manassas Gap railroads, terminating in Alexandria.

The above establishment is one of the beneficial results of the railroad movement in Virginia. But for railroads in that State, it never would have existed. The railroad is the pioneer, and where they are constructed a thousand branches of industry follow in their train. They create a demand for labor to construct and maintain them, and by opening up a market to every article of use or consumption, stimulate every kind of industry. As the South is behind the North in the manufacturing establishments, we hope to see them give a liberal patronage to their own works, a course which will be of mutual benefit to all parties.

Kentucky.

Louisville and Frankfort Railroad.—The third annual report of the directors of this company contains a very satisfactory statement of the condition of the road. On the 1st of June, 1850, the road was completed and in operation to Lagrange, a distance of twenty-six miles; and since that time it has been completed from Lagrange to Frankfort, 38 miles. Trains now run regularly twice a day in each direction along the whole length of the road.

The subscription of the city of Louisville amounts to \$800,000, for which there has been issued to her 15,983 shares of stock, of which she has transferred

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1850....	694,546	258,307	1,507,378	126,801
1851....	277,793	669,377	3,503,864	104,631

Inc.... 582,347 411,070 1,996,486 dec.22,170
The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 14th July, inclusive, during the years 1849 and 1851, is as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1849....	950,116	643,615	2,750,576	96,826
1851....	1,277,893	669,377	3,503,864	104,631

Increase. 327,777 25,762 753,288 7,805

By reducing the wheat to flour, the quantity of the latter left at tide water this year, compared with the corresponding period of last year, shows an increase of 664,561 bbls. of flour.

The amount received for tolls on all the New York State Canals during the 2d week in July, is.....\$85,686 50
Same period in 1850..... 66,750 68

Increase in 1851.....\$18,935 82

The aggregate amount received for tolls from the commencement of navigation to the 14th of July inclusive, is.....\$1,297,834 18
Same period in 1850..... 1,059,413 58

Increase in 1851.....\$238,420 60

Railway Share & Stock List;

CORRECTED WEEKLY FOR THE
AMERICAN RAILROAD JOURNAL.

NEW YORK JULY 26, 1851.

GOVERNMENT AND STATE SECURITIES.

U. S. 5's, 1853.....	101½
U. S. 6's, 1856.....	106½
U. S. 6's, 1862.....	111
U. S. 6's, 1862—coupon.....	113a114
U. S. 6's, 1867.....	116½
U. S. 6's, 1868.....	110½
U. S. 6's, 1868—coupon.....	121½
Land Warrants.....	140a145
Arkansas 6's.....	52a53
Alabama 5's.....	91a92
Indiana 5's.....	82a83
Illinois 6's, 1870.....	65a68
Kentucky 6's, 1871.....	109a110
Massachusetts sterling 5's.....	105a106
Massachusetts 5's, 1859.....	100½
Maine 6's, 1855.....	103
Maryland 6's.....	102½
Michigan.....	—
Mississippi.....	—
New York 6's, 1865.....	117a118
Ohio 6's, 1860.....	108
Pennsylvania 5's.....	90½a91

RAILROAD BONDS.

Atlantic and St. Lawrence, 6 per cent.....	85
Baltimore and Ohio, 1857.....	95
Boston and Providence 6's, 1855.....	101
Boston and Worcester 6's, 1855, convertible.....	107½
Bost., Concord and Mont. 6's, 1860, mortgage.....	87½
Cheshire 6's, 1860.....	91½
Connecticut River 6's, convertible.....	98
Erie 7's, 1859.....	103
Erie 7's, 1863.....	109½
Erie income 7's.....	98
Hudson River 7's, 1853.....	106½
Michigan Central, convertible, 8's, 1856.....	104½
New York and New Haven.....	100½
Norwich and Worcester, mortgage, 1860.....	80a85
Old Colony, 1854.....	97½
Ogdensburg 7's, 1859.....	97
Portsmouth and Concord.....	80a85
Passumpsic 6's, 1859.....	94½
Rutland 7's, 1863.....	97
Reading mortgage, 1860.....	80
" " 1870.....	75
Sullivan, mortgage 6's, 1855.....	80
Vermont Central 6's, 1852.....	96½
" " 6's, 1856.....	91½
Vermont and Massachusetts 6's, 1855.....	86½

9,648; shares to individual tax-payers, leaving 6,335; shares to her credit on the books of the company. The tax of one per cent. per annum on the citizens of Louisville was very closely collected.

Since the 1st of June, 1850, contracts were made for laying the track east of Consolation, and for a wire suspension bridge over the Kentucky river, at a cost of \$27,000.

The company now own the entire square bounded by Jefferson, Brook, Green and Floyd streets, and are erecting a substantial depot on it, 200 by 84 feet.

From the report of the chief engineer, Mr. C. N. Warren, we learn that for most of the past year two daily trains have been running which more than paid their expenses, besides supplying the necessary materials for the track.

The grade of the road stood the past winter very well, with the exception of a few embankments that required widening and raising. The receipts for the year, chiefly for way business, amounted to \$10,263 80, while the running expenses were \$23,730.03, leaving a profit of \$16,533 77, which was applied to the construction of the road.

The stock of the company now consists of three locomotives, four first class passenger cars, two second class passenger cars, twelve covered and twenty-four open freight, and twelve gravel and dirt cars. Contracts have been entered into for three more locomotives, two of which are now due and one will be in August. One is on the way from Pittsburgh.

The company has the contract for carrying the mails between Louisville and Frankfort. This contract has just gone into operation.

The effects of the road on the value of real estate were not overrated. All along its entire length, the value of lands has been increased, and in many places it has been doubled. The effect on the prosperity of the cities at each end of the route has also been highly favorable.

Railroad from Pittsburgh to Wheeling.

The Pittsburgh people are somewhat stirred up by the Hempfield railroad project, which threatens to cut them off from the direct route from Philadelphia to Central Ohio. To avoid the effect of this road, if built, they propose to build a road direct to Steubenville, and from thence to Bridgeport, opposite Wheeling, and they claim that the latter city can be reached from Philadelphia via Pittsburgh by as short a route as by the Hempfield railroad. The Pittsburgh Gazette, speaking of this route, says:

1. It is as direct. The railroad distance from Wheeling to Greensburg has been variously estimated at from 80 to 90 miles. From the difficult nature of the country, we may take the latter as the true figure, or say 91 miles to Bridgeport, opposite Wheeling, which will be the terminus of the Western and Southern roads, in the direction of Wheeling, and the true point of divergence and competition. The Steubenville route figures up thus:

Greensburg to Pittsburgh.....	31 miles,
Pittsburgh to Steubenville.....	40 "
Steubenville to Bridgeport.....	20 "
Total.....	91 "

Making the distance by both routes the same, and intercepting the trade and travel before it reaches the stations of the Baltimore road in Wheeling.

2. It is cheaper. The Hempfield will be a very expensive road. It crosses two large navigable rivers, and tunnels five hills, and the whole 90 miles would have to be built. By the Steubenville route, only 60 miles of additional road would require to be built, and twenty of that could be very cheaply constructed.

3. It is more economical for Philadelphia, as she

would thus use the whole of her road, instead of turning trade off of 31 miles of it; and the Steubenville road will pay much better, as it will pass through a large city, giving it a large local trade.

From this examination it will be seen that Philadelphia can accomplish her object of attracting the Cincinnati, Belpre and Marietta road to Wheeling, and of enjoying its trade and travel, together with that of the Ohio Central railroad, better by assisting to build the Pittsburgh and Steubenville road, than by throwing her aid to the Hempfield project. There is no doubt also that the Cincinnati, Belpre and Marietta company would like this arrangement much better, as it would give them just as direct a road with the east, besides opening up to them the trade of this city.

New Hampshire.

Sullivan Railroad.—From the annual report of the directors of this company, submitted to a meeting of the stockholders recently, we learn that the receipts of the road during the year ending July 1st, 1851, have been \$26,959 40 over the expenditures. The balance of stock has been subscribed, and the requisite steps taken to relieve the stockholders from the individual liability. The branch and bridge across the Connecticut river at Bellows Falls are nearly completed. The prospects of the road are represented as very favorable for its future business.

The following gentlemen were chosen Directors for the ensuing year, viz:—Charles Thompson, Charlestown, Mass.; George Denny, Boston, Mass.; Jonas Livingston, Claremont; Aurelius Dickenson, Claremont; J. B. Upham, Boston; Henry Hubbard, jr., Charlestown, N. H. and J. M. Glidden, Charlestown, N. H.

The Board of Directors, at a meeting holden July 15th, 1851, re-elected Hon. Charles Thompson, President; D. A. Gage, Superintendent; George Denny, Esq., Treasurer; P. C. Freeman, Esq., Clerk.

Indiana.

A large meeting of the citizens of Dearborn, Decatur, Ripley and Shelby counties, interested in the Lawrenceburg and Upper Mississippi railroad, was held in Greensburg on the 4th instant, James Elliott, Esq., of Shelbyville, presiding. The meeting was addressed by Hon. George H. Dunn, President of the above road, and others; and a confident expectation was expressed that at no distant day the cars would be running between Lawrenceburg and Greensburg. Letters were read from Gov. Wright, Albert S. White, President of the Lafayette and Indianapolis railroad company, Henry B. Hill, President of the Shelbyville and Knights-town railroad company, and other gentlemen, expressing their entire sympathy with the railroad enterprise, which the meeting was endeavoring to promote. Mr. White stated that the next 4th of July would witness the completion of the road from Lafayette to Indianapolis, and that then, or very soon after, the entire route would be completed between Lafayette and Lawrenceburg.

Mississippi.

New Orleans and Jackson Railway.—A meeting was held in Aberdeen, Mississippi, on the 4th June, to consider the practicability of a railroad to Jackson, to connect at that point with the New Orleans and Jackson Railroad. There seemed to have been considerable enthusiasm. A committee was appointed to prepare an address to the people of New Orleans, Jackson and Vicksburg, uniting their co-operation, and recommending energetic action. Chancellor Cocke was appointed to represent Aberdeen in the convention to be held in Jackson on the first Monday of this month.

New York.

Rochester and Syracuse Railroad.—We learn from the Albany Journal that, at a meeting of the Directors on the 4th of June last, it was resolved to create new or additional stock to the amount of fifteen hundred thousand dollars, to be divided into shares of one hundred dollars each, and the same to be distributed *pro rata* as near as may be, among the respective shareholders of this company, according to the number of full shares held by them on the 21st of July next, who shall on the first day of August next, or within twenty days thereafter, pay to the Treasurer of this company the sum of ten dollars on each share of additional stock to which they may be severally entitled. The certificates for shares are to be issued on the payment of the said sum of ten dollars per share, on condition that the balance of the stock shall be paid in such installments as may be required by the Directors, and that on failure to pay any such instalment, all the stock so in arrear, shall be forfeited to the use of the company. Interest is to be semi-annually paid to the holders of the new stock on all sums paid thereon, until the said stock shall be made full.

Canada.

Bytown and Prescott Railroad.—At a meeting of the stockholders of this company, held at Bytown on the 21st of May, the directors submitted a report of their proceedings for the four months previous. On assuming the duties of directors, in January last, they engaged the services of Walter Shanly, Esq., as Chief Engineer, and directed him to proceed with the examination of several routes, and report thereon as soon as practicable. The examinations were accordingly made, with as much expedition as circumstances permitted at that season of the year, and completed about the middle of April. A meeting of the directors was held at Prescott on the 17th of April, at which Mr. Shanly's report was received. The directors also definitely located the line of the road from the St. Lawrence river, at Prescott, to the Ottawa river, at Bytown, by way of Kemptville, and keeping on the east side of the Rideau river. The amount of stock subscribed, and now available, exceeds £52,000, showing an increase of £24,000 since the month of January. The expenditure thus far has been confined almost entirely to the survey, and amounts to £105. If the work be pushed with energy, the directors say the road may be in operation before the close of 1852.

The officers for the present year are:—John McKinnon, Esq., President; Alfred Hooker, Esq., Vice-President; Robert Bell, Secretary.

John McKinnon, Joseph Aumond, Charles Sparrow, Daniel McLachlin; Nicholas Sparks, John Egan, John S. Archibald, Joseph Bower, Alfred Hooker, Thomas Creighton, John Moran, Alpheus Jones and William Patrick, Directors.

Illinois.

Springfield and Bloomington Railroad.—The route for this road is now under survey. A branch is to be built from Bloomington to Peoria, to connect with the Peoria and Oquawka railroad. At Bloomington the road is to connect with the Illinois Central, in case the last named route passes through that town; if not, by a branch.

The above road is a continuation of the Alton and Sagamon railroad, which is soon to be completed to Springfield, and will probably be constructed by the same company. It is claimed that at its junction with the Central, it will become the trunk line for the travel of the latter to St. Louis and the Mississippi river.

Routes Across the Isthmus of Panama.

We learn from a friend who has just returned from the Isthmus, that the new boat, recently placed upon the Chagres river, is navigating that stream very successfully. It is called the Aspinwall, and runs between Chagres and Gorgona and Cruces and is capable of carrying from 200 to 300 passengers. Her construction is a novelty; she has a stern wheel, from 15 to 18 feet in diameter; her hull is 110 to 125 feet long, and from 20 to 25 feet wide, with a main, promenade and hurricane deck; she has a double engine of 125 horse power; her bottom is entirely flat, and without any keel and she draws but 15 to 20 inches of water. She carries on her bow an oar about 25 feet long to assist in steering. She makes her passages in from eight to ten hours. Her passengers are well protected from the rain, which commences in May, and continues through December.

Gorgona and Cruces are from 50 to 60 miles by the river, from Chagres, and only about 20 from Panama. Between Gorgona and Panama, the land route is travelled by mules only.

The Panama railroad company, says our informant, are expecting soon to have their road completed from Navy Bay to Gatun, a point on the Chagres river, about ten miles from Chagres. Passengers from the ocean steamers will then land at Navy Bay instead of Chagres, and go over the railroad to Gatun, and thence by steamer to Gorgona. From this place they will continue to travel on mules to Panama, until the road is completed from ocean to ocean.

The route by way of Nicaragua, is soon to be tested. Mr. Vanderbilt, we understand, is about placing some small steamers upon the river and the lake. The distance by steamers will be about 180 miles, and thence by land from 12 to 15 miles to the Pacific ocean. Whether his small steamers will be able to stem the Rapids on the San Juan river, will soon be determined by actual experiment. This route will shorten the distance over the Panama route some five or six hundred miles, on the Pacific side, but will be more than double the distance across the Isthmus.

The Tehuantepec route is yet full of difficulties, but when established, it will shorten the distance from New York to San Francisco near 1800 miles; and from New Orleans to San Francisco near 2,500 miles. The government of Mexico have annulled the grant to Garay; but the company at New Orleans, who hold under him, appear to be determined to push forward their enterprise in defiance of the opposition of the Mexican government.

Massachusetts.

Taunton Branch Railroad.—At a meeting of stockholders of the Taunton Branch Railroad, in Taunton on the 30th ult., the following persons were chosen Directors for the ensuing year:—William A. Crocker, Thomas B. Wales, Samuel Frothingham, John F. Loring, and Fitzhenry Homer. At a subsequent meeting of Directors, W. A. Crocker, Esq., was re-chosen President, Edward Pickering, Treasurer, and A. E. Swasey, Superintendent.

North Carolina Railroad.

The following gentlemen have been chosen directors of the road for the present year:—

William C. Means, of Cabarrus; John W. Ellis, and D. A. Davis, of Rowan; Francis Fries, of Forsythe; John W. Thomas, of Davidson; John M. Morehead, and John A. Gilmer, of Guilford; Cad. Jones, Sen., of Orange; Edwin M. Holt, of Alamance; R. M. Saunders, of Wake; A. T. Jenkins, of Craven; Frederick J. Hill, of Brunswick.

Philadelphia, Baltimore and New York.

There seems likely to be a very spirited contest between Philadelphia and Baltimore, in their efforts to form advantageous connexions to secure western trade. We think it must result in the speedy completion of the Hempfield and the Pittsburgh lines.

Each of the above cities is amply able to execute any projects that look to their present or future welfare, and they will probably move in a much more efficient manner with the stimulus of rival interests than without such. Pittsburg too, feeling slighted, perhaps unjustly treated, by the aid that Philadelphia is extending to the Hempfield route, now proposes to open a communication with the Baltimore and Ohio railroad, near Cumberland, which can very easily be effected. Such a connection would be of great benefit both to Pittsburg and Baltimore, and would bring the former on the direct line between the latter and the great lakes.

Philadelphia and Baltimore expect a very large increase of business upon the completion of their respective lines of railway. Each of them counts upon monopolizing, by virtue of their superior positions, a large part of the western trade. In the mean time our own state is watching the progress of her rivals with great attention, and is doing all in her power to retain her supremacy. Our canals are speedily to be enlarged to their utmost capacity, and all restrictions upon the carriage of freight by railroads have been removed. All idea of protecting the business of the canals by imposing taxes upon railroads, has been abandoned, and nothing has been left undone to reduce the cost of transportation upon our own highways. New York, Philadelphia and Baltimore are about to start upon a new race for western trade, the possession of which is equivalent to commercial supremacy.

Canada.

It is stated that the Champlain and St. Lawrence railroad company will have their line completed, from St. John's to Rouse's point in the course of the present month, the contractor being now actively engaged in laying down the rails. This will give the city of Montreal an uninterrupted communication by railway, with Boston and New York.

Ohio.

Cleveland and Pittsburgh Railroad.—This road continues to do a very large business. During the first week in July 7,000 persons passed over the road; on the fourth of July, 3,800. The receipts on the 3d, 4th, and 5th, were over nineteen hundred dollars. On the 4th alone over \$1,000. This is doing remarkably well for a road that is only partially opened, and shows what may be expected when the road reaches the Ohio.

Mad River Railroad.—The T. rail is now being put down daily on the Mad River road. About thirty-five miles of the road are in readiness for the new iron.

Jeffersonville Railroad.

A vote is to be taken at Louisville on Saturday the 23d of August, on the question of a subscription by the city of a million of dollars to the Louisville and Nashville railroad, and \$200,000 to the Jefferson and Columbus railroad.

Indiana.

The New Albany Ledger states that the President of the New Albany and Salem railroad company had sold \$100,000 of the 10 per cent. bonds of the company to Englishmen at 10 per cent. premium. The cars will be running from Albany to Orleans on or before the first of September.

The Golden Gate.

This splendid new steam-ship, which was built by W. H. Webb for Messrs. Howland and Aspinwall's Pacific mail steamship line, made a trial trip last week as far as Chesapeake Bay, returning on Thursday evening after a varied and pleasant voyage. The Tribune describes this vessel as one of the finest steamers ever built. Her length on deck is 270 feet; her breadth of beam 40 feet, and her depth of hold, 30½ feet. Her engines are built on the oscillating principle, and are eighty-five inches in diameter, with nine feet stroke. The cylinders, instead of being stationary, as the other form of engines, are constructed in such a manner that the cylinders vibrate on trunnions, similar to that of a gun, the upper end of the piston rod being directly connected with the crank which turns the shaft, the movement of the cylinder allowing the piston rod to follow the circular motion of the crank. These engines are the largest ever made on this plan. The trunnions are cast solid with the cylinders, and are made hollow, so as to allow the steam to pass in at one end and escape through the other into the condenser. The pumps are driven by the connecting shaft, which is made with a crank forged solid in the centre of it, of such a size as to give the air pumps four feet stroke. There is a separate condenser to each engine rendering them perfectly distinct, so that one may be worked entirely independent of the other. The valves of the cylinders through which the steam passes, instead of being of the ordinary sliding form, are those known as the conical balanced valves, similar to those used on stationary cylinders in engines of American construction. This improvement enables one man to work one of those monstrous engines with as much ease as six men could work one with the old slide valves. When standing on the pilot-house, but for the noise of the wheels, it is almost impossible to tell whether the engines are working or not. The great advantage of engines on this principle is the great economy of space and weight in the ship, as they do not occupy more than half the room of side-lever engines of the same size, nor are they more than two-thirds their weight. The entire length of these engines is only eighteen feet. They were built at the Novelty Works of Messrs. Stillman, Allen & Co., and the plans were drawn and arranged by Thomas Davison. They were completed in eight months, the shortest time engines of this size were ever made in.

Michigan.

Michigan Southern Railroad.—We learn from the South Bend Register that the cars have reached White Pigeon, which is within thirty-five miles of South Bend. The company has perfected a permanent arrangement by which the steamers Baltic and Saratoga are to make daily trips between Monroe and Dunkirk. Passengers will be taken from Monroe to New York in forty-one hours. We learn also from the same paper that eight new locomotives and one hundred and forty-five new cars are to be placed upon the southern road immediately.

Michigan Central Railroad.—We learn from the Michigan City News of the 11th inst., that the contracts on the Central road from that place to the Illinois line have been let during the present week. T. Martin, Esq., of Michigan city, has taken the contract for half the distance, and Messrs. Williamson and Tiltonson, of Marshall, have taken most of the other half. It is thought the grading will be completed by the 1st of October.

Dayton and Michigan Railway.

The Dayton and Michigan railway company was duly organized under the charter on the 8th instant, at Troy. Thomas J. S. Smith, of Dayton; Thomas J. Line, of Tippecanoe; William Barbee, John G. Telford, H. S. Mayo, and Joseph Brown, of Troy; and Dr. William Fielding, of Sidney, were elected directors by the stockholders. The board of directors was then organized, and elected William Barbee President, H. L. Mayo, Treasurer, and Joseph Brown, Secretary. \$83,400 of unrestricted stock had been already subscribed.

The Troy Times, in speaking of the above project, says:—

"Whoever has surveyed the Miami Basin in its length and breadth, now the most productive portion of the continent, will accord to us truth when we say that a line of railroad, belting its whole length, draining it of its immense productions, and in turn ministering to its wants and consumption, would have no superior in any of the proposed railroads, running either north and south or east and west.

The efficiency of the board of directors is such as to give satisfaction to the friends of the measure here at home, and to give confidence to the friends abroad.

We hazard the opinion that the newly constituted board, so far as it relates to energy, ability and efficiency, could not be surpassed by any among us, or about us."

Canada.

Great Western Railroad.—The directors of the Michigan Central railroad have issued a circular to the Stockholders, proposing that they shall subscribe to the stock of the Great Western Company, equal to six per cent. on their interest in the former company. The circular states that most of the large stockholders have signified their acquiescence in the proposition. It is understood that the subscription is not to be called for, unless, in the opinion of the committee appointed at Niagara Falls, at the convention in May last, such an amount is subscribed by American stockholders as will secure the prompt completion; and provided further, that a satisfactory arrangement shall be made in regard to the management of the road.—*Albany Journal.*

Railroad Meeting at Pittsburgh.

The citizens of Pittsburgh held a meeting on the 12th inst., called in consequence of the recent movement in Philadelphia in favor of the Hempfield railroad, which if it is made, is to cut Pittsburgh off in the passage between Philadelphia and the great West. It was deemed by the meeting that the best means of avoiding any such threatened evils was to push vigorously the road from Pittsburgh to Steubenville. The following resolutions were adopted:—

Resolved, That the project recently entertained in Philadelphia, and sustained by the managing directors of the Pennsylvania railroad company, involving a virtual abandonment of a part of the Pennsylvania railroad, by an attempt to concentrate at Wheeling, Virginia, all the trade, travel, and resources of the Ohio—of the West, South and South-west—is a project founded in an entire ignorance of the true condition of things in this region of country, and would (if it could be carried out) prove fatal to the best interests of Philadelphia, as well as wrongful and highly injurious to Pittsburgh, to Western Pennsylvania, and to the whole state.

Resolved, That the extravagance of such a project persisted in, as we understand it is, and will be, demands at our hands a prompt and decided exposure; and that for this purpose, a committee of five be appointed by the President, to proceed to Philadelphia, where it finds favor and support, to expose the true character of the scheme, and to present the merit and pretensions of the Pittsburgh and Steubenville railroad, as the means which will secure, in reality, all, and more than all, the blessings so deceitfully promised by the scheme referred to.

Resolved, That as the officers and managing directors of the Pennsylvania railroad company have, by their recent action in Philadelphia, attempted to sustain the wrongful and injurious project to which we have referred, and are now, as we are informed, engaged in furthering it, it becomes the duty of the commissioners of Allegheny county, from which the said company have obtained a million of dollars to join us in sending representatives from said county to Philadelphia, for the purpose mentioned in the foregoing resolutions; and that the attention of said Commissioners and of the people of our county should be earnestly directed to the proceedings of said company, with a view to secure a faithful performance of its obligations, and to prevent an improper application of the stock, credit, and influence of said company, to the construction of other roads injurious to our county and to the whole state.

Some of the speakers urged that in addition to the Steubenville road, the people of Pittsburgh ought to direct their attention, at the earliest practicable moment, to the completion of the Connells-ville railroad, by which a connexion would be formed with Baltimore.

The meeting adjourned to Saturday 19th inst., when the committee appointed to visit Philadelphia were to report.

Baltimore and Ohio Railroad.

The following table will show the gross revenue of the Baltimore and Ohio Railroad, for the last six months, compared with the corresponding six months of 1850:—

	1850.	Washington Branch.
Main Stem.		
January,		
Passengers	\$24,828.82	\$18,009.17
Freight	66,517.89	3,888.97
February,		
Passengers	29,090.34	19,523.29
Freight	75,630.01	3,925.68
March,		
Passengers	44,271.15	25,953.72
Freight	81,747.03	7,235.00
April,		
Passengers	35,574.85	21,945.65
Freight	68,677.94	3,941.06
May,		
Passengers	33,177.36	24,543.72
Freight	72,840.39	4,240.69
June,		
Passengers	29,768.15	21,168.03
Freight	82,484.20	6,027.59
	\$644,608.13	\$160,422.57
Revenue	\$805,030.70	

	1851.	Washington branch.
Main stem.		
January,		
Passengers	\$25,298.63	\$20,140.18
Freight	90,450.07	4,607.14
February,		
Passengers	27,567.98	22,048.59
Freight	90,402.11	4,236.80
March,		
Passengers	33,635.14	22,645.68
Freight	84,353.74	7,158.39
April,		
Passengers	29,503.96	20,675.60
Freight	71,035.03	4,093.24
May,		
Passengers	25,589.32	19,146.54
Freight	66,638.87	3,863.12
June,		
Passengers	25,086.78	17,906.02
Freight	85,768.19	5,875.54
	\$655,329.82	\$152,398.84
	152,398.84	
Revenue	\$807,728.66	
	805,030.70	
Increase in 1851	\$2,697.96	

The revenue of 1850 was greatly larger than in 1849, and the fact that there is an increase in this year over that of 1850, is a most gratifying evidence of the prosperity of the road, and of the already large and rapidly increasing trade of the country through which it passes.

It will be noted that the increase is on the main stem, while the revenue of the branch to Washington has fallen off this year. This is, of course, owing entirely to the fact that Congress adjourned last March, while it was in session in 1850 up to the fall. The falling off is then entirely from the natural decrease of travel to and from Washington. This circumstance would also necessarily affect the travel over the main stem, and yet the revenue from it is larger this year than last.

In the above table we have included only returns from the six months of this year. The fiscal year of the company commences in October, when the annual report is made, and as we have the figures before us, we add the comparative statement for October, November, and December, of the years 1849 and 1850. They are as follows:—

	1849.	1850.
Main Stem	371,645 33	369,805 06
Washington Branch	70,396 60	78,453 68
	442,041 93	448,258 74
		442,041 93
Increase		6,216 81
" in 1851		2,697 96

Total increase

Thus it is seen that in the nine months ending on the 30th June, 1851, there has been an increase of revenue over the corresponding months of 1849 \$50, of nearly nine thousand dollars.—*Baltimore Patriot.*

Result of the Opening of the South Carolina and Georgia Railways upon the Cotton Trade.

The tabular statements accompanying De Bow's Commercial Review for May, show that for the last three years the exports of cotton have diminished from New Orleans more than 12 per cent., and have increased from the port of Charleston nearly 13 per cent. The increase at Charleston, and the decrease at New Orleans was largest in the year 1850, after the opening of the railway to Chattanooga, evidently showing the capacity of railways to draw the heavy trade from the irregular navigation of the smaller rivers of the west. The results will be probably, equally significant when the large tributaries of the Mississippi shall be reached by railway from the South.

The decrease at New Orleans in 1849 and 1850 was from 1,191,000 to 797,000 bales; while the increase at Charleston during the same time was from 261,000 to 384,000 bales. This embraces a period of depression in production, and of accident to the railway, suspending its operations for two months.—*Louisville Courier.*

Railroad Movements in the West

An active competition is going on among the towns below us on the river, to draw from Cincinnati the trade of the fertile State of Indiana, and to secure it to themselves. Their united efforts are of course directed to divert this trade from us, however they may disagree in the distribution of it.

Louisville and Jeffersonville, in the direction of Indianapolis represent one interest, New Albany another, Madison still another, and more powerful interest. The road from Jeffersonville to Columbus is nearly ready for the cars. The certainty of the completion of this rival road, has stimulated Madison to more vigorous exertions to prevent the trade of the rich counties of Shelby, Rush, &c., from being diverted to Louisville. As a means of preventing this, the city council of Madison have appointed a committee, consisting of Messrs. Sullivan, White, Stapp and Farnsworth, to negotiate for the purchase by the city of the railway from Edinburgh to Shelbyville. This will give the Madison and Indianapolis railroad the control of the Rushville and Knightstown branches; the three making an aggregate of nearly 50 miles of railroad.

The Louisville Courier says: "It will not do for

our citizens to remain listless while neighboring cities are active and awake to their interests.—Louisville should have the control of the roads beyond Columbus, as in this way only can our merchants trade with the people of that section on anything like fair and equal terms. Let us, by a well directed policy, secure a trade of almost incalculable magnitude, and a trade too with which we have heretofore been entirely unacquainted, and which has been enjoyed exclusively by Cincinnati and Madison. Few of our readers have an adequate conception of the beauty, fertility and productiveness of that portion of Indiana with which the Jefferson railway will bring us into connection, and now that the vast trade of this rich region is within our grasp, we must not by inaction permit it to be wrested from us. A bright future is before Louisville if she is only true to herself."

And what will be the future of Cincinnati, if she sleeps on and lets this vast trade go into other markets?—*Cincinnati Gazette.*

Extension of the Baltimore and Ohio Railroad West.

This day marks another epoch in the Baltimore and Ohio Railroad. To-day it will be finally opened from Cumberland to a point some thirty miles west of that city, and thus be brought into closer proximity with the coal mines in that region.

The progress of improvement has been so fast of late, that few can or do take notes of events as they pass. It will surprise many, who look only at what has been done, to be told that the Baltimore and Ohio railroad was the pioneer of all railroads in the United States, and that when it was commenced, no similar work of such a magnitude was ever projected in the world. And even more striking is the fact—when we look upon what has been done in the interval,—that the first train of passenger cars in the United States was put in motion December 28th, 1829, upon the Baltimore and Ohio railway, which was opened on that day to Ellicott's Mills, a distance of thirteen miles from Baltimore. At long intervals, the road was opened to Frederick, then the branch road to Washington city—then the main road to Hancock, and then, so many years ago we will not attempt to recollect the exact time, it was opened to Cumberland.—Here it stopped ever since—now trying to get Virginia to give it a proper right of way to the Ohio river; and again holding back, because Pennsylvania was not inclined to give it a free passage through her territory. At length Virginia granted terms which the company, for want of better, was obliged to accept, and the work of making the road to the Ohio river at Wheeling, was commenced with vigor. From the day that the first shovel of earth was removed on the line of the road west of Cumberland, it is only just to say that every officer of the company, the president, the chief engineer, and all the others, have shown an energy and an ability, and have persevered in the work with such admirable success, that the day of its completion to Wheeling as fixed by them, is regarded by every body, who has looked into the matter, as a "fixed fact," upon which all reliance may be made.—*Baltimore Patriot, July 21.*

Railroad from Wilmington to Petersburg.

We are willing to venture the broad assertion, that our railroads from Wilmington to Petersburg, are equal to any in the country (or will be when the entire line is relaid with T and U iron, of which only a comparatively small portion remains to be done; and our cars are not surpassed by any, either North or South, for beauty, comfort and convenience. The locomotives are nearly all entirely new and are under the control of experienced engineers, while the conductors will compare favorably with the same number of gentlemen anywhere and occupying any position. The Petersburg road is paying a dividend of 8 per cent., and if the Wilmington road would fund her debt as the boasted South Carolina road has done, ere long she too would be paying handsome dividends.

We are willing to put our officers, roads, cars—all, against any road in the United States, and are fully satisfied they would not suffer by the comparison. By the way, the Petersburg company have recently put on another new and most superb sleeping car, built at their Depot.—*Weldon Patriot*

Louisville, Kentucky.

The Cincinnati Gazette, in speaking of the influence that railroads are beginning to exert upon that city, says:

Louisville appears to be reaping the reward of her energy and liberality in giving such strong and liberal aid at once to the internal improvement enterprises which centre there. The railroad to Lexington is now a pleasant route, and the distance is run in a few hours. From Madison and from Jeffersonville into Indiana, the cars are daily arriving and departing with freight and passengers—and these roads are steadily extending. The effect in Louisville is very sensible, and a visit there a few days past presented a very different appearance of business and success, than we ever remember to have seen. The streets and landing were thronged with business men and vehicles. The city has throughout, every appearance of progress. New buildings are erecting in every direction, and appear to be demanded. We saw "To Let," but seldom. The hotels are crowded with guests.—We attribute much of this increasing prosperity arising from the awakening of the citizens of Louisville, to the advantages of internal improvement, and the natural effects resulting from those already done. We look for still greater results to her, when her Indiana roads are more extended, and her Nashville road, to which she has subscribed a million of dollars, is opened. Louisville has built, whilst Cincinnati has been building. We say to Cincinnati merchants and mechanics—Look Out.

New York.

Northern Railroad.—We are gratified to learn says the Albany Evening Journal, that the directors of this company have resolved to put the two first sections of this road (extending to Cohoes) under contract, and that the advertisement for proposals for the work will be made in a few days.

Hartford, Providence and Fishkill Railroad.

The receipts of this road for the five months ending June 1, 1851, show an increase of 33 per cent. over the corresponding period last year. The receipts for the month of June show a gain of about forty-one per cent. over the same month last year. The gain on passengers would have been larger had the arrangements been completed for a connection with the Stonington road by a steamboat between New London and Stonington. This was done last summer, and formed a very pleasant route to Hartford. A new and fine boat has been built for the purpose of this connection, and has commenced running within a few days.—*Providence Journal.*

The Suffolk Bank.

The Boston Traveller of Saturday says:—The country money received at the Suffolk bank counter during the last six months, was 120 millions of dollars, or about \$770,000 per day, viz:—

Month of January, 1851,	\$20,763,000
" February, "	16,084,000
" March "	18,218,000
" April, "	21,400,000
" May, "	23,100,000
" June, "	20,600,000

Total for six months. \$120,165,000

T. Perkins, Esq.

This gentleman, who has been connected with the department of machinery of the Baltimore and Ohio railroad since 1837, and a portion of the time as master of machinery, has resigned his position and become connected with Mr. R. C. Smith of Alexandria, Va. The new firm have already contracted, on favorable terms, to build the greater part of the machinery and equipment for the Orange and Alexandria railroad. We regard Mr. Perkins as the first locomotive builder in this country, and challenge contradiction from any quarter whatever, holding ourselves in readiness to submit the proofs. Mr. Smith has obtained in him an invaluable accession. While we regret his loss to the Baltimore and Ohio railroad company, we know no place where we had rather see him settle than in the old town of Alexandria.—*Cumberland Civilian,*

Orange and Alexandria Railroad.

Our readers will learn with pleasure, that the Orange and Alexandria railroad company, have contracted, on favorable terms, to have the greater part of the machinery and equipment, already ordered for their road, built by Messrs. Smith & Perkins, in this town.

In the well established reputation of the Messrs. Smith, the company have a guaranty for the quality of the materials and workmanship, while the great experience of Mr. Thatcher Perkins, in this branch of business, will secure machinery of the greatest efficiency and economy, combining the latest improvements.

The position of Mr. Perkins as master of machinery, on the Baltimore and Ohio railroad, with which he had been connected since the year 1837, is well known; and his reputation as a builder of locomotives, is second to none in this country. With a locomotive manufactory of the first character, under such auspices, on this part of the Southern frontier, we may anticipate great advantages to the business of this town.

The economical working of the Baltimore and Ohio railroad, has, for some years past, elicited the praise of those best qualified to judge of such matters, and no small share of the credit is due to the able management and judicious improvements, introduced by Mr. Perkins, into his department.—*Alexandria Gazette.*

Notice to Contractors.

Steubenville and Indiana Railroad.

PROPOSALS will be received at the Office of the Steubenville and Indiana railroad company in Steubenville, until the first day of October next, for the Grading and Masonry of the first division of the road extending from Steubenville to the Connotten valley and also for the construction of the entire road between Steubenville and Coshocton; and also distinct proposals for the construction of that portion of the road extending from Coshocton to Newark.

The entire length of this line is about 110 miles, and it contains work of all descriptions, in great variety, some of which is quite heavy.

Proposals will be received for the Grading and Masonry of the first division entire or in sections of about a mile each, the Company reserving the privilege to make such disposition of the whole work, as may appear most conducive to its interests.

Plans, profiles and specifications can be seen at the office of the Company after the 15th of September, and further information may be obtained on application to J. Blickensderfer, jr., Chief Engineer, or to the undersigned,

D. KILGORE, President.

To Contractors.

SEALED proposals will be received until the 31st inst., for the construction of the first two divisions of the Albany Northern railroad (about 94 miles). The maps, profiles, specifications, &c., can be seen at the office of the Engineer, 514 Broadway, Albany.

W. G. BULLIONS,
Chief Engineer.

Virginia Locomotive Car Works.

Wolfe Street and River Potomac, Alexandria, Va.
SMITH & PERKINS, Proprietors.

MANUFACTURE

Locomotive Engines and Tenders.

Marine and Stationary Engines and Boilers.

Chilled Car Wheels and Axles.

Patent Chilled and Wrought Slip-tire.

Machinery and Castings generally.

The undersigned having erected very extensive shops, and procured the most modern machinery and tools, are prepared to execute orders for Locomotive Engines, Cars, and Machinery of all kinds, with despatch, and on the most favorable terms.

R. C. SMITH,

Late of the Alexandria Iron Works.

THATCHER PERKINS,

Late Master of Machinery on the Balt. & O. R.R.

July 22, 1851.

Bridges & Brother, DEALERS IN RAILROAD AND CAR FINDINGS,

64 Courtlandt street, New York.

Having established a general Depot for the sale of articles used in the construction of Railroads, Locomotive Engines and Railroad Cars, we would invite your attention to our establishment. We have already in store a good assortment of CAR FINDINGS and other articles used in the trade, and feel justified in saying, that should you desire anything in our line, we can supply on terms perfectly satisfactory, and in the event of your desiring to order, you may feel assured that your terms will be as good as though you were here to make your own purchases.

Among our goods may be found Railroad Car Wheels, Axles, Jaws and Boxes, Nuts and Washers, Bolts, Brass Seat Hooks and Rivets, Window and Blind Springs, Lifters and Catchers, Door Locks, Knobs and Butts, Ventilators and Rings, Car Lamps, Coach and Wood Screws, Jack and Bed Screws and Babbitt's Metal; also Plushes, Damask, Enameled Head Linings, Cotton Duck for Top Covering in width sufficient without seams, Curled Hair and all other articles appertaining to cars.

Also a new and valuable CAR DOOR LOCK, well adapted to the Sliding Door. This is decidedly the best yet introduced.

LOCOMOTIVE ENGINE LANTERNS, the best article made in the country. Whistles, Gauge and Oil Cocks, Hemp Packing, American, Russian and Italian. We are also agents for Lightner's Patent Journal Box for Car Axles, that invaluable invention, for the economical use and preservation of Car Journals.

Coach VARNISH and Japan of the best quality.

We would also offer our services for the purchase as well as for the sale of goods on commission.—Both members of our firm have had the experience of many years in the manufacture of Railroad Cars, and our Senior was a member of the well known house of DAVENPORT & BRIDGES, Car Manufacturers, Cambridgeport, Mass. With our knowledge of matters pertaining to Railroads, we feel quite confident in giving satisfaction to both buyer and seller, and hope that through assiduity and attention to any business entrusted to our care we shall merit a continuance of confidence and patronage.

BRIDGES & BROTHER.

July 22, 1851.

Lightner's Patent Axle Boxes.

THE Undersigned are Agents for, and offer for sale, Lightner's Patent Axle Boxes, for Railroad Cars and Tenders, which have, by thorough experience, been demonstrated to be one of the most valuable improvements ever introduced in Locomotion. The saving effected in oil alone, will in a few months pay the first cost of these boxes, independent of other advantages. They are now in use upon the following, among other roads, viz:

Boston and Worcester, Boston and Providence, Boston and Fitchburgh, Nashua and Lowell, Providence and Worcester, Northern, N.H., Cheshire, Manchester and Lawrence, Concord, N.H., Concord and Claremont, Ogdensburg, (Northern, N.Y.) Stonington, New London Willimantic and Palmer, New Jersey Central, New Hampshire Central, Worcester and Nashua, Fitchburg and Worcester, Connecticut and Passumpsic, Lowell and Lawrence, Salem and Lowell, Wilton Branch, Newburyport.

Below will be found the certificates of a number of gentlemen, whose opinions will be good authority in every part of the country.

Office Boston and Prov. R. R., }
Boston, Dec. 28, 1849. }

Mr. JOHN LIGHTNER,

Sir,—It affords me pleasure to say, that after two years' trial of your boxes, I am fully and entirely satisfied of their superiority over any other pattern we have used. This superiority consists in economy of oil and freedom from "heating." I have tried every pattern of box in use, of any note, and do not hesitate to say, that you have devised one which in every respect combines greater advantages than any other within my knowledge; these advantages are so manifest, that I am fitting up all

our cars with your boxes, as fast as practicable.

Annexed, is a statement of an experiment with your boxes, the result of which may be of use to your interests.

Ten passenger cars, running 72 wheels, fitted up with Lightner's boxes used 414 pints of Patent Oil, at 50 cts. per gallon, ran 43,099 miles, equal to 5-16 pints per wheel for 43,099 miles. Speed, 30 to 40 miles per hour.

Very respectfully yours,

W. RAYMOND LEE, Supt.

I have examined the above statement of Mr. Lee, and fully concur with him in his opinion of the superiority of Lightner's box.

GEORGE S. GRIGGS,

Supt. Machine Shop B. & P. R. R.

Boston, July 26, 1849.

This is to certify that J. Lightner's axle boxes for railroad cars and locomotive tenders, have been in use on the Boston and Worcester railroad one year, and I unhesitatingly pronounce it, in my opinion, the best and most economical one in use, requiring less oil, of easy application, not susceptible of derangement, as in most kinds in use. When requiring repairs or renewal, the same may be done in one-fourth of the time usually occupied for that purpose. The box requires oiling not oftener than once a month—is kept quite free from dust, and consequently wears much longer than those generally in use.

D. N. PICKERING,

Supt. Motive Power, B. & W. R. R.

Office of Boston Locomotive Works, }

December 12th, 1849. }

The Boston Locomotive Company have been using J. Lightner's patent axle boxes under the tenders of their engines for several months, and find them more highly spoken of by the railroad companies that have used them in regard to economy in the use of oil, their durability and their ease of adjustment, than any other boxes which they have used: We therefore do not hesitate to recommend them to all railroad companies.

DANIEL F. CHILD,

Treas. Boston Locomotive Works.

Taunton Locomotive Works, }

Taunton, July 7, 1849. }

Mr. H. F. ALEXANDER,

Dear Sir,—Your favor of yesterday came to hand in which you ask what success we have met with, in using Mr. Lightner's patent box for cars, engines, &c.

We have put it in use on the Boston and Providence railroad, New Bedford and Taunton Branch railroad, Central railroad, N. J., Norfolk County, Rutland and Burlington, and as yet we have not had one complaint from them; and from what we have used of it, and witnessed, we do not hesitate to say that it is superior to anything in use for that purpose. It is simple in its construction, and easy of access, and the reservoir is held close to the shaft, and the oil and journal is perfectly secure from dust; they will run from four to six weeks without replenishing the oil. The brass in the box is changed very much easier than by any other plan that we have seen.

Very resp. yours,

W. W. FAIRBANKS, Agent.

Office Providence & Worcester R. R. Co., }

Providence, Dec. 17th, 1850. }

H. F. ALEXANDER, Esq.,

Sir,—The "Lightner patent boxes" for cars and locomotives have been in use under a portion of the passenger cars and engines of this company for upwards of two years, and have given very great satisfaction.

Though combining many excellent qualities, their great superiority consists in the economy of oil.

The result of experiments upon this road shows the consumption of oil by the use of this box, to be not more than one sixth part the quantity consumed by the use of the common box.

With the common box, eight passenger cars, 64 wheels, running 90 miles per day, consumed in 12 months 520 gallons of oil, being an average of 8½ gallon per wheel per annum.

With the Lightner box the same cars running the same number of miles per day, during the same space of time consumed 73½ gallons of oil, being an average of 1½ gallon per wheel per annum.

So manifest are its advantages over any other box used by this company, it is intended to place it under all our cars as soon as practicable.

Besides the saving of oil, as they afford complete security from dust, we think them more durable than any other box in use.

Another advantage resulting from the use of this box is, cars run more easier than with the common box. The saving in fuel which it would effect, would of itself, we think be a sufficient inducement to use this box in preference to any other known to us.

Very respectfully,

ISAAC H. SOUTHWICK, Supt.

JOHN B. WINSLOW,

Supt. Machine Shop, P. & W. R. R.

Cambridgeport, April 5th, 1851.

H. F. ALEXANDER, Esq.

Sir,—This may certify that I have been engaged in the manufacture of railway cars since 1834, and have built for the different railroad companies cars of all descriptions to the amount of three millions of dollars, and have used on the above cars all kinds of journal boxes, and find that none give better satisfaction than the "Lightner patent box," both on account of the saving of oil and the arrangement for taking out and re-placing the composition by means of the sliding key, and other conveniences which no other box possesses.

Yours respectfully,

CHARLES DAVENPORT.

Worcester, March 17th, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—This is to certify that I have been for some years past engaged in building cars, and that I have tried most, if not all of the patent boxes, and have found Lightner's patent superior to all others as far as the saving of oil is concerned, also the ease with which they are fitted and exchanged in case they get out of order.

For the last three years, I have put them under all of the cars I have built, and in every instance they have given the most entire satisfaction.

Yours truly,

OSGOOD BRADLEY.

Office Union Works, So. Boston, }

May 23d, 1851. }

This certifies that I have applied Mr. J. Lightner's patent axle boxes to my locomotives and tenders for the past two years. I consider them superior to all others,—economical in their use, and possessing many important advantages not found in any other boxes.

SETH WILMARTH.

Office 15, R. R. Exchange, Boston, }

June 1, 1851. }

This is to certify, that we have known the success of Lightner's patent journal boxes upon various roads in New England the past three years, and have been led to examine their peculiar construction.—We are well satisfied of their merits, and have adopted them upon our small gravel cars, and take pleasure, as we ever have done, in recommending their use upon all roads where we are employed in the construction.

GILMORE & CARPENTER,

Contractors.

Amoskeag Manufacturing Co. Machine Shop, }

Manchester, May 31, 1851. }

H. F. ALEXANDER, Esq.

Dear Sir,—We are using the Lightner box on all the engines and tenders we build, and we are satisfied that it is the best box in use, and recommend the same to all those who purchase engines at our works.

Yours respectfully,

O. W. BAYLEY, Agt.

This is to certify that the Fitchburg railroad company having become satisfied of the superiority of J. Lightner's patent Axle Boxes for Railway Cars and Locomotive Tenders adopted the same,

and are bringing them into general use upon their road.

One year's experience with the above improvement, has fully convinced me that there has never been anything offered to the public for that purpose which possess such intrinsic value; in fact, this is an improvement which seems to overcome all the difficulties found in all the various kinds now in use. It possesses very many advantages over all others: Some of which are [first] the first cost is much less than that of most boxes in use. [Secondly] 75 per cent is saved in oil; one gill applied to each Journal once a month, or one quart to an eight wheel car, is all these boxes require per month [Thirdly] no dust can gain access to the Journal, which is constantly lubricated with clean oil; hence the saving in repairs of Journals and composition bearings, is a matter of importance. [Fourthly] its construction is truly simple—not complicated, having nothing liable to become loose by constant and severe service. [Fifthly] for convenience there is nothing which approaches this improvement.—The composition bearings may be removed from the Journals of an eight wheel car, by one man, and returned, or duplicates, in twenty minutes, while under the car: the same would require two men, at least half a day with other boxes in use.—The trucks and wheels using these boxes, are free from oil and dirt, usually seen upon all railroad cars, at great expense to the corporation.

NATH'L JACKSON.

Supt. Car Building and Repairs, F.R.R. Co.

Boston, March 9, 1849.

I hereby certify, that I have examined a box for Car Journals, invented by Mr. Lightner of Roxbury, Mass, and I have thought so well of it that I have adopted it on our railroad, I have known of its success on other roads.

S. M. FELTON,

Supt. F. R. R.

Office of the Central R. R., N. J., }
Elizabethtown, May 1849. }

H. F. ALEXANDER, Esq.,

Dear Sir:—Your favor, [wishing to be informed how we liked Lightner's patent axle boxes for R.R. Journals,] has been duly received; in answer we would say, we have used the boxes on Locomotive tenders one year, more or less, and on our cars some six months. I consider them the best boxes in every respect, I have ever used, or even seen used on any other roads—for safety, durability and the economy pertaining to all the details connected with the boxes and Journals of R. R. Car wheels; and we shall adopt them upon this road.

Yours Respectfully,

JOHN O. STEARNS.

Supt. Central Railroad Co., N. J.

Manchester, N. H., Nov. }
1st, 1850. }

H. F. Alexander, Sir,

I have used "Lightner's Boxes" under all the Cars of the Manchester and Lawrence railroad, and feel no hesitation in saying that I think them to be the best boxes now in use.

Yours, &c.,

THEODORE ATKINSON, Agent.

Cheshire R. R. Office, Keene, }
March 5th, 1851. }

Mr. H. F. Alexander,

Sir,—Lightner's Patent Boxes have been used on the Cheshire R. R. about a year, and have given the highest degree of satisfaction.

All the Passenger Cars now in use, and a considerable number of Merchandise Cars are furnished with them, and they will take the place of the Common Boxes on all the cars as fast as circumstances will permit.

Very Resp't.

L. TILTON,

Supt. Cheshire R. R.

Boston and Worcester Railroad, }
Boston, April 1st, 1851. }

H. F. Alexander, Esq.,

Dear Sir,—Lightner's Patent oil saving box for railroad cars, has been adopted by this corporation; we are taking out the common and substituting the

Lightner's at the rate of fifty boxes per month; it will soon take the place of all others, as it is decidedly preferable to any heretofore used by this corporation.

G. TWITCHELL, Supt.

Statement of amount of oil used on 32 8-wheel freight cars, on the Boston and Providence Railroad (with Lightner's Boxes) from March 10, 1849, to February 27, 1851, and upon 12 8-wheeled passenger cars from September 8, 1849, to February 27, 1851.

FREIGHT CARS.

Amount Oil.	No. months.	Amount Oil.	No. months.
1.—21 pts.	10	17.—23½ pts.	14
2.—19 " "	6	18.—23½ " "	11
3.—25 " "	13	19.—36 " "	21
4.—18 " "	7	20.—22 " "	10
5.—22 " "	12	21.—38½ " "	24
6.—24 " "	13	22.—29 " "	23
7.—20 " "	11	23.—35½ " "	23
8.—21 " "	11	24.—37½ " "	23
9.—23½ " "	10	25.—51 " "	23
10.—21 " "	9	26.—31½ " "	24
11.—20 " "	9	27.—28½ " "	23
12.—21½ " "	11	28.—36 " "	23
13.—19 " "	8	29.—50½ " "	24
14.—25½ " "	17	30.—50 " "	23
15.—20½ " "	10	31.—41 " "	23
16.—31 " "	18	32.—39½ " "	23

Total, 925½ pts. 510

PASSENGER CARS.

1.—19½ pts.	18	7.—30 pts.	18
2.—25½ " "	18	8.—25½ " "	18
3.—33½ " "	16	9.—29 " "	18
4.—19 " "	15	10.—46½ " "	17
5.—15 " "	15	11.—9 " "	9
6.—22 " "	18	12.—65½ " "	17

Total, 340 pts. 197

Averaging 1 4-5 pints of oil for freight, and 1 7-10 for passenger cars per month only!

All orders and enquiries promptly attended to.

BRIDGES & BROTHER,

No. 64 Courtlandt st., New York.

July 25, 1851.

To Boiler Makers, Engineers, etc., etc.

PATENT LAP-WELDED IRON TUBES,

Manufactured by the

BIRMINGHAM PATENT IRON TUBE CO.

UNDER

PROSSER'S PATENT,

from one and a quarter to eight inches in diameter.

These tubes are well known for their superiority over all other descriptions for Locomotive, Marine and other Steam Engine purposes, for which they are used very extensively in Great Britain and on the Continent of Europe.

For sale in quantities to suit purchasers, by

WILLIAM BIRD & CO.,

44 Wall st., New York.

July 26, 1851.

To Railroad Companies.

THE undersigned has discovered and patented an imperishable, cheap, and sufficiently elastic substance, to be introduced between the sill and rail, so that the stone sill can be used in place of the wooden sill: entirely overcoming that rigidity where the rail is laid directly on stone. Address

J. B. GRAY, Philadelphia.

July 10, 1851.

To Contractors.

Peru and Indianapolis Railroad.

PROPOSALS will be received at the office of the Peru and Indianapolis Railroad, in Noblesville, until the evening of the 13th of August next, for the Grading of the line of the above road from Noblesville to Peru, a distance of fifty miles. Also the masonry for Bridges over the Wabash, Big Pipe and White Rivers.

The proposals are to be addressed to W. J. HOLMAN, Esq., Chief Engineer, at the Company's Office, where plans and specifications of the work may be seen. Payments will be made monthly in cash, reserving 15 per cent. till the contracts are completed.

Indianapolis, July 12, 1851.

European and North American Railway.

THE undersigned, the three persons first named in the first section of an act passed by the Legislature of Maine, and approved the twentieth day of August last past, entitled "An Act to incorporate the European and North American Railway Company," and being specially authorised therefor in and by said act, hereby give public notice that, for the purpose of receiving subscriptions to the stock of said company, as established by the act aforesaid, according to the provisions thereof, not exceeding forty thousand shares, books of subscription will be opened under the direction of the undersigned, according to the regulations prescribed, at the time and places following, viz:—On Wednesday, the Twentieth day of August next,

At Calais, Maine, with Noah Smith, Jr., Esq.

Eastport, do. " Col. Bion Bradbury.

Machias, do. " Walker & O'Brien.

Ellsworth, do. " Seth Tisdale, Esq.

Oldtown, do. " Geo. P. Sewall, Esq.

Bangor, do. " Geo. W. Pickering, Esq.

Orono, do. " Hon. Israel Washburn, Jr.

Waterville, do. " Hon. Timothy Boutelle.

Brunswick, do. " Prof. William Smyth.

Augusta, do. " B. A. G. Fuller, Esq.

Belfast, do. " John Y. McClintock, Esq.

Portland, do. " John B. Brown, Esq.

Portsmouth, N.H. " Hon. I. Goodwin.

Salem, Mass. " Stephen A. Chase, Esq.

Boston, do. " Francis Skinner & Co.

Lowell, do. " John Wright, Esq.

Worcester, do. " Charles Washburn, Esq.

Providence, R.I., " Billings Brastow, Esq.

Hartford, Conn., " Hon. C. F. Pond.

New Haven, do. " Allen Prescott, Esq.

New York, N.Y., " R. & G. L. Schuyler, No.

2 Hanover street.

Albany, do. " John V. L. Pruyn, Esq.

Troy, do. " Hon. John D. Willard.

Philadelphia, Pa. " Hon. Wm. C. Patterson.

Montreal, Canada, " Hon. John Young.

Quebec, do. " J. B. Forsyth, Esq.

Said books will remain open for ten successive days at the places and with the persons aforesaid. Dated at Portland, this sixteenth day of June, A. D. 1851.

ELIJAH L. HAMLIN,
ANSON G. CHANDLER,
JOHN A. POOR.

Trautwine on R. R. Curves.

By JOHN C. TRAUTWINE, Civil Engineer,
Philadelphia, Pa.

IN press, and will be published in a few days; accompanied by a Table of Natural Sines and Tangents to single minutes, by means of which all the necessary calculations may be performed in the field.

This little volume is intended as a field-book for assistants; and will be found extremely useful, as it contains full instructions, (with wood cuts) for laying out, and adjusting curves; with Tables of Angles, Ordinates, etc., for Curves varying from 13 miles, down to 146 feet Radius.

A portable Table of Natural Sines and Tangents to minutes, has for a long time been a desideratum among Engineers, independently of its use in laying out curves.

The volume is neatly got up in duodecimo; and handsomely bound in pocket-book form.

Sold by Wm. Hamilton, Actuary of the Franklin Institute, Philadelphia. Price \$1.

Also in press, and will be issued in a few weeks, "Trautwine's Method of Calculating Excavation and Embankment."

By this method, which is entirely new, (being now made known for the first time) the cubic contents are ascertained with great ease, and rapidly, by means of diagrams, and tables of level cuttings. Thin octavo; neatly half bound, \$1. For sale by Wm. Hamilton.

June 23, 1851.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

TO CONTRACTORS.

Engineer's Office, S. S. R. Road Co. }
Petersburg, Va., May 27, 1851.

PROPOSALS will be received at the Engineer's Office, South Side Railroad, at Petersburg, Va., until the 31st of July next, for the construction of Appomattox Bridge, to be erected near Farmville.

The Bridge will be about 3000 feet long and 80 feet high; to consist of a wooden superstructure resting on abutments and piers.

The piers will be of brick or stone, to be determined after receiving the proposals.

Good brick earth can be obtained near the site of the Bridge.

The proposals may be made for the structure complete, or for the various items of work and materials, viz.: Masonry, furnishing Bricks or Timber; workmanship of laying Bricks and workmanship of superstructure.

Security will be required for the fulfilments of the contracts, and it will be necessary that each proposal be accompanied with a letter from a responsible person or persons, stating that they will become security.

C. O. SANFORD,
Ch. Engineer, S. Side R. Road.

Notice to Contractors.

Engineers Office, E. T. & V. R. R. Company, }
Greenville, E. T., June 5th, 1851.

PROPOSALS will be received until the 1st day of October next, for the Grading and Masonry of that part of the E. T. & V. Railroad between the Eastern terminus of said road at King's Meadow, and Rheatown, in Greene County, a distance of about forty-seven miles. A large amount of very heavy work, both in Grading as well as Masonry, will be found on this division, offering strong inducements to able Contractors.

Maps, Profiles, and Specifications can be seen at this Office, on and after the 20th of July next.

The Company reserve the right to reject all, or any proposals that they deem unsatisfactory.

Proposals should be directed to the Treasurer and Secretary of the E. T. & V. Railroad Company, Jonesborough, E. T.

LLOYD TILGHMAN,
Chief Engineer.

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COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.

August, 16, 1849.

6m33

Railroad Iron.

THE Subscribers, Agents for the Manufacturers, are prepared to contract for the delivery of Railroad iron at any port in the United States or Canada, or at a shipping port in Wales.

WAINWRIGHT & TAPPAN,
29 Central Wharf.

Boston, June 1, 1851.

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40 Best Flange Bars 5 1/2 x 2 inches, 11 feet long.
40 " " 5 1/2 x 2 " 7 feet 8 in. long.
40 " Flat " 6 x 2 " 11 feet long.
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Now in store and for sale by

RAYMOND & FULLERTON,
45 Cliff street.

**To Railroad Companies,
Machinists, Car Man-
ufacturers, etc., etc.**

CHARLES T. GILBERT,
NO. 80 BROAD ST., NEW YORK,

IS prepared to contract for furnishing at manufacturer's prices—

Railroad iron,
Locomotive Engines,
Passenger and Freight Cars,
Car Wheels and Axles,
Chairs and Spikes.

Orders are invited; and all inquiries in relation to any of the above articles will receive immediate attention.

THE Fourth Annual Exhibition of AMERICAN MANUFACTURES, by the MARYLAND INSTITUTE for the Promotion of the Mechanic Arts, will be opened in Baltimore on the 20th October, 1851.

The Exhibition will be held in the SPLENDID NEW HALL of the Institute, (fronting on Baltimore street) now being rapidly completed. Their edifice is centrally situated, chaste in its architecture, solid in its construction, and is by far the largest and most complete building in the United States, devoted to the Mechanic Arts. It may be added that this building is 355 feet long by 60 in breadth, with an average height of 68 feet, containing some twelve apartments, the largest of which is 255 feet by 60, and that the cost will be over \$70,000.

To this Exhibition, the Managers ask the attention of all engaged in industrial pursuits throughout the country, and cordially invite them to contribute specimens of their best productions for public inspection, and to compete for the prizes offered by the Institute. These prizes consist of GOLD and SILVER MEDALS, DIPLOMAS, etc., which were last year distributed as follows:—Gold Medals, 16; Silver ditto, 90; Diplomas, 60; besides 85 articles of Jewelry, etc., to ladies. Fair play will be scrupulously observed towards all, and every facility of Steam power, shafting, fixture, labor, &c., &c., will be amply provided free of expense. The machinery will be under a special superintendent, and a fine display of it is looked for. The last exhibition of the Institute was visited by more than 40,000 persons, and with their vastly improved accommodations and alterations, this number will be doubled at the coming display, embracing many Virginians, Pennsylvanians, and other strangers from the South and West.

Joshua Vansant, President.

Ed. Needles, } Vice Presidents.

F. A. Fisher, }

Samuel Sands, Rec. Sec'y.

Wm. Prescott Smith, Cor. Sec.

F. J. Clare, Treasurer.

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(The last nine in *Italics* are the Committee on Exhibition.)

The Hall will be opened for the reception of goods on **MONDAY, 13th October**; on the next Monday, 20th, at 7 P. M., the Exhibition will be formally opened to the public, and will positively close on Wednesday, 19th November. Articles for competition must be in the Hall by **Thursday night, Oct. 16**, unless delayed in shipment after starting in ample time.

Those who intend depositing, will give the Committee or the Agent, notice as early as possible, stating the nature of the goods, and probable amount of room required, to exhibit them to advantage.

Circulars, containing a view of the new Hall and the full regulations of the Committee, with special information, if required, may be had promptly, by addressing the undersigned, or the Institute's Agent, J. S. Selby, Baltimore, post-paid.

ADAM DENMEAD,

Chairman Com. on Exhibition for 1851.

SUPERIOR BLACK WRITING & COPYING INK.**Jones' Empire Ink.**

87 Nassau st., Sun Building, New York city.
Net prices to the trade—
Quarts, per dozen, \$1 50 6 oz. per dozen, \$0 50
Pints, " 1 00 4 " " 0 37 1/2
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On draught per Gallon, 20 cents.

This is the best Ink manufactured. It flows freely, is a good copying ink, and will not mould, corrode, precipitate or decay. Orders for export, or home consumption, carefully and promptly attended to by

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To Railroad Companies, etc.

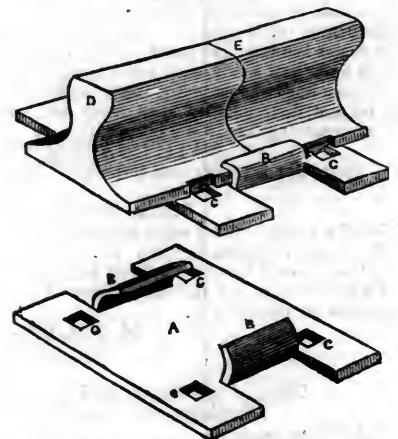
The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

I also invite attention to an Improved PATENT SPRING LOCK, for SLIDING Doors to Freight and Baggage Cars, now in use upon the Pennsylvania Central, Greenville and Columbia, S.C., Reading, Pa., and other Railroads.

Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH,
46 South 8th St. Philadelphia.

May 9, 1851.

The American Railroad Chair Manufacturing Co.

ARE prepared to make WROUGHT IRON RAIL ROAD CHAIRS, of various sizes, at short notice.

By use of the WROUGHT IRON CHAIR, the necessity of the wedge is entirely done away—the lips of the chair being set, by means of a sledge or hammer, close and firmly to the flange of the rail.

The less thickness of metal necessary in the Wrought Iron Chair gives much greater power and force to the spikes when driven—and consequently a much less liability to the spreading of the rails by reason of the spikes drawing or becoming bent.

The less weight necessary in the Wrought Iron Chair, will enable us to furnish them at a cost much below that of CAST IRON CHAIRS.

DESCRIPTION OF THE ABOVE CUTS.

Figure 1 is a perspective view of the rail secured in the chair, and fig. 2 is a perspective view of the chair itself. D, E, are sections of two rails placed together, and secured at the joint on the chair by the jaws B, B. The chair is bolted down by spikes C, C. In fig. 2, the chair is represented as made of a single block or plate A of wrought iron.

The chair is set in its proper place on the track, spiked down, and the ends of the two rails brought together within the jaws as represented in fig. 1.

For further information address,

N. C. TROWERIDGE, Secretary,
Poughkeepsie, N. Y.

June 1, 1851.

Railroad Commission Agency.

THE Subscriber offers his services to Railroad Co's and Car Makers for the purchase of equipment and furniture of roads and depots and all articles and materials required in the construction of cars, with cash or approved credit. No effort will be spared to select the best articles at the lowest market price.

He is sole Agent for the manufacture of the ENAMELED CAR LININGS, now in universal use. The best Artists are employed in designing new styles, and he will make to order pieces with appropriate designs for every part of the car, in all colors, or with silver grounds and bronzed or velvet figures.

He is also Agent for Page's Car Window Sash Fasteners, which is preferred by all who have used it to any other.

CHARLES STODDER,
75 Kilby st., Boston.

June 20, 1851.

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AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 136 NASSAU ST., NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.
SECOND QUARTO SERIES, VOL. VII., No. 31! SATURDAY, AUGUST 2, 1851. [WHOLE No. 798, VOL. XXIV.]

ASSISTANT EDITORS,
J. T. HODGE, *For Mining and Metallurgy.*
GEN. CHAS. T. JAMES, *For Manufactures and the
Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & Co., 136 NASSAU ST.

Saturday, August 2, 1851.

European and North American Railroad.

A convention of the friends of this project was held in Portland, Maine, on the 22d ult., which was very largely attended by the leading men of that state. General Samuel Fessenden presided, and made an exceedingly happy and effective speech. The executive committee of the corporators, through their Chairman, John A. Poor, Esq., submitted a report embracing a statement of the progress and the present condition of the enterprise. Mr. Poor—after alluding to the convention on the 2d of August last, as the first social re-union that had ever taken place between the people of sister States and Provinces, after seventy years of separation, when the descendants of a common race, the Anglo-Saxon brothers, after this long period of partial estrangement, and continued political separation, having outgrown and forgotten the differences of their fathers, came together upon the broad platform of a common ancestry, and a common sympathy, to lay the foundation of an enterprise of a deep but a common interest to them all—went on to say that—

It was proposed to extend a line of railway, which should connect colonies and states, and which would bring in its train, freedom of intercourse, and the common alliances of social and commercial fellowship and fraternity. Eschewing all political purposes it looked forward to an inevitable reciprocity between the British provinces and the United States. The railway is not an end; but a means; a means of social and commercial advancement—an instrumentality, by which great interests were to be subserved—by which the raw materials and the rich products of one portion of the country may be exchanged with those of another. We want the coal, the iron, the plaster and the grindstones of Nova Scotia and New Brunswick, and they in turn want the sugars, the farming utensils, the hats, shoes, and the other manufactures of New England. We want a railway across the breadth of our own state, to bring all our people in easy communication with each other. More than all this, we want to open out a line of railway toward the nearest available point of this continent to Europe, in order to save expense in sending forth or in procuring our supplies from Europe. Instead of seeing all the trade between this country and Europe passing almost in sight of our own coast, and going down on the great sailing circle, some five hundred miles past us, to New York; and from thence re-shipped back to us, we want the trade across the Atlantic, and the travel across the Atlantic, reduced to its lowest cost, and to the shortest distance of time, to bring the producer and consumer of both continents in closer proximity.

The plan agreed upon at the Portland convention, he believed, was the only one that could legitimately or profitably be carried out. The idea was, to carry out this work in separate sections, by different communities, all working in subordination to one general plan, so that a continuous line of railway, under private management, should eventually extend from the cities of Bangor, of Boston and New York, to the eastern shore of Nova Scotia, upon the Atlantic ocean.

The beauty of this plan was its simplicity, its coincidence with the natural laws of trade; its adaptation to the wants of the people of Maine, New Brunswick and Nova Scotia. The idea was purely commercial. Railways for military or political purposes were neither in accordance with the spirit of the age, or of the spirit of railway progress. They have never been successful, and they never will be. Railways require, in order to be successful, the application of private selfishness, individual thrift and energy in their management.

It was with a spirit like this, and with opinions like these, that the resolutions of the Portland convention were adopted. In accordance with these views, have been the proceedings of the committee. In Maine, our application for a charter was promptly responded to by the Legislature, and the necessary survey at once undertaken at the expense of the state.

In New Brunswick similar measures were adopted, and everything done that the most ardent friends of a railway could desire. So that from the city of Portland east to the boundary of Nova Scotia, the way has been prepared for the carrying out of this great work, as far, and as fast as private enterprise shall supply the means. It is questionable in my own mind, whether any resort to public credit, is either necessary or desirable. New Brunswick, however, tendered further assistance, to the amount of \$1,250,000 by subscriptions to the stock, and a free gift of all the ungranted crown lands lying within five miles, on each side the line. Had Nova Scotia adopted a similar policy, the road may be looked upon as secured. Had the Nova Scotians gone home, and gone to work as the people of New Brunswick did, the history of the enterprise would have been a continued series of successes and of triumphs.

Unfortunately for this scheme, in Nova Scotia, political matters are paramount to all others.—Among the men who had given the readiest support to the plan for calling the Portland convention, was the Hon. Joseph Howe, well known as a political leader in Nova Scotia. Mr. Howe expected to have been present, or rather agreed to have been present, at the Portland convention, but was prevented by official engagements. His intimate political friend, Hon. Mr. Uniacke, the Attorney General of Nova Scotia, took an active and influential part in its proceedings, and was appointed one of the executive committee for Nova Scotia.

The ministerial party in Nova Scotia were thereby regarded as fully committed to the plan of the Portland convention. On the return of the delegation to Halifax, the Hon. Mr. Howe seeing the enthusiasm for the railway which had been kindled among the delegation, and anxious to share the honor of taking a leading part in its management, introduced into the public meeting called to receive the report of the delegation, a resolution of the most extravagant character, proposing to have the railway undertaken as a government measure, by the colony, and built at the expense of the government.

This one important step has given a new turn to political affairs in British North America, if not seriously retarded the progress of the Lower Provinces.

Having become committed to the plan of a government railway, Mr. Howe felt the difficulty of carrying it out; or of securing a majority of the house of assembly of the provinces without the co-operation of the home government, and he goes out to England to build Nova Scotia's part of the line of our road.

Recollect, that at this time the Quebec and Halifax line had been abandoned. The plan of the Quebec and Halifax railroad was started in 1845, as a rival project to head off the Atlantic and St. Lawrence railroad. The provinces of Canada, New Brunswick, and Nova Scotia united in an applica-

tion for a survey, to the home government, which survey was ordered—commenced in 1845 or 1846, and finished in 1849.

The report of Mr. Robinson's survey was referred to the railway commissioners, and their report condemned the scheme as entirely destitute of commercial advantages—and they stated that the *Portland and Montreal* railroad had such decided advantages as to preclude all hope of competition with it, for the trade of the *St. Lawrence valley*, by the *Quebec and Halifax* line. Canada, Nova Scotia and New Brunswick, however, united in offering to the Imperial government a grant of land on each side the line, and an annual payment of £20,000 sterling each, or £60,000 sterling in all towards paying the interest on the cost, if the Imperial government should undertake to build it, for its own uses and purposes.

The Imperial government by their dispatches of April 5, 1849, and June 19, 1850, refused to undertake the work upon the pledges previously given, and, in all the language of the resolutions of the legislature of New Brunswick, of April 5, 1850, these refusals "induced the people of this province to turn their attention to the accomplishment of undertakings, which it would be in their power to carry out, and which from their prospect of more immediate remuneration would hold out greater inducements to capitalists to embark therein."

They accordingly entered into engagements to build the European and North American railway, and the *St. Andrews and Woodstock* road.

At the time of the separation of the *Portland* convention, the plan of the *Halifax and Quebec* road had been practically abandoned in all the provinces. Quebec had turned her attention toward building a line to *Melbourne*, connecting herself with *Montreal* on the one hand, and with the *Atlantic* ocean and the lower provinces on the other.

Mr. Howe went to England as the delegate from Nova Scotia to advocate the European and North American railway. His first communication on the subject does ample justice to the claims of our enterprise.

The British government will decline to embark in the scheme. Mr. Howe turned his attention from the government, to the people of England. He delivered lectures on emigration and colonization in Southampton and elsewhere, and joined hands with the tory leaders, to help to stir up the Irish members, to join in opposition to the Russell ministry.

During the period when Lord Stanley was attempting to construct a tory Cabinet, Mr. Howe secured assurances favorable to the *Halifax and Quebec* line from the tory leader, and he gave up the European and North American railway to become the advocate of the imperial railway!

Lord Stanley, the great tory leader, in the month of February last, came out in an elaborate speech in the house of lords, in advocacy of the *Halifax and Quebec* line on the grounds of colonization and colonial empire. He was supported in this by the late whig Chancellor of the Exchequer, *Spring Rice*, now Lord Montagu.

On the return of the Russell ministry to place again, Mr. Howe succeeded in appealing the fears of the ministry, and instead of carrying out the enlarged, liberal and philanthropic spirit which characterized his countrymen in the *Portland* Convention, he appealed to the ancient prejudices of England against the United States and revived the bloody scenes of our former wars. He was supported in this by the tory party in England, and the peaceful, international and philanthropic spirit of the convention, was changed by the interpretations of Mr. Howe into one of propagandism, by which the integrity of the empire was threatened.

In this spirit the old cast off plan of the *Halifax and Quebec* line was revived, and the British ministry directed Earl Grey, to direct Mr. Under Secretary Hawes, to say to Mr. Howe that the British ministry would recommend to Parliament that the money required should be advanced from the imperial treasury to build a line of railway "passing wholly through British territory from *Halifax* to *Quebec* or *Montreal*. Any deviation from the line recommended by Major Robinson and Captain Henderson, must, however, be subject to the approval of her Majesty's government."

"It will further be required that the several pro-

vincial Legislatures should pass laws making the loans which they are to raise a first charge upon the provincial revenue, after any existing debts and payments on account of the civil lists settled on her Majesty by laws now in force; and also that permanent taxes shall be imposed (or taxes to continue in force till the debt shall be extinguished) sufficient to provide for the payment of the interest and sinking fund of the loans proposed to be raised at discharging the above prior claims. It will further be necessary that the expenditure of the money raised under the guarantee of the imperial parliament shall take place under the superintendence of commissioners appointed by her Majesty's government, and armed with sufficient power to secure the application of the funds so raised to their intended object. The commissioners so appointed are not however to interfere with the arrangements of the Provincial governments except for the above purpose."

"The right of sending troops, stores, and mails along the line at reasonable rates, must likewise be secured."

"It is also to be understood that government will by no means object to its forming part of the plan which may be determined upon, that it should include a provision for establishing a communication between the projected railway and railways of the United States."

"It is under this last clause that Mr. Howe claims to have secured the money to build the European and North American railroad. And here is the turning point of the whole question. Mr. Hawes says the government will "by no means object to its forming part of the plan which may be agreed on," &c.

The whole is a matter of contingency. It may or may not be agreed upon, and it may or may not be the purpose of the British ministry to manage the building of the European and North American railway. If in their wisdom they choose to discontinue the work, they can easily find words to excuse themselves from any supposed pledge which the peculiar phraseology of man may seem to convey."

At the recent convention held at *Toronto*, the instructions to Lord Elgin under Earl Grey's note of March 14, it now appears that the European and North American railway formed no portion of the scheme there discussed. Mr. Howe found Canada generally indifferent, if not unfriendly to the *Quebec and Halifax* line, considered as a road between the two cities only. The Canadians demanded on a condition of their acceptance, the application of all the money to the extension of a trunk line from *Halifax* towards *Toronto*. The seven millions sterling proposed by Mr. Howe, they require to be all laid out in one line, extending it as far as possible toward *Toronto* from *Halifax*. The Hon. Mr. Howe, in his speech at *Montreal*, two weeks ago, told the *Montrealers* that he had secured the money "to build the great trunk line all the way from *Halifax* to *Montreal*."

The Hon. Mr. Hincks, on the 12th of July, introduces into the Assembly of Canada, his eighteen Resolutions, claiming the Imperial guarantee or an advance from the Imperial Treasury of money enough to build from *Halifax* to *Hamilton*, twelve hundred miles, and it is insisted that on these terms only, will Canada come into the scheme.

One thing is quite certain, if Mr. Howe is to build the Imperial railway all the way to *Montreal* as he told the *Montrealers* in his recent speech, there will be nothing left for New Brunswick toward building the European and North American railroad. They may rely upon that.

Under this state of things our friends in New Brunswick are anxiously awaiting our movements. They ask nothing of the British Government, but the privilege of building railways for themselves in their own way. They have not shirked the labor, like the Howe Ministry in Nova Scotia.—They have gone to work in the right way by helping themselves. They granted a noble charter.—This is reluctantly assented to. They passed *Facility Bills* in aid of the road. These bills are withheld by Earl Grey until the charter shall be amended, providing especially for the transportation of *Her Majesty's troops* and for securing Imperial control over such portion of the route as may be wanted in the *Halifax and Quebec* line.

The course of the British Government in reference to the European and North American railway has caused a feeling of general discontent in the Lower Provinces. The Provinces desired a line of railway connecting them with the railways in the United States. New Brunswick made no claims for Imperial assistance, and yet the British Ministry attempt to force upon her a line she does not want. True she is not directly required to pledge all her revenues to maintain this grand Imperial Military line, by the way of *Restigouche* and *Lake Metis*. But her integrity is questioned if she demurs to this imperial suggestion. In 1849 the Railway Commissioners, in answer to Earl Grey's inquiries, pronounce the *Halifax and Quebec* railway impracticable for all commercial purposes and valuable only as a military work to secure the more easy maintenance of British power in the territory; and yet Earl Grey in March, 1851, gravely calls on the Governor General to require "that a deputation from the Executive Councils of the two Lower Provinces should proceed to the seat of Government in Canada, in order to confer with your Lordship and with your Council for the purpose of coming to some agreement upon the subject, which, after being approved by the Legislatures of the several Provinces, might be submitted for the sanction of Parliament."

How could Earl Grey, or the British Ministry, consistently, by implication even, form the plan of embarking many in this undertaking, which in 1849 was deemed so utterly unworthy of confidence, and which every man in British North America knows cannot for many years, at least, pay its running expenses? Still I derived the impression from a conversation with Lord Elgin a few days ago, that he regarded the British Government as sincerely desirous of seeing Earl Grey's scheme adopted and carried into effect.

This plan is favored as a means of retaining the North American Colonies, and the great question among English Statesmen now is, *shall Great Britain retain her Colonies?*

The last number of the *Edinburgh Review*, contains an interesting article on this subject, and may be regarded as expressing the present feeling of the Whig Ministry on this question.

That she may long retain the British American Colonies, I sincerely desire. If she will only give them responsible government, or the right of self government, her people can enjoy an amount of political freedom, with entire relief from taxation, beyond what are known to any other people. Still they must and will have free trade with us. Shut out from the markets of Europe by their geographical position, they require to trade with the United States. This we are disposed to give to the fullest extent, on terms of entire reciprocity.

Their natural products are wanted by us, and she in return can more easily and cheaply buy of us, whatever she requires from abroad, than from any other people. It is this feeling that brought the *Portland* convention together. It is this feeling that now controls the public feeling of New Brunswick. It is this feeling that led the Legislature of New Brunswick to say with an unanimity unparalleled in her Legislature, by the Resolutions of April 5, 1851, that "she cannot adopt the plan suggested in the correspondence between the Hon. Mr. Howe and the Right Honorable Earl Grey, accompanying His Excellency's Message; and is not prepared to pledge the public credit, or the future resources of the Province, further than is set forth in the address before mentioned, towards building the Great Trunk Line from *Halifax* to *Quebec*."

Her facility will enable her to build from *St. John* to *Calais*. But if she requires assistance, because that measure is withheld—or because the patriotism of her people may be tempted by the offer of Imperial assistance, or her Representatives tampered with by the mercenary appeals made through the pocket—there is still left to us the opportunity of carrying forward the work under the broad and liberal charter already secured.

The people of the United States will not allow this opportunity to pass by unimproved, and when our brethren of New Brunswick shall lay the claims of their road before the people of the United States, they may rely upon a favorable response.

The Colonial policy of Great Britain is in a fair

way of being tested. The ill-digested system by which her Colonial Empire is now held together, must soon be put to its severest test.

English colonies were once governed by an absolute executive. Her colonial governors, like the Roman pro consuls, exercised imperial authority in the name of the crown. The Saxon blood asserted its right to share the authority in making laws, and Provincial Parliaments have grown into use wherever the Anglo Saxon race has planted its feet. Concessions from time to time have been granted till the recent experiment has been attempted in British North America of "RESPONSIBLE GOVERNMENT." This principle is now asserted in all the British America, and the model of the English constitution is copied, an executive holding place by Imperial appointment instead of hereditary descent. The difficulties of this system are already apparent in the constant interference of Imperial with Colonial interest. Canada sought to protect her iron manufactures by a discriminating duty, and the dispatch of Earl Grey informed the Governor General of Canada in 1848, that it would interfere with the interests of Scotland, and was therefore against the interests of the people of the Empire. New Brunswick has just granted a charter for the European and North American railroad, and Earl Grey requires the charter to conform to Imperial wishes and necessities. In other words, the colonies may legislate for their own interests, when in the opinion of the English ministry they do not jeopardise Imperial interests. These Imperial interests are not defined by any written law or constitution, but depend for their importance on the ministerial idea of the hour.

A conflict of interests must sooner or later come up. The interests of the North American Provinces, with their abundant natural resources are more in unison with our own, than with Imperial, European policy—and nothing short of a total surrender to the colonies of the management of their local, physical and commercial affairs, or an incorporation of the colonies into the nation itself, as an integral part of the Empire, will satisfy the advancing spirit of progress, and free opinion in British North America.

In abandoning the principles of responsible government, and yielding to the imperial demands, Mr. Howe will find in the carrying out of his railroad schemes full play for his versatile and imaginative powers. He now assures us, in the strongest terms, of the certainty of bringing the iron locomotive by rail, from Halifax to the boundary of Maine, as soon as we can give him a similar track from the eastern boundary of Maine to Portland. But if he fails in bringing the discordant elements of Canadian legislation into harmony with that of New Brunswick and Nova Scotia, he will then renew his pledges to the Portland convention scheme, build the road as we must build ours, through private exertions, and join us at the same time and place at the boundary.

With these assurances before us—with the correspondence of the British government in our hands, showing their appreciation of the scheme—with the testimony on all hands of the practicability and paying qualities of our whole line, will not the people of New England and the United States generally contribute in the form of subscriptions to the stock, the one million of dollars which we require to secure this great work.

Mr. Poor, (says the Portland Advertiser) then gave in detail the plans of the corporators and of the committee. Books are to be opened on the 20th of August, in many places in this and other States, and an effort was required, to induce the people in each town in Maine, to do something in aid of the work.

He then alluded to the effects of the enterprise upon the future interests of Maine and the whole Union, and its probable effects upon the social and commercial condition of the race. His remarks were repeatedly interrupted by earnest cheering, and received with great attention.

Mr. P. Barnes, after making some inquiries as to the precise condition of the enterprise in New Brunswick and Nova Scotia, entered into a series

of observations, showing the vast importance of this work, and the necessity of giving an earnest, vigorous and impressive response to the noble stand, and the admirable resolutions of New Brunswick.

A series of Resolutions were then passed, declaring that the enterprise of the European and North American railway, as developed and recommended by the Portland Convention in August last, having been further sanctioned and tested by the results of careful scientific explorations and estimates, and by the concurring and repeated expressions of a wide spread public opinion, wherever its plans and objects have been made known, continues to merit and command the warmest favor of the authorities and the people of the State of Maine, and that the investigations made by the Executive Committee of the enterprise, and by the corporators, have satisfactorily shown, that the great communities through and near which the line of the railway will pass, can command ample resources for its construction, and that all the auspices of the enterprise, at the present time, indicate that the controlling parts of the line can and ought to be built, and especially that measures should be taken without delay for commencing that part lying within the State of Maine, and that efforts should be made to obtain subscriptions to the amount of \$1,000,000, which sum would justify an immediate commencement of the work. New Brunswick was highly complimented for the manner in which she had acted towards the enterprise; and a confident expectation was expressed that the Province of Nova Scotia would speedily and effectively reunite with her sister Province, in securing this great band of commercial intercourse, which by its direct connection with all the great railway lines of the United States and of Canada, will combine for their common advantage the commercial sympathies and movements of all the Anglo Saxon race on this continent.

The above Convention was one of great interest; and from the magnitude of the project, we have presented copious extracts from the report of the committee. It appears to us to state, in a full and succinct manner, the history of this enterprise, which has now so intimately connected itself with the colonial policy of Great Britain, to which it has given a new feature, and which must be followed by very important results.

For the American Railroad Journal.

The Proposed Mohawk Valley Railroad.

This project, which for a while seemed to excite so much attention, has received its quietus from the deliberate judgment of men of sense, and of capital. They have decided, as they could not have failed to do, that no more fatal blow could be struck at legitimate enterprise, at the stability of property, and at plain common sense, than the encouragement of such a scheme. The idea that another road could be made, which should be worth anything, along side of a complete double track railroad in perfect operation, and free from debt, is entirely absurd. What a silly act, to speculate upon the cost of the existing road. *It is paid for.* It is in perfect condition. So far as respects a rival road, it is the same thing whether it cost more or less, for the owners of this property will not suffer such rival to spring up, and take its business.—Being paid for, and in skilful hands, it would soon cool the hopes of any adventurers, who might embark their money in such a project. The Utica and Schenectady railroad could do ten times the

business that it now does. We repeat, then, how absurd to think of getting away its business. The same quixotic adventure was often tried by opposition stages, which always failed, simply because those having the ground, the stock and the spirit, would put down the fares to such rates, as would destroy the new aspirants. So it is in the case of steamboats on the river. These are plain practical views, that show the utter absurdity of an attempt to get the business of a strong, existing, independent, establishment. It is a kind of business that men who have nursed will not surrender.—There are other views in relation to this. A road along side of the Utica and Schenectady road could do nothing, because it would have no connections. It could not now stop at Buffalo even, but must go to Cincinnati. Freight and passengers will not go half way in one line, and then shift to another.—The companies on the Central line are all connected, through several corporations. They have each a careful, watchful administration. They look well to both their through and way business. They meet and settle, after mutual explanation, such a course of business as will best advance the interest of the whole line. Then they carefully conduct the expenses of each corporation, so as to make the best revenue, practicable, for their shareholders. The property, and the men, in service of each company, are constantly under the close examination of the owners of the stocks of these companies, who live along the line, and who thus so successfully conduct them. It is this course of management—it is the fact, that there are several companies so united—that has made the railroad property between Schenectady and Buffalo so valuable.—The very nature of their business, and the mode of its management, shows that a rival road along side of either, would be as lifeless an affair as could be conceived of. It will show also the success of this mode of management, over that of a great company, whose agents are far removed from the seat of power, and where all the matters having weight cannot be seen. The corporations alluded to, exemplify well the success of men who attend to their own business, while other large and extended lines may show how business is done by agents.

The Mohawk Valley railroad project has been an interesting matter to those who might desire to see how far men would go in a race of folly, and how many could be deluded by the humbug idea, that a railroad is valuable in proportion to the strength of a powerful, complete, paid for road along side of it. The report of the commissioner and chief engineer of this proposed railroad, and the estimate of the cost of its construction, having lately appeared, let us examine its details, and see whether the misstatements and omissions in the estimate, may not lead to a doubt of their being entirely reliable.

The report of the commissioner appears to be almost wholly taken up in giving the statistics of the Erie canal, and Utica and Schenectady railroad in the same valley; and presents a singular contrast from the same author, when writing upon a similar subject some years since, upon the statistics and commerce of the New York State canals.—Then every view of the subject was gloom, despondency and ruin, but now an unusual brightness is given to the picture, and a coloring that seemed to anticipate some personal considerations, not fully expressed.

It is true the Erie canal has been eminently successful, extending its benefits far beyond the limits

of this State, and with proper management, and a prudent reduction of toll, as the business increases, may continue so for all time to come. But does this prove that it would be a paying project to make another canal along side of it from Utica to Schenectady?

The Utica and Schenectady railroad has also been a good investment for money, and with their previous high prices, and good management, have been able to divide a little over ten per cent. per annum to their stockholders; and with their perfect connections, with the roads at either end, in this great channel of business, may be enabled to retain their present income, and their present low fare may possibly be reduced, with the increase of trade and travel, and thus in the best manner accommodate the public; but should this rival road be constructed, it would doubtless be at nearly an equal cost with the other, and could hardly fail to result in an entire loss of the capital expended in its construction, as one road properly equipped and managed, in connection with the canal, not only is abundantly able to do all the existing business, but could do ten times as much.

The engineer's report goes fairly into the merits of the project, but it contains so many omissions in the estimate, as to create doubts whether it is not a report got up to order, to enlist a limited number of stockholders, who would be hereafter compelled to raise additional funds to complete the work, or sustain a total loss of the money expended. That the work is feasible, no one acquainted with the subject will question; but that a road should be either made, or estimated, without being gravelled for one-half of the distance, may well be doubted. The rolling stock of ten locomotives, twenty passenger cars, and one hundred freight cars, is entirely inadequate for the daily trains now in operation on the other road; for it will readily be seen, that to do a successful business, this new road must compete for all the business, and with every train, whether their cars be loaded or empty, and the eight trains of cars per day each way, would require at least double the number of locomotives estimated for by the engineer, and if stocked as well as the Utica and Schenectady railroad, or the Syracuse and Utica, it would require twenty-five engines to run the trains, so as to compete with any effect, and the passenger and freight cars must be increased in the same proportion.

The Utica and Schenectady railroad has the most ample terminations in the cities, and encounters but one important rock excavation, and but four villages on the route, and the entire north valley of the river enabled the engineers to select a good route, and many years since to procure the land under favorable circumstances.

The new road must purchase their depot grounds in both cities. They would encounter four extensive rock cuttings, three formidable side hill excavations, and passes through nine considerable villages, besides the disadvantage of the Erie canal, now occupying the best location in the valley upon the south side of the Mohawk river. The rock excavation at Little Falls will be truly formidable, and those at the "Big Nose," and the "Little Nose," and at "Flint Hill," will be expensive, and this last place of rock excavation is estimated at ninety cents per cubic yard, by the engineer, a little more than half the price paid by the State for the same work.

He attributes the great expense attending the glides "Yankee" and "Devendorf" hills, to a

want of proper slope in the original construction of the Erie canal, but he fails to inform us by what means this expense of 32 feet in width of excavation for his railroad is to be guarded against, when a 10 feet in width berm for the canal has cost so much annually for the past 20 years. Besides all these difficulties, and the necessary provision for freight stations not fully estimated, there appears to be an entire omission of the usual ten per cent. to cover contingencies, such as unforeseen work, law expenses in procuring land titles, failures of contractors to perform their work, etc.

The addition of these various items, with others not noticed, would add materially to the total cost, and would not probably vary much from the following:

His estimate for a double track railroad is.....	\$2,706,107 62
Gravelling 38 miles from Canajoharie to Schenectady (omitted in the estimate) at \$3,000.....	113,000 00
22,000 cubic yards of rock excavation at Flint hill, at 70 cents extra.....	22,400 00
Extra for land.....	180,000 00
12 locomotives—extra, \$8,000.....	96,000 00
20 passenger cars " 2,000.....	40,000 00
100 freight " " 700.....	70,000 00
Extra for freight and passenger depot.....	120,000 00
Add 10 per cent. for contingencies....	334,850 00
	\$3,683,357 62

These additions will not appear unreasonable to any one conversant with the subject; it is less than the cost of the equipment of the Utica and Schenectady road, and he has estimated for the transportation of 91,000 tons of the 98,000 tons carried last year by the other road, in making up his 11 per cent. income. Some persons not over nice, might not be able to see why the Utica and Schenectady railroad company should give up quietly 91,000 tons of their freight out of the 98,000 which they have carried.

Both the commissioner and engineer have drawn largely upon their imaginations, as was very necessary, in making up the income of their favorite railroad route, and very large allowances should be made to their estimates, both in their receipts and expenditures, as well as upon the sum on which they propose to make dividends. While this central line has a superior position beyond its rivals, it is not to be denied that the New York and Erie railroad with its branches made, and those in progress of construction, or contemplated, terminating at various points, to induce trade and travel from this central line, together with the Northern railroad, and the various Pennsylvania and Southern roads, competing for this same western business, will doubtless to some extent prevent its rapid increase; and these various channels of trade, and the constant reduction of prices, with the present low fares, should have some little influence in the estimates of new and opposition parallel railroads.

On the extravagant supposition, however, that the new road is completed, and fully equipped, and in operation, would not the competition inevitably lead to low fares and prices, so as to destroy the profits? Similar results have happened in other places, and with the roads, their cars and engines in view, and in the same valley, for eighty miles in length, with eight or ten trains per day each way, they would probably ensue in this.

HERKIMER.

Plattsburgh and Montreal Railroad.—The ground for this road was broken on the 16th ult. The ceremony was attended by a large concourse of citizens who, as they had a right to do, manifested a deep interest in the enterprise.

Indiana.

Madison and Indianapolis Railroad.—The semi-annual report of this company shows the condition of their business on the 1st of July 1851, as follows:—

Balance from January 1st, 1851.....	\$4,749 52
Receipts from transportation.....	151,503 95
Receipts from Mail, 4th quarter, 1850.....	1,864 29
Running service on Bellefontaine road.....	1,035 21
Running service on Peru road.....	545 85
Received for work done in shops for other roads.....	8,244 96
Miscellaneous sources.....	1,995 72

Total.....	\$169,939 50
Amount expense charged.....	\$110,254 34
Less amount for new cars provided for by Bonds, but charged to expense account.....	27,600 00

	\$82,654 34
One half of tax suspended account....	11,295 37
Amount to balance.....	75,989 79

Total.....	\$169,939 50
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Amount of nett profits as above, admitting of a dividend of 5 per cent.. \$75,989 79

The Receipts show a large increase compared with the corresponding months last year.

Receipts for transportation for six months just closed.....	\$151,503 95
Amount same six months 1850.....	100,153 60

Increase.....	\$51,350 35
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—being a fraction over fifty-one per cent.

The amount of nett profits here presented, says the report, does not do full justice to the actual earnings of the road.

We have deducted one half of a tax account, that has been suspended from circumstances connected with its assessment during three years... \$11,295 37

The government is in arrears 6 months

Mail pay.....	3,728 58
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We have graded principal portion of a double track between Edinburgh and Columbus, and paid freight on iron..... 4,283 44

We have hauled our own iron and ties for twenty six miles of road relaid, actual expenses of hands and trains not less than..... 3,000 00

We have paid for a year's supply of wood, \$10,882 61, one half or more of which is on hand..... 5,441 30

Total.....	\$27,748 69
Nett earning as above.....	75,989 79

Total.....	\$193,738 48
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The track is generally in good condition, and the whole will be completed with T rail in a few weeks.

Important Railroad Enterprise.

The Mayor and Alderman of Nashville voted on Tuesday a subscription of \$50,000 stock in the Nashville and Chattanooga railroad company as stock in the Winchester and Alabama road, which is to be immediately surveyed, put under contract, and hastened to an early completion. This will connect Nashville with the Selma road at Gunter's landing on the Tennessee river, thence with the Alabama river, and thence, by uninterrupted navigation, with the Mobile Bay. When this line of improvement shall be completed, it is estimated that Nashville will be placed within fifty-two hours of New Orleans.

The Nashville manufacturing company, encouraged by extraordinary success thus far, have resolved to increase their capital and commence at once the manufacture of locomotives—having already engaged the services of one of the best locomotive builders in the United States.—*Louisville Journal.*

Illinois.

Railroad from Springfield to Bloomington and Peoria.—The following is the proposed route of the northern extension of the Alton and Springfield road: From Springfield it crosses the Sangamon river between Fancy Creek and Wolf Creek; it then passes in a direct line one and a half miles west of Elk Heart grove, to the Rocky Ford crossing of Salt Creek; there diverging to the right, the survey passes on the divide between Sugar and Kickapoo creeks, over very fine ground, to Bloomington. The Pekin and Peoria branch will diverge to the left, one mile north of the Rocky Ford, and cross Sugar creek sufficiently to the east to head Prairie creek, and will extend on a straight line near Delevan, through Circleville to Pekin, crossing the Mackinaw near Circleville. From Pekin to Peoria bridge the route of the survey is not yet definitely located. It is said that the citizens along the line of the road are deeply interested in the enterprise, and will do all in their power to further its progress.

Aurora Extension Railroad.—The Board of Directors of this company have recently been in session, and have made arrangements, it is stated, to put the road under contract by October next. It is thought that the Aurora Extension company and the Galena and Chicago company will consolidate their interests. A resolution was passed increasing the capital stock to \$600,000.

Lawrenceburg and Indianapolis Railroad.

We regard this as one of the most important roads leading to this city. When completed it will be the most direct route to Cincinnati, the distance only being about one hundred and ten miles. The whole road will be of the same gauge, so that there will not be any change of cars, thus lessening the cost of transportation. This advantage will not be possessed by any other route, so far as we are informed.

Some persons entertain the idea that a railroad direct to Cincinnati, would not benefit this city.—We are of a different opinion. Thousands would annually be saved in transportation of produce and merchandize.

On the completion of the Terre Haute railroad to the immense coal fields of Putnam and Clay counties, we shall be able to get this article at a lower rate than it can be afforded at Cincinnati.—It enters so largely into the expense of manufacturing that we shall then be able to compete with Cincinnati herself in the manufacturing many articles, and can send them by railroad, to that market for sale.

It seems to us that our citizens have not given this road that attention its merits deserve. It is true that those able to take stock had engaged in other roads previous to the commencement of the Lawrenceburg road. This is the reason why nothing has, as yet, been done by them. Several of those roads are now near their completion, and we hope those who have been so instrumental in their construction will now push forward this road.

George H. Dunn, Esq., is the President of the road, and is doing all in his power to hasten its completion.—*Indiana State Journal.*

Alabama and Mississippi Railroad.

We are well pleased to learn that the Directory of this road have engaged the services of our townsman, W. S. Burr, Esq., as agent for the road to solicit subscriptions to the capital stock of the company.

This company are proceeding upon a very safe plan—to get a large part of the stock subscribed before commencing the work of construction—and there is no one in the country half so well qualified for the task he has undertaken as Col. Burr.—His earnestness of purpose—and his great information upon the subject of the railway in all its relations to the best interests of the country, give good guarantee that this road may soon be looked upon as a fixed fact.—*Selma Paper.*

Extension of the Baltimore and Ohio Railroad.

This great work, after resting for many years at Cumberland, has again taken up its line of march for the Ohio. The first opening beyond the above point, was celebrated on the 22d ult., in a style altogether suited to the magnitude of the event. On Monday the 21st an express train, having on board the President and Directors of the company, the Mayor and city Council of Baltimore, and a numerous party of invited guests, left Baltimore for Cumberland, and on the succeeding day made the opening excursion as far as Everett tunnel, a distance of 32 miles from the last point. The company after inspecting the tunnel, and looking out upon the peaks of the lofty mountains beyond, which "the first ray of morning gilds, and on which the last departing rays of the sun linger and play," returned to the Piedmont station, where a dinner was prepared for them in the new store house of the company in that place. After this was properly discussed, the company were entertained by a number of highly interesting speeches from gentlemen connected with the road, and from the invited guests. The first gentleman to speak was Thomas Swann, Esq., President of the road, who commenced by alluding to the vast labor which had been imposed upon him since his connection with the company, a period of three years. He had endeavored to serve the company to the best of his ability, and if in anything he had done, he had contributed in the smallest degree to the prosperity of the city of Baltimore—to the advancement of her industrial classes—he had already been more than compensated for the days and nights of toil which it had been his lot to encounter.

Mr. Swann then paid a high compliment to the engineering corps of the company, for the skill exhibited by them in the construction of the road, and for their activity and energy in keeping their pledges to the public. The Baltimore and Ohio railroad he pronounced to be without parallel in the Union. He had recently made himself acquainted with the New York and Erie railroad, which is the most extensive line of railroad in charge of one company in the world. It was 467 miles long, and had already cost \$27,000,000. "But" said Mr. Swann, "I deem it my duty to say here, and I say it with pride as a Marylander—I say it in justice to the Chief Engineer of this company, who may not feel himself at liberty to speak with the same freedom that I may do, on a subject with which he is so intimately connected, that whether considered in reference to its engineering features—the boldness of its design, or the obstacles, formidable as they have been, with which it has had to contend from its origin, the Erie road cannot be named in the same category with the stupendous work which lies before you."

He had seen it stated with some degree of triumph, that the earnings of the Erie road were for the month of June, \$225,000; but this was upon a cost of \$27,000,000, and the road was completed to its western terminus, Lake Erie, fully equipped and possessing for the public all the attraction of novelty. On the other hand, the earnings of the Baltimore and Ohio railroad, with a capital of less than \$9,000,000 invested in that part of the road which is already in use, terminating in the gorges of the mountains, depending almost exclusively upon its local trade and travel, produced during the same month of June, a revenue of \$110,000—nearly one-half of what this great New York enterprise. When your road is complete and fully graded for

two tracks, it will have involved a total outlay of less than \$16,000,000, against \$27,000,000, expended upon the single track of the Erie road. Is it, said Mr. Swann, too much to anticipate now, that we may at least expect to compare favorably with what is now admitted to be the greatest railroad enterprise in this country!

Mr. Swann then proceeded to speak of the proposed connections with the Baltimore and Ohio railroad. As this subject is now attracting unusual attention, we choose upon this point to give his own words:—

Gentlemen, I fear that I may be presuming upon your patience—(cries of no, no, go on, go on, from all parts of the house.) I have said that I could see nothing in the future which should impair confidence in the ultimate success of this road. It is known to you that the Legislature of Virginia, at its last session, passed a law incorporating a company to bring you in connexion with Parkersburg on the Ohio river—a point which, for twelve years, this company had been fruitlessly striving to reach, and from thence with a road extending through Cincinnati to St. Louis in the far West. This, gentlemen, is the greatest railroad charter that has ever emanated from a Legislative body. To the people of northwestern Virginia, the city of Baltimore, and the Baltimore and Ohio railroad company, its advantages cannot be over-estimated. Its withering effect upon rival interests is already beginning to show itself, in the spasmodic efforts that are now being made in certain quarters, to arrest its progress. (Cheers.) I have seen it publicly proclaimed by a prominent member of the Board of Directors of the Pennsylvania Central road, that this road never would be built. By what authority does he undertake to speak for the city of Baltimore? Gentlemen, I am not over sanguine in my temperament—I am not apt to anticipate results; but I feel justified in saying, that when this great north-western charter shall be presented to our people—when Baltimore shall be called upon for her contribution to carry it out, it will excite a more wide spread interest—it will ensure a more united and liberal support, than any work which has engaged the attention of her citizens, since the origin of their present system of internal improvements. (Loud and continued cheering.)

Gentlemen, I have authority for stating, (the success of rival interests to the contrary notwithstanding), that the northwestern company will be organized in less than ten days from this time.—Arrangements are already in active progress, to have the route surveyed and prepared for contract; and I indulge the firmest conviction, that within the period limited by her charter—within twelve months after your road is opened to Wheeling—the great straight-line road, the "forlorn hope," as it has been called in Philadelphia, will be put in connexion with Parkersburg, and it may be with the city of Cincinnati.

I am not one of those, gentlemen, if any there be, who advocate the Wheeling terminus because I believed it to be the best point of contact with the Ohio river; but because in the then state of our relations with the State of Virginia, it was the best that could be accomplished. If we had not accepted the charter of 1847, you would not now have to congratulate yourselves upon the right to connect with Parkersburg by the independent charter of the North Western company. I deem it of vital importance to this community that there should be no longer delay. I could not stand by with my arms folded and see the city of Baltimore cut off from all the bright and encouraging prospects, which for twenty years she had so fondly indulged, while so many and formidable interests were in motion.—(Cheers.) I see no reason to regret the policy of the company. Its wisdom has been more than confirmed by events that are daily passing around us. The Central Ohio road, it is known, must terminate at Wheeling. That city must become the entrepot of a valuable trade, which could not be reached by a connexion farther South; and her shortest and best outlet to the sea-board is by the Baltimore and Ohio railroad.

I have heard a great deal, gentlemen, of late about the Hempfield road, connecting the city of

Wheeling with the Central Pennsylvania line. I confess I do not feel sufficiently informed to speak here of its plans or prospects. The cost of this road has been estimated by competent judges at \$3,000,000, and Philadelphia we are told is to build it. How this may be, gentlemen, I do not pretend to know. I may venture the suggestion, however, that with the rivalry of the Baltimore and Ohio railroad on the one hand, and the Parkersburg road on the other, private capitalists may hesitate some time before they embark \$3,000,000 in any such enterprise. And why should Philadelphia in her corporate capacity, build a road from Greensburg to Wheeling to destroy Pittsburg, if such is to be its effect, when it is demonstrable that she can get an easier and better line to connect with the Central Ohio road at Wheeling, at one-half the cost of the Hempfield road?

Gentlemen, it strikes me as somewhat remarkable, that Philadelphia, after all her efforts to build up Pittsburg, and they have been creditable to her State pride, should now have discovered that her salvation depends on cutting loose from that city, and following the Baltimore and Ohio Railroad to its formerly despised and ridiculed terminus at the city of Wheeling. [Loud cheering.]

Pittsburg charges her with perfidy and endeavors to turn away from her in disgust. Why is this, gentlemen? why all this excitement? Is it because the Baltimore and Ohio railroad company have selected a better terminus than Pittsburg? Is it because Philadelphia has no confidence in the policy of the Central Pennsylvania road in selecting a point which has signally failed to secure the trade of the West? Whose fault is it that Philadelphia is to be involved in this immense additional outlay to repair errors which are now so boldly and unblushingly admitted?

Gentlemen, as an evidence of the excited state of feeling now prevailing among our Pennsylvania friends, I have a letter of recent date on my table in Baltimore, from a most respectable source, proposing to re-open the subject of the Connellsville and Parkersburg charter, with a view to an early connection with this road. Now, I wish it to be understood that I never at any period objected to a connection by railroad with Pittsburg, under proper circumstances, and at a proper time. I consider Wheeling a better terminus for the Baltimore and Ohio railroad than Pittsburg—and I am equally candid in saying that I should have considered Pittsburg, if it had been offered to us at the time this road was put under contract, a better point than either. When the paramount claims of both these roads are disposed of—and they cannot be disregarded,—it would be the interest of the people of Baltimore to encourage by every proper means in their power, a communication with the great and populous city of Western Pennsylvania.—Gentlemen, it is your true policy to invite connections from whatever quarter they may come, and to give aid and assistance to all such as may be likely to contribute to the augmentation of your trade.

But the anxiety of Philadelphia does not end here. Wheeling it appears is not likely to give her all that she is in pursuit of. Her nerves are far from being tranquilized. Some of her wise men lately held a meeting to pledge her support, in addition to her other gigantic undertakings, to a connection between Wheeling and Marietta, with a view to the southern trade of Ohio. Distrusting, as we are left to infer, the terminus of their own free choice at Pittsburg, they first come to Wheeling by the Hempfield road, but when there, the next impulse that seizes them is, to rush on to the village of Marietta in a wind-mill attack upon the trade of Southern Ohio. (Cheers.) Gentlemen, this whole excitement is referable to the passage of the North Western charter. It needs no penetration to discover that Philadelphia sees the influence which the great straight line road from Baltimore to St. Louis is destined to exercise upon all her existing and future relations with the trade and travel of the west. These guardians of her interests must display more tact than I have been able to discover, if they can get rid of its paralyzing effect upon every work now or hereafter to be projected, which may be brought in conflict with it.

Gentlemen, of all these schemes which have grown out of the confusion and alarm excited by the Par-

kersburg charter, that of a connexion between Wheeling and Marietta, to secure to Philadelphia the trade of southern Ohio, is to me the most absurd and ridiculous. Suppose Marietta, which I can hardly bring myself to believe, should become the temporary terminus of the Belpre and Cincinnati road, is it not the policy of Marietta to connect with the terminus of the North-western road at Parkersburg? Will she not do it? Can she prevent such a connection? Why, gentlemen, the distance is only 11 miles, and the time consumed in the transit between the two points less than half an hour. What then becomes of the river railroad between Wheeling and Marietta? Is Philadelphia to be tantalized with the idea that her magnetic attraction is so powerful that she can draw trade and travel a distance of more than 90 miles out of the direct channel to the nearest market on the seaboard? But how long is the gap between Parkersburg and Athens, a distance of some 35 miles, to be kept open for the exclusive benefit of Philadelphia? How long will Cincinnati permit it? And when closed, what becomes of 2,000,000 of capital invested in the road between Wheeling and Marietta? Philadelphia had better concede at once what she must know to be the fact, that her only hope of deriving any benefit from the southern trade of Ohio, is through the city of Baltimore. (Cheers.)

We copy from the Baltimore Patriot the following interesting account of the ascent of the locomotives, up the maximum grade on the road (116 feet.)

The train containing the visitors consisted of five passenger cars well filled. These were drawn by engine No. 71, built by Mr. Ross Winans, to the Piedmont station at a moderate speed, to permit a view of the road; and after a short delay at that point, during which one of the passenger cars was detached, and five gondola cars, loaded with iron, were attached, the locomotive proceeded with this train, weighing about 117 tons. Over the successive grades, 39, 40, 50 and 70 feet per mile, extending for $1\frac{1}{2}$ miles, the engine ran in 4 minutes, or at the rate of 20 miles per hour, and then entering upon the grade of 116 feet per mile, she ascended it in 8 minutes, to near the point at which the track terminates, a distance of $2\frac{1}{2}$ miles from the beginning of the grade. The speed on the grade of 116 feet, therefore, averaged $17\frac{1}{2}$ miles per hour. The steam pressure during the run was 110 lbs. per square inch, and the cut off or expansion valve was used for about two-thirds of the distance, when it was changed to the full stroke—the shifting of the valve motion causing a little loss of headway, which was, however, immediately regained. The steam was blowing off all the time, though not freely. There was no slipping of the wheels, and no necessity for sanding the track.

Immediately after the passenger train, the locomotive No. 72, built in the shops of the company at Mount Clare, came up the grade with a train of 18 gondola cars loaded with iron rails, and weighing in all 234 tons gross. Her speed upon the grade was about $7\frac{1}{2}$ miles per hour, and she performed the run, working her valves at full stroke, with abundance of steam, and without stopping her wheels. The rail was dry and clean, and in the most favorable condition for adhesion.

The weight of engine 71 is 24 tons of 2240 lbs., and of engine 72 is 25½ tons. The former has cylinders of 19 inches, and the latter of 20 inches diameter—the length of stroke in each case being 22 inches. On the previous day both engines had been tried, No. 71 with 16, and No. 72 with 18 cars, or 208 and 234 tons respectively, and each drew its load up the grade without halting or slipping its wheels, and at speeds of from six to eight miles per hour.

The power of traction of the two engines, with equal pressures of steam, should be as 9 for No. 71, to 10 for No. 72—which numbers show the proportional areas of their cylinders—which have the same stroke—their wheels being also of the same diameter of 43 inches. For every 9 cars that No. 71 would draw, there should then be 10 cars drawn by No. 72. The adhesion, however, of the engines is in a different ratio, that of No. 71 being represented by the number 9—that of No. 72 will be by the number 9.66 100. Engine No. 71 has therefore the most adhesion in proportion to its tractive power, and if both are using all their adhesion, en-

gine No. 72 will do it with a slightly less pressure of steam.

The resistance upon the grade was equivalent to 62 lbs. per ton of 2240 lbs., of which 49.3-10 is due to gravity, 9 lbs. to friction and 3.7-10 lbs. to a curvature of 1000 feet radius—the shortest which occurs upon the grade of 116 feet per mile. This is the maximum resistance met with anywhere on this grade. Where curves of 600 feet radius occur the grade is reduced correspondingly. Engine 71 weighing 24 tons, its tender about 16 tons, and its load 208 tons—making 248 tons in all—the tractive power required was 15,160 lbs., exclusive of that necessary to overcome the resistance of the engine within itself. The weight of the engine being 53,760 lbs., the part of its weight expressing the adhesion of its wheels to the rails was therefore 13.55. By the same principles of calculation we make the tractive power of engine 72, 16,890 lbs., its own weight being 25½ tons, its tender say 16½ tons, and its load 234 tons—the whole equal to 276 tons. The weight of the engine being 57,680 lbs., the part expressing its adhesion would be 13.42.

These ratios show high degrees of adhesion, but they are such as may be expected to prevail when the rails are in their best condition; although in the daily work of the engines, they would not be required to work up so nearly to the limit of their power.

In the calculations by which the performance on these grades was estimated, a power and adhesion was assumed, but little exceeding one half of those exhibited on this occasion.

Inasmuch as by the use of sand upon the rail when it is slippery from frost or other cause, an adhesion of one fifth, or even more, can be commanded, it will be concluded that in working this grade no practical difficulty will be found at any season. With an adhesion of one sixth only, engine 71 would draw 109, and engine 72 118 tons behind the tender.

These loads would be 10 and 11, loaded double cars, of the ordinary weight of about 11 tons, and with them a speed of at least ten miles per hour could easily be maintained.

It is observed that the speed of engine 71, with the passenger train, was $17\frac{1}{2}$ miles per hour on the grade. This was with a load of 117 tons, equivalent in weight to about twice that of ordinary trains of that description, which do not often exceed 60 tons.

There can be no doubt then that engines of that class, which will probably be used for passengers upon this grade, will ascend them, without assistance, with such trains.

It is deemed unnecessary to say more respecting the performance of the engines, than that they and their trains descended the grade at a speed of 10 to 15 miles per hour, under the control of the brakes, and might safely have run down considerably faster, had it been desired.

After the completion of Mr. Swann's remarks, of which we have given only a portion, Mr. Latrobe, the Chief Engineer of the company, and who by the skill and ability displayed in his department, has earned for himself a reputation as one of the first, if not the first civil engineer in this country, was complimented by the following toast:

B. H. LATROBE, Esq., Chief Engineer of the Baltimore and Ohio railroad company, whose science and energy have overcome the obstacles of nature and corrected the received opinions of men of science.

Mr. Latrobe rose to acknowledge the compliment, but it was several minutes before the enthusiastic applause would allow him to be heard. He briefly thanked the company for their feeling manifested towards himself. He could not express to the company any adequate sense of the joy he felt in the triumph, which the working of the locomotive up and over these mountains to-day had achieved for the cause of science; and for the grateful feeling which filled his heart, for the distinguished compliment paid him by the company, in associating his name with that triumph. He was, he remarked, playfully, only the engineer of the compa-

ny. He had been schooled for the bar, but nature, he might be allowed to say, would have its way, and he retired from it to assume the more laborious, it might be; the more useful, it would perhaps be regarded, task of an engineer, which it did not bring those who embark in it so immediately before the public, yet as the way in which this toast was received proved, was not without its rewards, even in the honors which the public sentiment and the public judgment will be sure to bestow on those who merit it. He was, he would frankly say, encouraged by this demonstration to persevere in the effort to deserve the approbation of those whose applause it was no slight honor to gain; and he would refer to what had here been said and done to-day, to stimulate the assistant engineers of the road, who shared with him, in the fullest honor of that compliment, to go on in their work of well doing, for there was a reward in the public confidence and the public approval, which the noblest ambition might worthily be stimulated to gain.

The company was also addressed by the Mayor of Baltimore, Mr. Jerome, by W. L. Clarke, Esq., President of the Winchester and Potomac railroad, and others; but our space will not allow to copy further, which we would gladly do. The event was an era in the history of the Baltimore and Ohio railroad. It was a most joyous occasion to those immediately interested in this great work: and one of no small moment to the public, and to the various lines of railroad to which this is to supply the trunk line to an Atlantic outlet.

Massachusetts.

Eastern Railroad.—At the annual meeting of the stockholders of this company, held in Boston on Monday of last week, the following gentlemen were chosen directors for the ensuing year:—D. A. Neal, Isaiah Breed, B. T. Reed, Ichabod Goodwin, Samuel Hooper, Albern Thorndike, and Samuel Philbrick. From the annual report, it appears that the receipts of the year ending June 30 have been \$502,054, against \$535,414 the previous year. The expenditures \$195,398, against \$183,672 the previous year. After paying a dividend of 8 per cent. the actual present surplus is \$32,253.

The destruction of the ferry boat by fire on the 6th of January, 1851, and the severe gales of February and April last, which did great injury to the road wherever it was exposed to their action, have rendered it necessary to draw largely on the reserved funds, which had accumulated from the earnings of the road in more fortunate years.

The construction of rival routes, and the abandonment of the former conservative policy of the state which had encouraged the building of long lines of railroads, is alluded to in the report attending to reduce materially the value of railroad stock.

The next annual meeting is to be holden in Newburyport.

Saugus Branch Railroad.—It is stated that the stock in this road is all taken up, and that it will be built without delay. It is to extend from the Boston and Maine railroad in Malden, down through Saugus to Lynn. Perhaps it may eventually be extended over the old surveyed route of the Danvers and Malden road to South Danvers; and thence by means of the Essex connecting with the Danvers and Georgetown road, to Georgetown, and thence by the Newburyport railroad, to Newburyport, in which case it would constitute a competing route with the Eastern road, between Newburyport and Boston. The suggestion has been thrown out that the Saugus branch route could be made a favorable

mode for the permanent entrance of the Eastern railroad into Boston; but we are not aware that any arrangements are making to effect that object. In fact, we presume the majority of the stockholders in the Eastern road prefer the present terminus, at East Boston, which is assuming quite a degree of importance, for its ship-building and mechanical, to say nothing of commercial interests. It is urged that instead of changing its terminus at an expense of a million of dollars to avoid the ferry, the true policy of the Eastern road is to put its present route in the best possible condition, so as to be able to compete successfully with the other routes to the eastward.

Essex Railroad.—The stockholders of this company held a meeting at Salem on Monday of last week, at which the following gentlemen were chosen directors for the ensuing year:—George Hodges, David Pingree, Nathaniel Weston, Nathaniel B. Mansfield, Ebenczer Sutton, Samuel A. Safford, John B. Silsbee.

Missouri.

Ste. Genevieve, Iron Mountain, and Pilot Knob Plank Road.—The surveys and location of this work have been completed, and it is now in the hands of contractors. The two sections adjacent to Ste. Genevieve, measuring over seven miles, and the section at the Iron Mountain, measuring six miles, are to be completed by the 1st January, 1852. The other sections, including the branch to the Pilot Knob, a distance of eight and a half miles, are to be completed by the 1st of September, 1852.

A survey is soon to be made to Mine la Motte and Frederickton, to connect these points, by plank road, with Ste. Genevieve.

The completion of this road is of great importance to the iron establishments in that part of Missouri; the cost of transportation hitherto being the great drawback to their success.

Indiana.

Peru and Indianapolis Railroad.—We learn that a contract has been made for the completion of this road in season for the business of the fall of 1852. The contractors are men of well known capacity and experience in railroad construction, and we have no doubt that the road will be opened within the time specified. The whole distance from Indianapolis to Peru is seventy-two miles. The first division of the road from Indianapolis to Noblesville is completed, 22½ miles, and in operation. The portion opened is doing a very profitable business, and upon its ultimate extension to Peru, it is believed it will be one of the most profitable lines in the state. It strikes the Wabash Canal at the most convenient point for the trade of Central Indiana. This canal must always take the heavy freight; and as soon as the railroad now in progress in that state, and terminating upon its banks, shall be completed, it must be the channel through which a large part of the state will procure her supplies of foreign merchandise, and forward her products to a market. From Peru to Toledo on Lake Erie, the distance is 160 miles, making the whole distance from the latter place to Indianapolis 232 miles. The road forms the appropriate extension of the canal to the latter place. It will turn a great part of its trade, and that of the country adjacent, in direction of the lakes.

From this view of the case, it is doubtful whether any road in the state has more flattering prospects of a profitable business. The country traversed, though much of it recently settled, is exceedingly fertile, and already produces a large surplus for ex-

portation. Its local trade must be very great, and if it is to be the avenue for the trade of Indianapolis, its through business must be still more profitable. We think its directors have been very fortunate in effecting arrangements, through its President, Mr. Burke, for its speedy completion.

Tennessee.

Winchester and Alabama Railroad.—It is expected that this road will be pushed forward with vigor. It is designed to extend from the Chattanooga railroad near Winchester, through that town, to the Alabama line, to be met, at any point, by connecting railroads from Huntsville and the terminus of the Selma railroad. In this way, the Chattanooga railroad will have the benefit of the entire Alabama trade. The road is a most important one, connecting as it does, Middle Tennessee, with the immense trade destined soon to follow the course of the Selma railroad, and the Memphis and Huntsville railroad. The Salem road is expected to unite the navigable waters of the Alabama river with those of the Tennessee at Gunter's landing. The Memphis road will run from the Mississippi to Huntsville, passing, of course, through and near the southern counties of Tennessee and the northern counties of the states of Mississippi and Alabama. The trade thus secured must be of great value.

The company have elected Hugh Francis, Esq., of Winchester, President, and have appointed Mr. E. D. Sanford Chief Engineer. The Nashville Union states that sufficient subscription has already been obtained to render the building of the road at no very distant day absolutely certain.

Importation of Iron.

The following is a statement of the amount of English Iron imported into the Port of New York for the six months ending July, 1851:

	Tons.
Sheet and Plate.....	5,159
Bar.....	26,700
Hoops and Rods.....	5,094
Railroad Iron.....	40,008
Pig Iron.....	25,346
Swede and Russia.....	5,098

Total tons.....107,406

Williamsport and Elmira Railroad.

The definite location of the extension of this railroad, from Ralston northward, is now being made to a point at the summit of Towanda Creek, whence the route to the intersection of the Erie railroad is as yet undetermined. Although it was originally contemplated, and has until recently been expected that Elmira would be the northern terminus of the road, yet we understand an influence is being exerted, which will probably be successful, to secure a junction with the Erie railroad, at Waverly. This line follows down the valley of Towanda Creek to the Susquehanna river, thence up the river bank to Athens, where the Chemung river is crossed, and at a point three miles distant, the Erie railroad is reached near Waverly. It is represented that the cost of constructing the road to Waverly would be \$250,000 less than the cost to Elmira, and that there would be no grade exceeding 30 feet per mile, whereas on the route to Elmira it has been ascertained that two summits must be crossed, which require 50 feet grades in the ascent. On the other side, it is stated that the distance to Waverly from Williamsport is seven miles farther than to Elmira.

Considering the extensive business to be transacted by this railroad, which must be obvious, on examination of its Northern and Southern connex-

ions, we trust that route will be adopted most conducive to the permanent interests of the company, and that these may not be sacrificed for any considerable temporary advantages.

Invention.

James Milholland, Esq., master machinist of the Reading railroad, has invented what he calls a "Mountain Shoe," designed to moderate the speed of cars in descending a heavy grade, when the rails are slippery from rain or other cause. In a late trial of the shoe, it brought down a grade of 300 feet to the mile, fifty coal cars, at an average speed of five miles per hour. The efficacy of the shoe consists simply in its form—being provided with an additional curve from the one in which the wheel rests, and this being turned at an angle, which gives the most powerful resistance to the downward pressure. They are also instantly removed from the wheels by a backward motion of the train; the fore wheels of the car acting upon a curve in front of the shoe, removes them from the rail to the side of the track.

Baltimore and Philadelphia.

Our readers will find the Baltimore side of the controversy, now going between the above cities, in reference to Western connections, well stated in a communication in another part of our paper, signed "Baltimore." It presents the Baltimore view of this matter, and invites the scrutiny of the friends of the other route.

Atlantic and St. Lawrence Railroad.

This road was opened for travel on the 23d ult., to the White Mountains, 91 miles from Portland. The event was celebrated with a good deal of enthusiasm. An excursion train carrying the directors of the company and a large number of invited guests, left Portland on the morning of the 23d, dined at Mount Washington house, at which the speeches and toasts proper to such an occasion were given. At 5 o'clock, P. M. the party returned to Portland in about three hours running time.

The occasion of the opening of the White Mountain section, attracted a large number of persons from the neighboring states, who for the first time seemed fully impressed with the greatness of this enterprise, and with a conviction that its early completion is a matter of certainty. It is now regarded as one of the leading works of the kind in the United States, and destined to be a formidable competitor for Western trade. It will probably reach the St. Lawrence in season for the winter business of 1851-'52.

New York.

The Directors of the Syracuse and Binghamton railroad company met on the 24th at Syracuse, for the purpose of electing officers, and of making preparations to commence the work. Henry Stevens, Esq., of Cortland was elected President, and Col. H. Lewis of Broome, was elected Vice-President; Horace White, Treasurer, and A. H. Hovey, Secretary.

Massachusetts.

Taunton Branch Railroad.—At a meeting of stockholders the following were chosen directors for the ensuing year:—William A. Crocker, Thomas B. Wales, Samuel Frothingham, John F. Loring and Fitzhenry Homer. At a subsequent meeting of directors, W. A. Crocker was re-chosen president, Edw. Pickering treasurer, and A. E. Swasey superintendent.

New Orleans and Jackson Railroad

The line of this road is now being surveyed.

Tehuantepec Railroad.

Advices from Washington state that the Administration will not interfere in the dispute between the Tehuantepec railroad company and the Mexican Government. The latter is firm in its determination to make no exclusive arrangements with any company, but has announced its willingness to enter into a treaty upon the principle of our treaty with New Grenada, and the Clayton and Bulwer treaty with regard to Nicaragua.

American Railroad Journal.

Saturday, August 2, 1851.

Stock and Money Market.

The Stock and Money Market has undergone a severe change since our last. Some of our stocks have within a few days declined ten per cent. The heaviest blow has fallen upon the Erie, which from 84 a few days since, has touched as low as 74½. Other stock have all been affected, but not to an equal extent. Money is in demand and difficult to be had, except at high rates. Short loans are being called in by the banks and brokers. The former discount sparingly, and there seems all round to be a general disposition to suspend operations for the present, till we see what effect the excessive shipments of specie will have. It is the fear of disastrous results from this cause, that has produced the present state of things.

There is probably no sufficient cause for the excessive alarm which now exists, but the check given will exert a salutary influence. It will tend to check importations. It will knock up speculative movements. It will give our people an opportunity to turn round to see where they are. It will beget a greater caution on the part of our business men, and will exert a strong influence to ward off the evils that are feared. The condition of the future depends entirely upon the extent of our shipments of specie, compared with our receipts. We have a vast surplus of products of every branch of industry; and but for the extent of our foreign indebtedness, we should be in the enjoyment of unparalleled prosperity.

Quotations of new securities are merely nominal. There is but little movement of any kind. The foreign rail market continues dull, without any immediate prospect of a rise.

Lachine and St. Lawrence Canal.—The following is the amount of tonnage on this canal from the opening of navigation, April 23d, to June 30th inclusive:—

	1850.	1851.	Increase.
Upward Freight....	16,494	26,916	64 per cent.
Downward "....	31,509	44,858	41 "

The number of vessels passing over the canal was 1439 in 1850, to 1901 in 1851; an increase of 32 per cent.

The amount of tolls was:—

	1850	1851.	Increase.
On upward freight....	\$2,679	\$3,338	24 per cent.
On downward "....	3,539	4,449	28 "

These results show a flourishing state of business.

The business on the Morris Canal is increasing. The receipts during the first two weeks of July, were \$7,912 70, an increase of \$955 74 over last year. The company have completed all their ascending planes.

There is a lull in the Philadelphia real estate market and a decline of prices is considered probable. Speculations in lots have been large within the past year.

The following table will show the export of specie from this port for the week ending July 19, and for the year:—

Steamer Hermann, Bremen, five francs.	1,693
" " " German gold	19,829
" " " American gold	308,180
Brig Ambassador, Malaga, five francs...	24,150
Schooner Nassau, " " "	10,000
Steamer Africa, Liverpool, American gold	1,000,542
Ship Havre, Havre, American gold	105,000
Brig Augustina, Bolivar, Mexican dollars	9,000
Brig Hetty, Port au Prince, American gold	2,000
Steamer Baltic, Liverpool, American gold	644,000
Steamer Baltic, Liverpool, sovereigns...	65,000

Total, July 12 to July 19.....\$2,189,364
Previously reported.....19,753,687

Total for 1851.....\$21,943,051

The market at the second board was unchanged from the morning. There is literally no business doing, and each day's account is almost a repetition of the day before.

Custom Receipts.—The following is a statement of revenues received at the principal ports for the year ending 30th June, 1851:—

New York...\$31,756,199	St. Louis....\$213,832
Boston.....6,577,540	Cincinnati...105,191
Philadelphia...3,667,838	New Haven..102,159
Baltimore....1,047,278	Mobile.....76,184
New Orleans..2,296,636	Louisville....66,572
Charleston...600,712	Oswego.....91,557
Portland.....209,030	Richmond....70,235
Savannah....208,994	

The new fiscal year promises even a larger revenue than the last. Thus New York begins the first week of the month with about a million, Philadelphia with \$200,000, Boston with \$187,000, &c.

Morris Canal.—The receipts of the Morris Canal company for the week ending July 19th, 1851, were \$4,412 91, against \$3,004 96 in the corresponding week of last year. Increase, \$1,407 95.

Erie Canal.—The amount received for tolls on all the New York State Canals during the 3d week in July, is.....\$101,394 61
Same period in 1850.....75,718 52

Increase in 1851.....\$25,076 09

The aggregate amount received for tolls from the commencement of navigation to the 22d of July inclusive, is.....\$1,399,631 45
Same period in 1850.....1,135,132 10

Increase in 1851.....\$264,229 35

The Evening Journal gives the annexed statement of the quantity of flour, wheat, corn and barley, left at tide water during the 3d week in July, in the years 1850 and 1851, as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1850....	24,598	89,872	49,128	2,290
1851....	92,716	120,315	340,207	2,854

Increase. 2,844 71,187 104,048 564

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 22d July, inclusive, during the years 1850 and 1851, is as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1850....	785,418	307,435	1,733,537	129,091
1851....	1,370,609	789,692	3,834,071	107,485

Inc.... 585,101 482,257 2,100,534 dec.21,606

By reducing the wheat to flour, the quantity of the latter left at tide water this year, compared with the corresponding period of last year, shows an increase of 681,642 bbls. of flour.

The following is a statement of the amount of duties paid at the Custom House, Boston, on merchandise imported in the British North American steamers:

The first steamer (Britannia) entered July 20th, 1849, duties.....	\$9,158 00
For 8 trips in 1850, and duties.....	2,908 99
21 " 1841.....	73,809 23
17 " 1842.....	120,974 67
20 " 1843.....	640,572 05
20 " 1844.....	916,198 30
20 " 1845.....	1,022,992 75
20 " 1846.....	1,054,731 75
20 " 1847.....	1,199,970 78
22 " *1848.....	649,178 50
22 " 1849.....	901,708 51
21 " 1850.....	1,322,383 30

\$7,965,449 73

* The New York steamers commenced in 1848.

The number of passengers inward, during

1846.....	1526
1847.....	1848
1848.....	1216
1849.....	1521
1850.....	1487

Total in 5 years.....7598

Annual average.....1494

The number outward averaged about ten per cent. less than the above.

Railway Share & Stock List;

CORRECTED WEEKLY FOR THE

AMERICAN RAILROAD JOURNAL.

NEW YORK AUGUST 2, 1851.

GOVERNMENT AND STATE SECURITIES.

U. S. 5's, 1853.....	101½
U. S. 6's, 1856.....	105½
U. S. 6's, 1862.....	111
U. S. 6's, 1862—coupon.....	113a114
U. S. 6's, 1867.....	116½
U. S. 6's, 1868.....	116½
U. S. 6's, 1868—coupon.....	121½
Land Warrants.....	140a145
Arkansas 6's.....	52a53
Alabama 5's.....	91a92
Indiana 5's.....	82a83
Illinois 6's, 1870.....	65a68
Kentucky 6's, 1871.....	109a110
Massachusetts sterling 5's.....	105a106
Massachusetts 5's, 1859.....	100½
Maine 6's, 1855.....	103
Maryland 6's.....	102½
Michigan.....	—
Mississippi.....	—
New York 6's, 1865.....	117a118
Ohio 6's, 1860.....	108
Pennsylvania 5's.....	90½a91

RAILROAD BONDS.

Atlantic and St. Lawrence, 6 percent.....	85
Baltimore and Ohio, 1857.....	94½
Boston and Providence 6's, 1855.....	101
Boston and Worcester 6's, 1855, convertible.....	107½
Bost., Concord and Mont. 6's, 1860, mortgage.....	87½
Cheshire 6's, 1860.....	91½
Connecticut River 6's, convertible.....	98
Erie 7's, 1859.....	103
Erie 7's, 1868.....	109½
Erie income 7's.....	95
Hudson River 7's, 1853.....	106½
Michigan Central, convertible, 8's, 1856.....	104½
New York and New Haven.....	100½
Norwich and Worcester, mortgage, 1860.....	80a85
Old Colony, 1851.....	97½
Ogdensburg 7's, 1859.....	97
Portsmouth and Concord.....	80a85
Passumpsic 6's, 1859.....	94½
Rutland 7's, 1863.....	97
Reading mortgage, 1860.....	80
" 1870.....	75
Sullivan, mortgage 6's, 1855.....	80
Vermont Central 6's, 1852.....	96½
" 6's, 1856.....	91½
Vermont and Massachusetts 6's, 1855.....	86½

RAILROAD STOCKS.

[CORRECTED FOR WEDNESDAY OF EACH WEEK.] July 23, July 30.

Albany and Schenectady.....	96½	—
Atlantic and St. Lawrence.....	55a60	—
Androscoggin and Kennebec.....	40a45	—
Boston and Maine.....	103½	103
Boston and Lowell.....	110½	—
Boston and Worcester.....	104	100½
Boston and Providence.....	88a89	85½
Bost., Concord and Montreal.....	40	—
Baltimore and Ohio.....	74	—
Baltimore and Susquehanna.....	34	—
Cheshire.....	54½	—
Cleveland and Columbus.....	—	—
Columbus and Xenia.....	—	—
Camden and Amboy.....	—	—
Connecticut River.....	68a70	—
Delaware and Hudson (canal).....	—	—
Eastern.....	98	95
Erie.....	83½	76
Fall River.....	95	91½
Fitchburgh.....	—	109½
Georgia.....	—	—
Georgia Central.....	—	—
Harlem.....	73½	68½
Hartford and New Haven.....	126½	—
Housatonic (preferred).....	52	—
Hudson River.....	75	—
Kennebec and Portland.....	50a55	—
Little Miami.....	—	—
Long Island.....	16½	15
Mad River.....	—	—
Madison and Indianapolis.....	96	—
Michigan Central.....	103½	103½
Montgomery and West Point.....	—	—
Michigan Southern.....	—	—
Manchester and Lawrence.....	95½	89
Morris (canal).....	16	15½
New York and New Haven.....	114	—
New Jersey.....	133	—
Northern.....	69	—
Nashua and Lowell.....	107½	—
New Bedford and Taunton.....	111	—
Norwich and Worcester.....	56½	53
Norfolk County.....	18a20	—
Ogdensburg.....	35½	32½
Old Colony.....	67½	66
Passumpsic.....	80	—
Pennsylvania.....	—	—
Pittsfield and North Adams.....	95	—
Philadelphia, Wilm'gton & Balt.....	29½	29
Petersburg.....	—	—
Richmond and Fredericksburg.....	—	—
Richmond and Petersburg.....	—	—
Reading.....	56	53
Rochester and Syracuse.....	115	—
Rutland.....	53	47
Stonington.....	44	44½
South Carolina.....	—	—
Syracuse and Utica.....	130	—
Sullivan.....	30	—
Taunton Branch.....	110	—
Troy and Greenbush.....	90	—
Tonawanda.....	—	—
Utica and Schenectady.....	130	—
Vermont and Canada.....	103	—
Vermont Central.....	35	33
Vermont and Massachusetts.....	29	27
Virginia Central.....	—	—
Western.....	102½	103
Wilmington and Raleigh.....	—	—
York and Cumberland (Pa.).....	23	—

Illinois.

Peoria and Ogawaka Railroad.—A contract has been completed by this company with the state of Illinois, by which they have secured the track and right of way of the Peoria and Warsaw railroad, from Peoria to Farmington, on terms highly advantageous to the company. This is a distance of twenty-four miles, and it is said that the grade is in a good state of preservation, and will require comparatively little labor to fit it for the superstructure. The necessary surveys and estimates are to be made immediately; and the opinion is expressed that the work will be conducted with such energy as to enable that portion to Farmington to be in actual operation by February next.

Raleigh and Gaston Railroad.

We learn from the Petersburg Intelligencer that the citizens of Petersburg have subscribed \$100,000 in the Raleigh and Gaston railroad, which is one-fourth of the sum necessary to re-construct the road. About \$200,000, it is expected, will be obtained from North Carolina, and Richmond and Norfolk are urged to raise the balance, £100,000, between them. The whole sum of \$400,000 must be raised to enable the company to comply with the conditions of the act of Assembly of North Carolina.

For the Railroad Journal.

Marietta and the Hempfield Railroad.

I perceive that the newly discovered connection between the Cincinnati and Belpre railroad and the Hempfield railroad, is just at this time exciting much attention. In your Journal of the 19th inst. is an article upon the subject, which gives the *Philadelphia* version of the story—I beg leave to offer the *Baltimore* version, which you invite at the close of your paragraph.

The Philadelphia statement of distances is as follows:—

	Miles.
1st. From Athens to Tygart's Valley bridge.....	177
From Tygart's Valley bridge to Baltimore.....	283
From Baltimore to Philadelphia.....	98
Total from Athens to Philadelphia via Baltimore.....	558
2d. From Athens to Greensburg.....	189
From Greensburg to Philadelphia.....	325
Total from Athens to Phil. via Greensburg.....	514

Difference in favor of the Northern or Hempfield route..... 44

This result is entirely erroneous, and I correct it as follows, in details; but, as much of the ground has not been surveyed on either route, we must resort to such means of estimation as are within our reach, for the portions as measured by instruments.

Inverting the order of the above distances and proceeding from east to west.

First.—From Philadelphia to Baltimore—road completed and in use.....	98
From Baltimore to Cumberland, do. do.....	179
From Cumberland to Tygart's Valley river, at mouth of Three Forks Creek, located and under construction.....	101
From mouth of Three Forks to Parkersburgh—air line 86, and ¼ for increase.....	115
From Parkersburgh to Athens—air line 28½ and ¼ for increase.....	36
Total, Phil. to Athens via Baltimore.....	520
Second.—From Philadelphia to Greensburg, partly in use and partly located.....	325
From Greensburg to Wheeling—air line 62 miles and ¼ for increase.....	83
From Wheeling to Marietta—partly by survey and partly by measurement on large map, also by general admission.....	80
From Marietta to Athens—air line, 34 miles, and ¼ for increase.....	42

Total from Philadelphia to Athens via Hempfield and Marietta..... 530

Difference in favor of Parkersburgh and Baltimore..... 1

Which by adopting the knobly cut off near Cumberland, for the through business, will be increased to eleven miles.

The only disputable part of the above distances will be the unsurveyed sections, amounting on the Parkersburgh line to 114½, and on the Hempfield route to 154½ miles of air line. The uncertain part of the Hempfield and Marietta line is thus 40 miles longer than that of the Parkersburgh line, and there is so much more room for speculation and mistake about it.

The country east of the Ohio river between the mouth of Three Forks and Parkersburgh is, at least as favorable for directness of line as that between Greensburgh and Wheeling; and whatever rate of increase on the air line is allowed in the one should be in the other. The above estimate of 83 miles between those points corresponds also with that of Mr. Knight's reconnaissance. The same may be said of the country west of the Ohio, between Parkersburgh and Athens, compared with that between Marietta and Athens. But if the estimated increase of distances upon the air lines be too much, or too little, it will change the results of the comparison but slightly, and I am confident not unfavorably to the Parkersburgh line.

How different is this result from that of the party who makes out the Hempfield and Marietta route to be 44 miles shorter than the Baltimore and Parkersburgh—stretching the distance from Athens to the Tygart's Valley river, 25 miles, and thence to Baltimore 3 miles, making 28 miles—while on the other route he shortens the distance from Athens to Greensburgh 16 miles, making the 44 miles of error thus exhibited. The grades, however, of the two lines are, he asserts, to increase this erroneously assumed difference of 44 measured miles, to the full extent of the difference (54 miles) between it and the whole distance of 98 miles between Baltimore and Philadelphia, so as to make Philadelphia virtually as near to Athens as is Baltimore. In other words, Philadelphia is nearer to Athens via Marietta and Hempfield, than she is via Parkersburgh and Baltimore, by 44 miles of measured distance, and Philadelphia by the Hempfield road is as near to Athens as Baltimore in equated distance. That is, the grades of the Hempfield route to Philadelphia are better than those of the Parkersburgh route to Baltimore, by 54 measured miles.

And how is this proved? Not by any detailed comparison of ascents and descents upon the entire line, on both routes, or by any professional demonstration of the effect of their grades upon the expense of motive power, &c., but, as it may be supposed, by allusion to the higher grades which prevail on the Baltimore and Ohio railroad in crossing the Allegheny mountains. But these grades occupy but about 33 miles, or 6 per cent. of the whole distance of 529 miles, and the steepest of them (116 feet) does not after all compare so badly with the steepest of the Pennsylvania road, crossing the same mountain, which has at length crept up from 45 to 95 feet per mile. The evidence is yet to be produced that the grades of the Pennsylvania route as an entire system are in any degree superior to those of the Baltimore route. It is too customary to characterize the grades of a line by the steepest grade upon it, without reference to its position or length, or the inclinations and distribution of the lesser grades. This is manifestly wrong, and has grown out of the ungenerous and unthoughtful yea and really impolitic practice too prevalent even among professional men, of lauding their own at the expense of rival lines, as if there were no other way to stimulate communities and encourage stockholders than by showing that the particular line recommended is better than all others.

It so happens that nature has made provision for the greater power required to cross the Allegheny summit, in the vast beds of mineral coal which abound along the slope of that range. No road passing it is so well situated in this respect as the Baltimore and Ohio railroad, which has the coal of the Cumberland basin right at the foot of its longest and steepest grade—a coal now admitted to be far

the best for locomotive engines in America. Before any more clamor against the grades of the Baltimore and Ohio railroad is listened to, let us have a detailed and fair comparison between them and those of the Pennsylvania route, made by some engineer competent to the task, and furnished with the facts.

We see, then, that Philadelphia is nearer Athens, (and consequently nearer Cincinnati) via Parkersburgh and Baltimore, than via Marietta and Hempfield, by 11 miles, and, I assert, with as good a system of grades.

But Philadelphia has also another route to Cincinnati, from Wheeling through Zanesville and Columbus, which will be shorter than the one via Marietta, and which will be soon made without calling upon her for capital. The Central Ohio railroad, already under construction between Zanesville and Columbus, a distance of 58½ miles, will soon be located between Wheeling and Zanesville upon a line probably not longer than 85 miles. The line finished and in use from Columbus to Cincinnati is 119½ miles, and the total distance from Wheeling to Cincinnati will be thus 263 miles.

By the route via Marietta the distance from Wheeling to Athens is above shown to be 122 miles. To this add 59 miles from Athens to Chillicothe (estimated by the air line 47, with ¼ for increase), and 98 from Chillicothe to Cincinnati, (surveyed)—total 279 miles.

The Zanesville and Columbus line from Wheeling to Cincinnati will thus be 16 miles shorter than the Marietta and Chillicothe line. But there is still another line, the Zanesville, Lancaster, Circleville and Wilmington line, upon which the distances are estimated (by the air lines with suitable allowance for increase according to the character of its several sections) to sum up a total of 256 miles.

The Zanesville and Circleville line from Wheeling to Cincinnati will thus be 23 miles shorter than the Marietta and Chillicothe line.

Finally, comparing the distances between Cincinnati and Philadelphia, upon the four several routes above indicated, we have the following:—

Philadelphia to Cincinnati—	Miles.	Difference.
Via Hempfield and Marietta...	687	
" Baltimore and Parkersburgh...	676	11
" Hempfield and Columbus...	671	16
" " and Circleville...	664	23

The Marietta route being thus 11 miles longer than the longest, and 23 miles longer than the shortest of the three lines with which it must compete,—what inducement then is there for Philadelphia to furnish capital to make it? Better help the substantial Central Ohio than the chimerical Marietta scheme. As a through line it is evident the latter must be worthless to Philadelphia, and equally so as a means of securing the trade of Southern Ohio, which belongs properly to Baltimore, nearer to it than Philadelphia by 98 miles upon the shortest route that Philadelphia ever can get, which is the line through Baltimore.

From the above schedule of distances, the accuracy of which I am confident, the lines as they will be constructed will confirm [the frequent speculations of interested parties notwithstanding], it will be seen that Philadelphia will be nearer to Cincinnati by the Hempfield and Columbus line than by the Baltimore line only five miles, and by the Hempfield and Circleville line, only twelve miles. It may well be doubted whether this last line will

be shortly made, [although chartered and also subscribed for in part], to save a distance of but seven miles in one of some 260 miles; and to effect which the construction of about 135 miles of new road would be necessary. But suppose this line [the shortest possible from Philadelphia to Cincinnati,] be constructed, and the worst disadvantage that the Baltimore route will have to contend with is *twelve miles of distance upon a line of nearly seven hundred miles*. Whether the "local attractions" of Baltimore and Washington will not be an over match for this trifling difference of distance, events will show. No rational man has an idea that either route will do the whole business of the west, which will be shared by these and several other lines.—All that Baltimore asks is to be allowed her own proper distance; for if the various adverse interests are to be believed, she is to be entirely deprived of all participation in the trade and travel of the great west by the all-absorbing power and attraction of her northern rivals.

A word in conclusion upon the subject of the capital required for the respective lines above described from Athens eastward:

The line from Athens to Tygart's Valley river is made to measure 177 miles, and to cost at \$30,000 per mile.....	\$5,310,000
While the Marietta and Hempfield line is made to measure 189 miles, and to cost at \$25,000 per mile.....	4,725,000

Making a difference in favor of Marietta and Hempfield of some.....

\$586,000

But this is all mere speculation and entirely unfounded upon the true state of the facts and probabilities. The average cost per mile of the two lines may not perhaps materially differ, as the probable advantage of the Marietta route in running along the river for 80 miles will be fully counteracted by the heavy expense of the Hempfield line of 83 miles, and of the Athens and Marietta line of 42 miles over a very broken country. The Athens and Parkersburgh line of 36 miles would occupy for some 30 miles the valleys of the Hocking and Ohio rivers, and the Parkersburgh and Three Forks line would for the greater part of its length be upon easy valley ground. But we will assume the lines to average the same cost per mile, and take the lowest rate, then the amount will stand thus:—

Athens via Parkersburgh to Tygart's valley river, 151 miles at \$25,000....	\$3,775,000
Athens via Marietta and Wheeling to Greensburgh, 204 at \$25,000.....	5,125,000

Difference in favor of Parkersburgh line.....

\$1,350,000

Instead of \$585,000 against it—so that to the error of 44 miles of distance must be added one of \$1,935,000 of capital, made by the Philadelphia authority.

The preceding case present a fair view of the probable facts of the case. They are open to discussion. Let them be disproved if they can be, by dispassionate argument and substantial facts—not by unsupported assertions and abusive clamour.

I agree with you Messrs. Editors in the assumption you express in the close of your paragraph, that "the people of southern Ohio are likely to have a choice of markets between Baltimore and Philadelphia," and I add that Baltimore will always be their first choice, as they must reach Philadelphia through her, and not by the Marietta and Hempfield, or any other possible or conceivable route. The people of Chillicothe will do well to consider

the facts above presented, before they entangle themselves inextricably with a scheme of route that must prove a failure. Let them spend all their means and energies to reach *Parkersburgh*, and they may prevent the construction of a line [for which there is an independent charter], from Cincinnati to that place, which will leave her many miles to the north and probably give the shortest and best line across Southern Ohio. For the construction of this line capital will be forthcoming in due time, if the interests involved should demand it.

BALTIMORE.

July 28th, 1851.

"Air Line" Route to Boston.

The New York and Boston railroad company, as we learn from a pamphlet recently issued by them, which gives full information with regard to their prospects, have procured all the charters necessary to make an unbroken line of railroad over the direct route from New Haven to Boston, terminating at the foot of Summer street, and have put the entire control of the line under one board of directors.

The *Boston Journal* contains an abstract of the pamphlet above mentioned, which we subjoin:—

The proposed route is as follows:—Commencing in Boston at the foot of Summer street, the road follows a direct line to South Dedham under the Midland charter, crossing the Old Colony and Providence railroads in its course. At South Dedham it intersects the Norfolk county railroad, which is held by the New York and Boston railroad company, by virtue of a lease duly executed. Continuing westward on the Norfolk county road, it reaches Blackstone. From Blackstone it proceeds westward to the east line of the state of Connecticut, under authority of the charter of the Southbridge and Blackstone railroad, which charter is now merged in the New York and Boston railroad charter, by joint stock. It then continues westerly under the last named charter four miles, to an intersection of the Norwich and Worcester railroad.

From the point of intersection crossing the Norwich and Worcester, the proposed road runs in a south-westerly direction about twenty-eight miles, to Willimantic. At this point it intersects and crosses the New London and Palmer railroad. From Willimantic it continues in a south-westerly direction to Middletown, and thence direct to New Haven, where it will connect with the New York and New Haven road, making a continuous line of railroad from New York to Boston on the most direct and feasible route.

At Blackstone a junction is made with the Providence and Worcester road, making an easy communication with the towns upon the line of that road. At Thompson the road will intersect with the Norwich and Worcester railroad, where a great connection will be made, similar to those at Groton and Worcester. From this point railroads will diverge to New Haven, Norwich, Boston, Millbury, Worcester, and Southbridge. From this place a road is soon to be extended through Southbridge and Brimfield, to an intersection with the Western railroad at Palmer, sixteen miles from Southbridge, and eighty-two miles from Boston, by the Western and Boston and Worcester railroads, and about 80 miles from Boston by way of Blackstone. At Willimantic it intersects the New London and Palmer road, to which it will give a most important outlet to Worcester and Boston, and all the eastern portion of New England, and for its middle section to New York, and will add, it is believed, greatly to the value and usefulness of that road.

At Willimantic it also touches the eastern terminus of the Hartford, Providence and Fishkill road, as at present constructed, giving to that a direct communication with Boston and other parts of New England. When the road from Willimantic to Providence is constructed, it will add another valuable feeder to the proposed road, and save to the New York and Southern traffic sixteen miles, over the route by Hartford. At New Haven it will meet the contemplated road to Danbury and Fishkill, on

the Hudson River, for which a charter has been obtained. By this route the distance from Boston to the eastern terminus of the great Erie railroad, is more than twenty miles shorter than the route proposed by the Providence and Hartford company, with grades and curves much easier, and it is believed this route will be taken for the great middle railroad, and thereby combine the Southern and Western travel from Boston to New Haven, where it will divide. By this arrangement, the Western travel, designed for the Erie railroad will pass over the entire length of the New York and Boston railroad.

The distance from Boston to New Haven by the proposed road, computed from reliable surveys, is about 133 miles, about 100 of which are yet to be constructed. It is proposed to build the road in the most substantial manner, the grading to be wider than usual and thoroughly drained in all its cuts. The superstructure will consist of good clean gravel, of sufficient depth to prevent frost from penetrating through, to heave the road bed and displace the rails. Ties of extra length and size will be required, with a rail of the most approved pattern, and heavier than any known to be used in New England. No grade will have a greater inclination than 40 feet per mile, except, perhaps, a short distance near Middletown, and there will be no curve of less radius than 2,500 feet. The road is to be constructed in every respect to insure the greatest speed and safety.

The cost of the road, as estimated by the several engineers on the different sections of the routes surveyed, is as follows:—

Blackstone to New Haven	\$2,500,000
Midland road from South Dedham to Boston	474,000
Total	\$2,974,000

The Norfolk county road is to be held by lease, at an annual rent of \$10,000 over and above one half of the gross receipts of that road from its local earnings.

Books for subscription to stock will soon be opened, and as soon as one million of dollars are subscribed, that part of the road between Blackstone and New Haven will be put under contract, and the work commenced at once. The enterprise is in the hands of intelligent energetic men, who are confident of entire success.

New Model for Vessels.

A model of a novel character has been invented recently by Mr. Darius Davison, of this city, the main feature of which is the extension of so much of the bow and stern of a vessel as is liable to be submerged, without any corresponding extension in the upper frame. The addition at either end is in the proportion of one third to the length of the main body of the craft; and this change of form is accompanied by a slight change in the body of the vessel. The advantages thus proposed to be gained are several; the lightening the draught of a vessel by displacing its weight of water at the lowest possible point, the lessening the resistance of the water at the bow through which it cleaves, together with lateral friction by the means of more gently running lines, consequent on great length, and the obtaining of fuller support to the stern, now left unsupported when a vessel is mounting a wave, which occasions a proportionate depression at the bow, and increased resistance and delay. According to Mr. D.'s calculations, the difference between the draught of a vessel of a given tonnage built on this plan, and another of a similar tonnage after the most improved model now in use, would be at least one-fifth. As to accommodation he secures great breadth of beam in proportion to the length of the vessel.

In addition to this, Mr. Davison has made what he considers an improvement in the generating of steam, and in the propelling apparatus, which latter will in due time be made public. It is stated that Mr. D. is making arrangements to build a boat on

this plan, to run on the Hudson River early next season, and he confidently asserts that his vessel can run the distance between New York and Albany in five hours, being at the rate of 30 miles per hour; and that a vessel constructed, modeled, and propelled on this plan for the ocean, can be run at the rate of 400 miles a day, or from New York to Liverpool in 7½ days, all of which he claims he is prepared to demonstrate both theoretically and practically, as *absolutely certain*.

His plans will soon be laid before the public in a general way, when an opportunity will be afforded to all to judge of their practicability and importance.

The Bridge at Rouse's Point.

The distance across the Lake at this place is about five thousand feet, and the two wings of the bridge from the New York and Vermont sides are now nearly completed. A space of two hundred and fifty feet in the channel is to be left, in accordance with a recent act of the New York Legislature, for the accommodation of navigation. To take the cars across this space, an enormous boat has been built, whose length is about three hundred feet, and it is wide enough to lay two tracks upon its deck. This boat is to be moved by a stationary steam engine, which will place her in any position desired, by means of chain cables which pass around a drum on the boat, and sink to the bottom of the lake so as not to interfere with navigation. The ebb and flow of the tide would seem to interpose an obstacle to this communication, for the bridges are not made to rise and fall to accommodate the tide, as are the platforms on our ferry-slips. But to overcome this difficulty, rails are to be constructed with joints and hinges, that they may be raised or lowered as occasion may demand. While most of the cars are on the level bridges, a slight elevation or depression of the rails, to accommodate the tide, will have but a small effect in retarding or hastening the train. The space occupied by these elevated or depressed rails will be short, and when the cars have passed over this place, they will again find a level on the boat, so that but a few cars will be going down or rising up while the rest of the train is upon a level either on the bridge or on the boat. When the train has passed over, this long boat can be removed by the engine and cables into some slips prepared for that purpose, and the navigation of the lake will be left free.

Periodical Rise and Fall of Lake Superior.

There is a periodical rise and fall in the waters of this lake, well known to masters of vessels and others who live at ports on its shores, and to account for which, many theories have been advanced. The water commences rising above or below the Ste. Marie Falls, in June every year, and continues to rise very gradually till the last of August, it then slowly falls till the following May, at which time it is at its lowest ebb. The highest regular flow is not more than three or four feet. The most plausible explanation that we have seen is the following:—During the winter season there is no rain in the region of the lake, it being situated in a high northern latitude; and hence, while its supplies are nearly all cut off, the rapids of the Ste. Marie are constantly lessening its volume. The rains commence and snow begins to melt about the 1st of April, and the immense basin of Lake Superior becomes gradually filled, faster than its outlet suffers the water to escape. Thus the great extent of the lake both prevents a sudden rise, and serves to prolong it after the immediate cause has been removed.

Mining Intelligence Association of Lake Superior.

A meeting was held at Eagle Harbor on the 11th ult., of persons interested in copper mining, who formed an association under the above title, the object of which is to circulate *reliable* information concerning the mineral resources of our country, to represent truly the various stocks which are held in the market, and to prevent as far as possible, the introduction of fancy or worthless stocks. Samuel W. Hill, Esq., of Eagle Harbor, was chosen President of the association, and Marquis W. Kelsey, of Eagle River, Secretary. S. W. Hill, M. W. Kelsey and Wm. H. Stevens were chosen Directors.

Blake's Patent Fireproof Paint.

This paint in a few months after applied, turns to *slate or stone*, forming a complete *enamel*, or Coat of Mail, over whatever applied, protecting it from the action of *fire, water or weather*. It has gained such universal credit throughout the country that many have been getting up and endeavoring to push into market (entirely upon the popularity of the genuine,) all kinds of *counterfeits*, and in many instances have succeeded in making persons believe it like Blake's, as the powder nearly resembles his, but upon trial must prove itself entirely worthless. An examination of its true analysis will show at a glance that it cannot be otherwise, containing nearly three-fourths sand, or silica, and only a small proportion of Alumina, (which is very necessary to give the requisite toughness to the paint,) and but very little oxide of iron, the cohesive attraction of which binds the different component parts after the action of the atmosphere has destroyed the oil.

Analysis of the so-called Fireproof Paint at Lanesborough, N. Y., by Dr. Salisbury.

Sand, or Silica,	72.84
Alumina,	5.02
Per Oxide of Iron,	6.40
Oxide of Manganese	14.40

Analysis of the so-called Fireproof Paint at Oneida Castle, N. Y.

Sand, or Silica,	73.06
Per Oxide of Iron,	9.08
Alumina,	11.92

Analysis of Blake's by Dr. Chilton.

Sand, or Silica,	48.15
Alumina,	21.00
Oxide of Iron	18.30

The above comparison shows that the *spurious* is nothing more than common sand stone ground up, and the proportion of the alumina and oxide of iron being so small, it can have no effect in binding and holding the coating on after the action of the atmosphere has destroyed the oil, and of course will turn back to dry sand, and rub or wash off; whereas, Blake's has sufficient silica to give it the necessary hardness, and a large portion of alumina and oxide of iron, which harmonize and combine in their natural state, forming a hard tough covering, which has now been tested more than seven years, and where first applied is like a stone; whereas, the *counterfeits* have not yet been tested much over a year.

LOOK OUT FOR FORGERY!

For since the public have become aware of the value of the *genuine* and worthlessness of the *counterfeits*, those having the spurious have found it impossible to sell; some of them, therefore, have commenced forging Mr. Blake's brand and putting it upon the barrels, and sell it as his paint. We understand that Mr. Blake has just returned from Philadelphia, where he found about a hundred barrels of this counterfeit *stuff* in the hands of different individuals, with his brand upon it, and he immediately commenced suits against them, being determined to prosecute not only one who counterfeits his brand, but all who infringe his *patent*, as he now has three suits in the U. S. Court against persons for selling Fire Proof Paint, in violation of his rights. They public may detect these counterfeits from the fact that in the genuine the words "BLAKE'S PATENT FIRE PROOF" are put on the barrels in a circular form, and the word "PAINT" straight; but in the forged brand "BLAKE'S PATENT" is put on straight, and "FIREPROOF METAL-

LIC PAINT" in a circular form. We, therefore, would caution those who wish to get the *genuine article* to be very particular in examining the brand or go directly to Mr. Blake's, at 84 Pearl Street, where they not only can depend upon getting the genuine, but have no fear of infringing any one's rights.

Relative Power of Large and Small Locomotives.

An interesting experiment was tried at Crewe, England, on the 20th of May last, for the purpose of testing the power of the small sized engines used on the northern division of the London and North-western railway, and the large engines used on the southern division of the same line. The point to be decided was, whether one of the large goods engines was better able to work a heavy-goods train than two of the smaller sized engines, the power of the two smaller sized ones being about equal to that of the larger one. The load to be taken up was divided between the two smaller sized engines. One of them took up her load in forty-nine minutes; the other one took up hers in thirty-two minutes; the two together were then put to the same load, which they took up in thirty-five minutes.—The larger engine was then attached to the same load, and occupied an hour and fifteen minutes in taking it up. Now, if the two smaller engines were only thirty-five minutes in taking it up, one of them would have taken it up in seventy minutes or in five minutes less time than the large one; proving, as it were, either that the small engine has more power than the large one, which is impossible, or that the full power of large engines has not yet been brought to bear upon railways.

The loss of power in proportion to the size of the engine, is probably owing to the small hold which the wheels have upon the surface of the rails. The two smaller engines having more wheels, have more surface of rail to bite upon, and consequently more effective power than the larger engine. The obvious remedy for this, in order to bring into action the full power of the large engines, would be to increase the top surface of the rails, and to have them as flat as possible, except the inside edge, which might be rounded off a little to afford play for the flange on the tire of the wheel.

Railways: Their Introduction into Great Britain.

Public railways are exactly coeval with the nineteenth century, for the legislative act authorizing the construction of the Surrey line in 1801, was the first act of parliament of this nature; all earlier railways having been purely private works, chiefly associated with mines or collieries. Cast iron plate rails, fastened on rough blocks of stone, were adopted on the Surrey tramroad, which unites Croydon and Wandsworth, and is nine miles long, including the branch to Carshalton, being of nearly the same length as the first Scottish railway, the Kilmarnock and Troon line in Ayrshire, the act for which was passed in 1808. An outlay of £60,000 was required for the execution of the Surrey line, and the sole motive power employed was horses. Three years afterwards a new locomotive agent of as much, but of very different *mettle* made its modest debut on the railway at Merthyr Tydvil in South Wales. Fresh from the manufactory of Messrs. Richard Trevithick, and Andrew Vivian of Camborne, in Cornwall, the "car without horses, the car without wings," displayed its first performances "with a rush and a roar" undoubtedly, if not with the speed of a dream; but drawing on this first experiment ten tons of iron, and the carriages containing them a distance of nine miles, at the rate of five miles an hour, without requiring a second supply of water. Not content with a private stage, the locomotive ventured into public on the Stockton and Darlington line, between Stockton and Wilton Park Colliery, opened on the

26th of September, 1825; which was the first *public* railway on which steampower was employed; and where it was associated with horse-power, and applied both by locomotive and stationary engines.—This union of agents proved far from harmonious, especially as there was only a single pair of rails, with passing stations; and great delays necessarily occurred. The attention of the scientific and commercial world was now, however, fully awakened to the importance of this new form of power, which had been so successfully applied to navigation. Not only were the Darlington engines of inferior construction, but the field selected for the development of their capabilities was particularly unfortunate, from the steep gradients abounding on that line. Yet the day of triumph was not far distant. Already the "Grand experimental railroad" was more than schemed; for in the year preceding the opening for traffic of the Darlington and Stockton line, the first prospectus had appeared of a company established for the formation of a double railway between Liverpool and Manchester.—They obtained their act of parliament in 1826, despite the determined opposition of the canal proprietors, who had procured the rejection of the Company's petition for leave to bring in a bill the year before. This scheme originated with Mr. William James of London, in 1822, the projector also of the London and Birmingham railway, who influenced Mr. Saunders of Liverpool, commonly regarded as the father of the undertaking, so much in favor of the project, that that gentleman caused a survey of the line to be made at his own expense. A work published in 1820, called "A General Iron Railway," claims however for the author, Mr. Thomas Gray of Leeds, the honor of having founded the existing railway system. Mr. Wilson of Brussels wrote a pamphlet in 1845, explaining the merits of Mr. Gray, who when he presented a copy of his book to Mr. Wilson, said to him in prophetic tones:—"Here is the main spring of the civilization of the world: all distances shall disappear; people will come here from all parts of the Continent, without danger and without fatigue; companies will be formed, immense capital paid and invested; the system shall extend over all countries; emperors, kings and governors will be its defenders; and this discovery will be put on a par with that of printing." The insufficiency of the existing means of transport was most strongly felt at Liverpool, "the greatest thoroughfare in the world," and it is not the least honor of her enterprising merchants that they "with fostering care," as Mr. H. Scrivenor says, "nursed the new-born system at a time when landowners, canal proprietors and others, desired its destruction, and combined to crush the project in its bud. Then it was they shielded it from attack, and drew forth its latent principles, discovered its giant strength, and at much cost of time and money exhibited all its virtues in practical results which finally silenced opposition."

Was ever a great boon offered to mankind which provoked not the opposition of short-sighted selfishness and ignorance? When it was proposed to extend the metropolitan turnpike roads to greater distances, the farmers of the surrounding counties became dreadfully alarmed at the prospect of additional competitors, reduced prices, and resultant ruin. They petitioned parliament against the measure, alleging "that the remoter counties would be able, from the comparative cheapness of labor in them, to sell their produce in London at a lower rate than they could do; and that their rents would be reduced and cultivation ruined by the measure!" How have their sapient predictions been verified? As Mr. Porter says, "The plan has been *beneficial* to them, inasmuch as, by providing for the indefinite extension of the city, it has rendered it a far better market for their peculiar productions." What wonder that such an innovation as railways was strenuously opposed, threatening as it did the coaching interest, and the posting interest, the canal interest, and the sporting interests, and private interests of every variety.—"Gentlemen, as an individual," said a sporting M. P. for Cheltenham, "I hate your railways; I detest them altogether; I wish the concoctors of the Cheltenham and Oxford, and the concoctors of every other scheme, including the solicitors and engineers, were at rest in Paradise. Gentlemen, I

detest railroads; nothing is more distasteful to me than to hear the echo of our hills reverberating with the noise of hissing railroad engines, running through the heart of our hunting country, and destroying that noble sport to which I have been accustomed from my childhood." And at Tewkesbury, one speaker contended that "any railway would be injurious;" compared engines to "war-horses and fiery meteors;" and affirmed that "the evils contained in Pandora's box were but trifles compared with those that would be consequent on railways." Even in go-a-headative America, some steady jog-trotting opponents raised their voices against the nascent system; one of whom [a canal stockholder by the way] chronicled the following objective arguments. "He saw what would be the effect of it; that it would set the whole world a-gadding. Twenty miles an hour, sir! Why, you will not be able to keep an apprentice-boy at his work; every Saturday evening he must take a trip to Ohio, to spend the Sabbath with his sweet-heart. Grave plodding citizens will be flying about like comets. All local attachments must be at an end. It will encourage lightness of intellect. Veracious people will turn into the most immeasurable liars; all their conceptions will be exaggerated by their magnificent notions of distance. 'Only a hundred miles off! Tut, nonsense, I'll step across, madam, and bring your fan!' 'Pray sir, will you dine with me to-day at my little box at Alleghany?' 'Why, indeed, I don't know. I shall be in town until twelve. Well, I shall be there; but you must let me off in time for the theatre.' And then, sir, there will be barrels of pork, and cargoes of flour, and chaldrons of coals, and even lead and whisky, and such like sober things, that have always been used to sober travelling, whirling away like a set of sky-rockets. It will upset all the gravity of the nation. If two gentlemen have an affair of honor, they have only to steal off to the Rocky Mountains, and there no jurisdiction can touch them. And then, sir, think of flying for debt! A set of bailiffs, mounted on bomb-shells, would not overtake an absconded debtor only give him a fair start. Upon the whole, sir, it is a pestilential, topsy-turvy, harum-scarum whirligig. Give me the old, solemn, straightforward, regular Dutch canal—three miles an hour for expresses, and two for ordinary journeys, with a yoke of oxen for a heavy load! I go for beasts of burden: it is more primitive and scriptural, and suits a moral and religious people better. None of your hop-skip-and-jump whimsies for me."

The incredulity and laughter with which Mr. Stephenson's opinions were listened to by Parliamentary Committees concerning the velocity he expected to attain, are well known. He was implored by the Directors who engaged him, not to indulge before these legislators in the visionary schemes, which led him to contemplate the achievement in speed of twelve or fourteen miles an hour, lest he should bring discredit on their enterprise.—He says that he sought England over for a man to support him in his evidence before Parliament, and could find only one man, James Walker; and was then afraid to call that gentleman, because he knew nothing about railways. He had then no one to tell his tale to but Mr. Saunders, who did listen to him and kept his spirits up." But the exigencies of Liverpool inspired her inhabitants with sufficient energy to overcome all obstacles. Certainly there were two canals between that town and Manchester, but they were inadequate for the existing traffic of those emporiums of commerce, which then amounted to more than a thousand tons daily, and would greatly increase with added facilities of transportation. It was estimated that these towns annually consumed not less than a million tons of coals, supplied from the mines of St. Helens; a distance of thirty miles by canal, but which would be reduced one-half by the proposed railway, and effect upon the carriage the yearly savings of £100,000.

Thus stimulated the company's engineers vigorously went to work in June, 1826, conscious that there was no child's play before them. The tunnels to be excavated, and mosses to be drained, the viaducts to be erected, and levels to be sunk, would tax and test to the utmost their ingenuity and skill. Exclusive of tunnelling, the cuttings amounted to nearly 720,000,000 cubic yards, Professor Barlow

tells us, and the embankments to 276,000. Chat Moss, a bog so soft as to be impassable by a pedestrian, except in unusually dry weather, was the first scene of their operations; and a trial of perseverance it proved of no ordinary kind: especially as it was the reverse of a "labor of love," being a difficulty not naturally and necessarily imposed upon the construction of the line, but entailed upon the company by the blind opposition of Lords Sefton and Derby to the course of the original line, recommended by Mr. Stephenson, the chief engineer, which would have traversed a portion of these noblemen's property. Moreover, the compulsory adoption of this inferior line involved the additional evil of a double gradient, a mile and a half in length each way, and rising one foot in ninety-six in both directions.

This is a permanent and most serious disadvantage to the working of the line. It is evident that it is far more important to make a railway level than a turnpike road, as the resistance to the descending tendency of a load on an inclined plane is far greater on the latter road than on the iron one; for as double the impulsive force is required on a smooth macadamized road rising one foot in twelve, to that which would draw the same load on a level line, the rise of only one in two hundred and forty feet on the railway, requires the impulsive force to be doubled; and a nearly quadrupled power on these particular gradients. If the mortification were not sufficiently severe at first, its measure was completed not many months after the opening of the Liverpool and Manchester line; when a second line was contemplated between these towns, which these very lords, "grown wiser than of yore," were willing enough to admit through their grounds; experience having taught the proprietors of land the increased value of property in the vicinity of railways. But there was no help for it then, Chat Moss, the beloved of snipes and Jack-o'-lanterns, must be drained and levelled, although 4½ miles in length, and in some parts especially of almost unlimited capacity for the reception of solids without apparent surficial improvement.—Through this semi-fluid an iron rod would sink by its own weight; and tons upon tons of embankment were absorbed before this yielding morass could be rendered fit for the support of any superstructure.

Night and day, *navvy* and horse worked, but winced not at the pulpy foe. Gradually they gorged with their interminable heapings the last and most insatiable half-mile on the Eastern border; and on May day, 1830, the Rocket engine steamed a carriage full of enterprise across the Moss. The ingenious method by which this difficulty was mainly overcome is thus described by Mr. Ritchie. "As the materials laid down for an embankment, about four feet high, gradually sunk, it became impossible to use either clay or gravel. Recourse was therefore had to the moss itself for the forming of the embankment, which, from its less specific gravity, would not be so liable to sink; and by cutting drains every five yards apart, and laying the moss dry between the drains, it formed an excellent material for the embankment, requiring only four or five times the quantity which would have been used on solid ground. In forming the road on the surface of the moss, drains were first cut on each side of the line, and lateral ones to carry off the water, and by this means the surface acquired tenacity and consolidation. Upon this hurdles, wickered with heath, were laid transversely. Upon these were placed two feet of ballast or gravel, to form the permanent road, and on which the wooden sleepers for the rails were bedded." The Parr Moss, too, was solidified; the Sankey Viaduct, from sixty to seventy feet in height, was erected; the Liverpool Tunnel, through 1,970 yards of moist earth, sand, or sandstone, was completed at a cost of nearly £35,000; and the finishing touch applied to the constructive works of this railway (thirty-one miles in length between the terminal stations) by spanning the Irwell with a noble stone bridge, in September, 1829; the total expense amounting to nearly £740,000.

And now the great question presented itself for the company's solution, of the tractive power to be employed on their completed highway. Three rivals entered the lists—horses, stationary engines, locomotives; but flesh and blood soon withdrew

from a contest with iron; lungs could not compete with boilers; breath stood a sorry chance opposed to steam. Two gentlemen in the direction of the company, accompanied by Mr. H. Booth, made a tour of inspection, and quickly narrowed the question to the rival forms of engine. Messrs J. Walker and J. U. Rastrick, both civil engineers, were next commissioned to make observations and comparisons on the different methods of applying steam power. They accordingly laid two separate reports before the board, advocating the adoption of the stationary steam engine. But Mr. George Stephenson, "the father of the locomotive system," was strongly of a different opinion, and was supported in his views by the majority of the directors, who resolved to attempt the introduction of the locomotive engine; and, therefore, to encourage and stimulate the invention of improvements, of which they deemed this machine to be susceptible, they offered a premium of £500, to be contended for in 1829, for the most approved engine, fulfilling the condition of limitation in weight to six tons (those in use averaging nine tons), freedom from smoke, a capability of drawing at starting three times its own weight, and of travelling seventy miles with that load at a minimum rate of ten miles an hour. Four competitors presented themselves for trial. October the 6th was the day appointed for the struggle, and the selected arena was about two miles in extent, on the eastern side of Rainhill Bridge, the only perfectly level part of the railroad.

London, Newcastle, Darlington and Leith engaged in the noble rivalry: Messrs. Braithwait & Ericson entered the "Novelty" on the lists, the smallest engine, weighing 2 tons 15 cwt.; Mr. Burstall of Leith brought forward the "Perseverance," weighing 2 tons 17 cwt.; the "Rocket," whose "training" was first completed, was supplied by Mr. R. Stephenson of Newcastle, and weighed 4 tons 3 cwt.; and the fourth candidate was the "Sans Pareil," also weighing 4 tons 3 cwt., and constructed by Mr. Ackworth of Darlington.—Every run was a *heat*, certainly, but of course the competitors ran in succession. No spurred and leather-unmentionable rider in this contest lashed his steed. Shovels and pokers took place of whips and rowels; and, instead of melted-down jockeys in rainbow-hued jackets, men smoke-begrimed and fustian-clad governed the reins. But never did a Derby day or St. Leger give birth to so honorable an excitement as prevailed in this salamandrine race. No betting ring was required to give it interest. And who was victor? "Perseverance" for once failed to "overcome all difficulties," and easily yielded the contest to names of greater pretension; while the "Novelty," unfortunately bursting a vessel, was compelled to seek retirement and professional aid. Mr. Ackworth's engine made a gallant show, performing 22½ miles of the course in 1 hour 37 minutes; but the "Sans Pareil," becoming disabled after the same fashion as her metropolitan rival, lost her chance of victory. So the "Rocket" won the field, attaining 29 miles per hour at her greatest speed, and 11½ miles at her slowest pace; accomplishing the whole journey twice at an average rate of twelve nine-twentieths miles per hour, and receiving the premium at the award of the judges, Messrs. Rastrick, Wood and Kennedy.

Virginia Locomotive Car Works.

Wolfe Street and River Potomac, Alexandria, Va.
SMITH & PERKINS, *Proprietors.*

MANUFACTURE

Locomotive Engines and Tenders.

Marine and Stationary Engines and Boilers.

Chilled Car Wheels and Axles.

Patent Chilled and Wrought Slip-tire.

Machinery and Castings generally.

The undersigned having erected very extensive shops, and procured the most modern machinery and tools, are prepared to execute orders for Locomotive Engines, Cars, and Machinery of all kinds, with despatch, and on the most favorable terms.

R. C. SMITH,

Late of the Alexandria Iron Works.

THATCHER PERKINS,

Late Master of Machinery on the Balt. & O. R.R.
July 22, 1851.

Bridges & Brother, DEALERS IN RAILROAD AND CAR FINDINGS, 64 Courtlandt street, New York.

Having established a general Depot for the sale of articles used in the construction of Railroads, Locomotive Engines and Railroad Cars, we would invite your attention to our establishment. We have already in store a good assortment of CAR FINDINGS and other articles used in the trade, and feel justified in saying, that should you desire anything in our line, we can supply on terms perfectly satisfactory, and in the event of your desiring to order, you may feel assured that your terms will be as good as though you were here to make your own purchases.

Among our goods may be found Railroad Car Wheels, Axles, Jaws and Boxes, Nuts and Washers, Bolts, Brass Seat Hooks and Rivets, Window and Blind Springs, Lifters and Catchers, Door Locks, Knobs and Butts, Ventilators and Rings, Car Lamps, Coach and Wood Screws, Jack and Bed Screws and Babbitt's Metal; also Plushes, Damask, Enamelled Head Linings, Cotton Duck for Top Covering in width sufficient without seams, Curled Hair and all other articles appertaining to cars.

Also a new and valuable CAR DOOR LOCK, well adapted to the Sliding Door. This is decidedly the best yet introduced.

LOCOMOTIVE ENGINE LANTERNS, the best article made in the country. Whistles, Gauge and Oil Cocks, Hemp Packing, American, Russian and Italian. We are also agents for Lightner's Patent Journal Box for Car Axles, that invaluable invention, for the economical use and preservation of Car Journals.

Coach VARNISH and Japan of the best quality.

We would also offer our services for the purchase as well as for the sale of goods on commission.—Both members of our firm have had the experience of many years in the manufacture of Railroad Cars, and our Senior was a member of the well known house of DAVENPORT & BRIDGES, Car Manufacturers, Cambridgeport, Mass. With our knowledge of matters pertaining to Railroads, we feel quite confident in giving satisfaction to both buyer and seller, and hope that through assiduity and attention to any business entrusted to our care we shall merit a continuance of confidence and patronage.

BRIDGES & BROTHER.

July 22, 1851.

Lightner's Patent Axle Boxes.

THE Undersigned are Agents for, and offer for sale, *Lightner's Patent Axle Boxes*, for Railroad Cars and Tenders, which have, by thorough experience, been demonstrated to be one of the most valuable improvements ever introduced in Locomotion. The saving effected in oil alone, will in a few months pay the first cost of these boxes, independent of other advantages. They are now in use upon the following, among other roads, viz:

Boston and Worcester, Boston and Providence, Boston and Fitchburg, Nashua and Lowell, Providence and Worcester, Northern, N.H., Cheshire, Manchester and Lawrence, Concord, N.H., Concord and Claremont, Ogdensburg, (Northern, N.Y.) Stonington, New London Willimantic and Palmer, New Jersey Central, New Hampshire Central, Worcester and Nashua, Fitchburg and Worcester, Connecticut and Passumpsic, Lowell and Lawrence, Salem and Lowell, Wilton Branch, Newburyport.

Below will be found the certificates of a number of gentlemen, whose opinions will be good authority in every part of the country.

Office Boston and Prov. R. R.,
Boston, Dec. 28, 1849.

MR. JOHN LIGHTNER,

Sir,—It affords me pleasure to say, that after two years' trial of your boxes, I am fully and entirely satisfied of their superiority over any other pattern we have used. This superiority consists in economy of oil and freedom from "heating." I have tried every pattern of box in use, of any note, and do not hesitate to say, that you have devised one which in every respect combines greater advantages than any other within my knowledge; these advantages are so manifest, that I am fitting up all

our cars with your boxes, as fast as practicable.

Annexed, is a statement of an experiment with your boxes, the result of which may be of use to your interests.

Ten passenger cars, running 72 wheels, fitted up with Lightner's boxes used 41½ pints of Patent Oil, at 50 cts. per gallon, ran 43,099 miles, equal to 5-18 pints per wheel for 43,099 miles. Speed, 30 to 40 miles per hour.

Very respectfully yours,

W. RAYMOND LEE, Supt.

I have examined the above statement of Mr. Lee, and fully concur with him in his opinion of the superiority of Lightner's box.

GEORGE S. GRIGGS,

Supt. Machine Shop B. & P. R. R.

Boston, July 26, 1849.

This is to certify that J. Lightner's axle boxes for railroad cars and locomotive tenders, have been in use on the Boston and Worcester railroad one year, and I unhesitatingly pronounce it, in my opinion, the best and most economical one in use, requiring less oil, of easy application, not susceptible of derangement, as in most kinds in use. When requiring repairs or renewal, the same may be done in one-fourth of the time usually occupied for that purpose. The box requires oiling not oftener than once a month—is kept quite free from dust, and consequently wears much longer than those generally in use.

D. N. PICKERING,

Supt. Motive Power, B. & W. R. R.

Office of Boston Locomotive Works,
December 12th, 1849.

The Boston Locomotive Company have been using J. Lightner's patent axle boxes under the tenders of their engines for several months, and find them more highly spoken of by the railroad companies that have used them in regard to economy in the use of oil, their durability and their ease of adjustment, than any other boxes which they have used. We therefore do not hesitate to recommend them to all railroad companies.

DANIEL F. CHILD,

Treas. Boston Locomotive Works.

Taunton Locomotive Works,
Taunton, July 7, 1849.

MR. H. F. ALEXANDER,

Dear Sir,—Your favor of yesterday came to hand in which you ask what success we have met with, in using Mr. Lightner's patent box for cars, engines, &c.

We have put it in use on the Boston and Providence railroad, New Bedford and Taunton Branch railroad, Central railroad, N. J., Norfolk County, Rutland and Burlington, and as yet we have not had one complaint from them; and from what we have used of it, and witnessed, we do not hesitate to say that it is superior to anything in use for that purpose. It is simple in its construction, and easy of access, and the reservoir is held close to the shaft, and the oil and journal is perfectly secure from dust; they will run from four to six weeks without replenishing the oil. The brass in the box is changed very much easier than by any other plan that we have seen.

Very resp. yours,

W. W. FAIRBANKS, Agent.

Office Providence & Worcester R. R. Co.,
Providence, Dec. 17th, 1850.

H. F. ALEXANDER, Esq.,

Sir,—The "Lightner patent boxes" for cars and locomotives have been in use under a portion of the passenger cars and engines of this company for upwards of two years, and have given very great satisfaction.

Though combining many excellent qualities, their great superiority consists in the economy of oil.

The result of experiments upon this road shows the consumption of oil by the use of this box, to be not more than one sixth part the quantity consumed by the use of the common box.

With the common box, eight passenger cars, 64 wheels, running 90 miles per day, consumed in 12 months 520 gallons of oil, being an average of 8½ gallon per wheel per annum.

With the Lightner box the same cars running the same number of miles per day, during the same space of time consumed 73½ gallons of oil, being an average of 1½ gallon per wheel per annum.

So manifest are its advantages over any other box used by this company, it is intended to place it under all our cars as soon as practicable.

Besides the saving of oil, as they afford complete security from dust, we think them more durable than any other box in use.

Another advantage resulting from the use of this box is, cars run more easier than with the common box. The saving in fuel which it would effect, would of itself, we think be a sufficient inducement to use this box in preference to any other known to us.

Very respectfully,

ISAAC H. SOUTHWICK, Supt.

JOHN B. WINSLOW,

Supt. Machine Shop, P. & W. R. R.

Cambridgeport, April 5th, 1851.

H. F. ALEXANDER, Esq.

Sir,—This may certify that I have been engaged in the manufacture of railway cars since 1834, and have built for the different railroad companies cars of all descriptions to the amount of three millions of dollars, and have used on the above cars all kinds of journal boxes, and find that none give better satisfaction than the "Lightner patent box," both on account of the saving of oil and the arrangement for taking out and re-placing the composition by means of the sliding key, and other conveniences which no other box possesses.

Yours respectfully,

CHARLES DAVENPORT.

Worcester, March 17th, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—This is to certify that I have been for some years past engaged in building cars, and that I have tried most, if not all of the patent boxes, and have found Lightner's patent superior to all others as far as the saving of oil is concerned, also the ease with which they are fitted and exchanged in case they get out of order.

For the last three years, I have put them under all of the cars I have built, and in every instance they have given the most entire satisfaction.

Yours truly,

OSGOOD BRADLEY.

Office Union Works, So. Boston,
May 23d, 1851.

This certifies that I have applied Mr. J. Lightner's patent axle boxes to my locomotives and tenders for the past two years. I consider them superior to all others,—economical in their use, and possessing many important advantages not found in any other boxes.

SETH WILMARTH.

Office 15, R. R. Exchange, Boston,
June 1, 1851.

This is to certify, that we have known the success of Lightner's patent journal boxes upon various roads in New England the past three years, and have been led to examine their peculiar construction.—We are well satisfied of their merits, and have adopted them upon our small gravel cars, and take pleasure, as we ever have done, in recommending their use upon all roads where we are employed in the construction.

GILMORE & CARPENTER,
Contractors.

Amoskeag Manufacturing Co. Machine Shop,
Manchester, May 31, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—We are using the Lightner box on all the engines and tenders we build, and we are satisfied that it is the best box in use, and recommend the same to all those who purchase engines at our works.

Yours respectfully,

O. W. BAYLEY, Agt.

This is to certify that the Fitchburg railroad company having become satisfied of the superiority of J. Lightner's patent Axle Boxes for Railway Cars and Locomotive Tenders adopted the same,

and are bringing them into general use upon their road.

One year's experience with the above improvement, has fully convinced me that there has never been anything offered to the public for that purpose which possess such intrinsic value; in fact, this is an improvement which seems to overcome all the difficulties found in all the various kinds now in use. It possesses very many advantages over all others: Some of which are [first] the first cost is much less than that of most boxes in use. [Secondly] 75 per cent is saved in oil; one gill applied to each Journal once a month, or one quart to an eight wheel car, is all these boxes require per month [Thirdly] no dust can gain access to the Journal, which is constantly lubricated with clean oil; hence the saving in repairs of Journals and composition bearings, is a matter of importance. [Fourthly,] its construction is truly simple—not complicated, having nothing liable to become loose by constant and severe service. [Fifthly] for convenience there is nothing which approaches this improvement.—The composition bearings may be removed from the Journals of an eight wheel car, by one man, and returned, or duplicates, in twenty minutes, while under the car: the same would require two men, at least half a day with other boxes in use.—The trucks and wheels using these boxes, are free from oil and dirt, usually seen upon all railroad cars, at great expense to the corporation.

NATH'L JACKSON.

Supt. Car Building and Repairs, F.R.R. Co.

Boston, March 9, 1849.

I hereby certify, that I have examined a box for Car Journals, invented by Mr. Lightner of Roxbury, Mass, and I have thought so well of it that I have adopted it on our railroad, I have known of its success on other roads.

S. M. FELTON,
Supt. F. R. R.

Office of the Central R. R., N. J., }
Elizabethtown, May 1849. }

H. F. ALEXANDER, Esq.,

Dear Sir:—Your favor, [wishing to be informed how we liked Lightner's patent axle boxes for R.R. Journals,] has been duly received; in answer we would say, we have used the boxes on Locomotive tenders one year, more or less, and on our cars some six months. I consider them the best boxes in every respect, I have ever used, or even seen used on any other roads—for safety, durability and the economy pertaining to all the details connected with the boxes and Journals of R. R. Car wheels; and we shall adopt them upon this road.

Yours Respectfully,

JOHN O. STEARNS,
Supt. Central Railroad Co., N. J.

Manchester, N. H., Nov. }
1st, 1850. }

H. F. Alexander, Sir,

I have used "Lightner's Boxes" under all the Cars of the Manchester and Lawrence railroad, and feel no hesitation in saying that I think them to be the best boxes now in use.

Yours, &c.,

THEODORE ATKINSON, Agent.

Cheshire R. R. Office, Keene, }
March 5th, 1851. }

Mr. H. F. Alexander,

Sir,—Lightner's Patent Boxes have been used on the Cheshire R. R. about a year, and have given the highest degree of satisfaction.

All the Passenger Cars now in use, and a considerable number of Merchandize Cars are furnished with them, and they will take the place of the Common Boxes on all the cars as fast as circumstances will permit.

Very Resp't.

L. TILTON,
Supt. Cheshire R. R.

Boston and Worcester Railroad, }
Boston, April 1st, 1851. }

H. F. Alexander, Esq.,

Dear Sir,—Lightner's Patent oil saving box for railroad cars, has been adopted by this corporation; we are taking out the common and substituting the

Lightner's at the rate of fifty boxes per month; it will soon take the place of all others, as it is decidedly preferable to any heretofore used by this corporation.

G. TWITCHELL, Supt.

Statement of amount of oil used on 32 8-wheel freight cars, on the Boston and Providence Railroad (with Lightner's Boxes) from March 10, 1849, to February 27, 1851, and upon 12 8-wheeled passenger cars from September 8, 1849, to February 27, 1851.

FREIGHT CARS.

Amount Oil.	No. months.	Amount Oil.	No. months.
1.—21 pts.	10	17.—23½ pts.	14
2.—19 " "	6	18.—23½ " "	11
3.—25 " "	13	19.—36 " "	21
4.—18 " "	7	20.—22 " "	10
5.—22 " "	12	21.—38½ " "	24
6.—24 " "	13	22.—29 " "	23
7.—20 " "	11	23.—35½ " "	23
8.—21 " "	11	24.—37½ " "	23
9.—23½ " "	10	25.—51 " "	23
10.—21 " "	9	26.—31½ " "	24
11.—20 " "	9	27.—28½ " "	23
12.—21½ " "	11	28.—36 " "	23
13.—19 " "	8	29.—50½ " "	24
14.—25½ " "	17	30.—50 " "	23
15.—20½ " "	10	31.—41 " "	23
16.—31 " "	18	32.—39½ " "	23

Total, 925½ pts. 510

PASSENGER CARS.

Amount Oil.	No. months.	Amount Oil.	No. months.
1.—19½ pts.	18	7.—30 pts.	18
2.—25½ " "	18	8.—25½ " "	18
3.—33½ " "	16	9.—29 " "	18
4.—19 " "	15	10.—46½ " "	17
5.—15 " "	15	11.—9 " "	9
6.—22 " "	18	12.—65½ " "	17

Total, 340 pts. 197

Averaging 1 4-5 pints of oil for freight, and 1 7-10 for passenger cars per month only!

All orders and enquiries promptly attended to.

BRIDGES & BROTHER,

No. 64 Courtlandt st., New York.

July 25, 1851.

To Boiler Makers, Engineers, etc., etc.

PATENT LAP-WELDED IRON TUBES,

Manufactured by the

BIRMINGHAM PATENT IRON TUBE CO.

UNDER

PROSSER'S PATENT,

from one and a quarter to eight inches in diameter.

These tubes are well known for their superiority over all other descriptions for Locomotive, Marine and other Steam Engine purposes, for which they are used very extensively in Great Britain and on the Continent of Europe.

For sale in quantities to suit purchasers, by

WILLIAM BIRD & CO.,

44 Wall st., New York.

July 26, 1851.

To Railroad Companies.

THE undersigned has discovered and patented an imperishable, cheap, and sufficiently elastic substance, to be introduced between the sill and rail, so that the stone sill can be used in place of the wooden sill: entirely overcoming that rigidity where the rail is laid directly on stone. Address

J. B. GRAY, Philadelphia.

July 10, 1851.

To Contractors.

Peru and Indianapolis Railroad.

PROPOSALS will be received at the office of the Peru and Indianapolis Railroad, in Noblesville, until the evening of the 13th of August next, for the Grading of the line of the above road from Noblesville to Peru, a distance of fifty miles. Also the masonry for Bridges over the Wabash, Big Pipe and White Rivers.

The proposals are to be addressed to W. J. HOLMAN, Esq., Chief Engineer, at the Company's Office, where plans and specifications of the work may be seen. Payments will be made monthly in cash, reserving 15 per cent. till the contracts are completed.

Indianapolis, July 12, 1851.

European and North American Railway.

THE undersigned, the three persons first named in the first section of an act passed by the Legislature of Maine, and approved the twentieth day of August last past, entitled "An Act to incorporate the European and North American Railway Company," and being specially authorised therefor in and by said act, hereby give public notice that, for the purpose of receiving subscriptions to the stock of said company, as established by the act aforesaid, according to the provisions thereof, not exceeding forty thousand shares, books of subscription will be opened under the direction of the undersigned, according to the regulations prescribed, at the time and places following, viz:—On WEDNESDAY, the Twentieth day of August next,

At Calais, Maine, with Noah Smith, Jr., Esq.

Eastport, do. " Col. Bion Bradbury.
Machias, do. " Walker & O'Brien,
Ellsworth, do. " Seth Tisdale, Esq.
Oldtown, do. " Geo. P. Sewall, Esq.
Bangor, do. " Geo. W. Pickering, Esq.
Orono, do. " Hon. Israel Washburn, Jr.
Waterville, do. " Hon. Timothy Boutelle.
Brunswick, do. " Prof. William Smyth.
Augusta, do. " B. A. G. Fuller, Esq.
Belfast, do. " John Y. McClintock, Esq.
Portland, do. " John B. Brown, Esq.
Portsmouth, N.H. " Hon. I. Goodwin.
Salem, Mass. " Stephen A. Chase, Esq.
Boston, do. " Francis Skinner & Co.
Lowell, do. " John Wright, Esq.
Worcester, do. " Charles Washburn, Esq.
Providence, R.I., " Billings Brastow, Esq.
Hartford, Conn., " Hon. C. F. Pond.
New Haven, do. " Allen Prescott, Esq.
New York, N.Y., " R. & G. L. Schuyler, No. 2 Hanover street.

Said books will remain open for ten successive days at the places and with the persons aforesaid. Dated at Portland, this sixteenth day of June, A. D. 1851.

ELIJAH L. HAMLIN,
ANSON G. CHANDLER,
JOHN A. POOR.

Trautwine on R. R. Curves.

By JOHN C. TRAUTWINE, Civil Engineer,
Philadelphia, Pa.

IN press, and will be published in a few days; accompanied by a Table of Natural Sines and Tangents to single minutes, by means of which all the necessary calculations may be performed in the field.

This little volume is intended as a field-book for assistants; and will be found extremely useful, as it contains full instructions, (with wood cuts) for laying out, and adjusting curves; with Tables of Angles, Ordinates, etc., for Curves varying from 13 miles, down to 146 feet Radius.

A portable Table of Natural Sines and Tangents to minutes, has for a long time been a desideratum among Engineers, independently of its use in laying out curves.

The volume is neatly got up in duodecimo; and handsomely bound in pocket-book form.

Sold by Wm. Hamilton, Actuary of the Franklin Institute, Philadelphia. Price \$1.

Also in press, and will be issued in a few weeks, "Trautwine's Method of Calculating Excavation and Embankment."

By this method, which is entirely new, (being now made known for the first time) the cubic contents are ascertained with great ease, and rapidity, by means of diagrams, and tables of level cuttings. Thin octavo; neatly half bound, \$1. For sale by Wm. Hamilton.

June 28, 1851.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

Notice to Contractors.*Steubenville and Indiana Railroad.*

PROPOSALS will be received at the Office of the Steubenville and Indiana railroad company in Steubenville, until the first day of October next, for the Grading and Masonry of the first division of the road extending from Steubenville to the Connotten valley and also for the construction of the entire road between Steubenville and Coshocton; and also distinct proposals for the construction of that portion of the road extending from Coshocton to Newark.

The entire length of this line is about 110 miles, and it contains work of all descriptions, in great variety, some of which is quite heavy.

Proposals will be received for the Grading and Masonry of the first division entire or in sections of about a mile each, the Company reserving the privilege to make such disposition of the whole work, as may appear most conducive to its interests.

Plans, profiles and specifications can be seen at the office of the Company after the 15th of September, and further information may be obtained on application to J. Blickensderfer, jr., Chief Engineer, or to the undersigned,

D. KILGORE, President.

Notice to Contractors.*Engineers Office, E. T. & V. R. R. Company. }
Greenville, E. T., June 5th, 1851.*

PROPOSALS will be received until the 1st day of October next, for the Grading and Masonry of that part of the E. T. & V. Railroad between the Eastern terminus of said road at King's Meadow, and Rheatown, in Greene County, a distance of about forty-seven miles. A large amount of very heavy work, both in Grading as well as Masonry, will be found on this division, offering strong inducements to able Contractors.

Maps, Profiles, and Specifications can be seen at this Office, on and after the 20th of July next.

The Company reserve the right to reject all, or any proposals that they deem unsatisfactory.

Proposals should be directed to the Treasurer and Secretary of the E. T. & V. Railroad Company, Jonesborough, E. T.

LLOYD TILGHMAN,
Chief Engineer.**Railroad Lanterns.**

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.

August, 16, 1849. 6m33

Railroad Iron.

THE Subscribers, Agents for the Manufacturers, are prepared to contract for the delivery of Railroad Iron at any port in the United States or Canada, or at a shipping port in Wales.

WAINWRIGHT & TAPPAN,
29 Central Wharf.

Boston, June 1, 1851.

Bowling Tire Bars.

40 Best Flange Bars $5\frac{1}{2} \times 2$ inches, 11 feet long.
40 " " $5\frac{1}{2} \times 2$ " 7 feet 8 in. long.
40 " " 6×2 " 11 feet long.
40 " " 6×2 " 7 feet 8 in. long.

Now in store and for sale by

RAYMOND & FULLERTON,
45 Cliff street.**To Railroad Companies,
Machinists, Car Manufacturers, etc., etc.**CHARLES T. GILBERT,
NO. 80 BROAD ST., NEW YORK.

IS prepared to contract for furnishing at manufacturer's prices—
Railroad Iron,
Locomotive Engines,
Passenger and Freight Cars,
Car Wheels and Axles,
Chairs and Spikes.

Orders are invited; and all inquiries in relation to any of the above articles will receive immediate attention

THE Fourth Annual Exhibition of AMERICAN MANUFACTURES, by the MARYLAND INSTITUTE for the Promotion of the Mechanic Arts, will be opened in Baltimore on the 20th October, 1851.

The Exhibition will be held in the SPLENDID NEW HALL of the Institute, (fronting on Baltimore street) now being rapidly completed. Their edifice is centrally situated, chaste in its architecture, solid in its construction, and is by far the largest and most complete building in the United States, devoted to the Mechanic Arts. It may be added that this building is 355 feet long by 60 in breadth, with an average height of 68 feet, containing some twelve apartments, the largest of which is 255 feet by 60, and that the cost will be over \$70,000.

To this Exhibition, the Managers ask the attention of all engaged in industrial pursuits throughout the country, and cordially invite them to contribute specimens of their best productions for public inspection, and to compete for the prizes offered by the Institute. These prizes consist of GOLD and SILVER MEDALS, DIPLOMAS, etc., which were last year distributed as follows:—Gold Medals, 16; Silver ditto, 90; Diplomas, 60; besides 85 articles of Jewelry, etc., to ladies. Fair play will be scrupulously observed towards all, and every facility of Steam power, shafting, fixture, labor, &c., &c., will be amply provided free of expense. The machinery will be under a special superintendent, and a fine display of it is looked for. The last exhibition of the Institute was visited by more than 40,000 persons, and with their vastly improved accommodations and alterations, this number will be doubled at the coming display, embracing many Virginians, Pennsylvanians, and other strangers from the South and West.

Joshua Vansant, President.

Ed. Needles, } Vice Presidents.
F. A. Fisher, }

Samuel Sands, Rec. Sec'y.

Wm. Prescott Smith, Cor. Sec.

F. J. Clare, Treasurer.

BOARD OF MANAGERS.

Ross Winans,
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Saml. E. Rice,
John F. Meredith,
W. Abrahams,
Thos. Trimble,
Chas. Suter.

(*The last nine in Italics are the Committee on Exhibition.*)

The Hall will be opened for the reception of goods on MONDAY, 13th October; on the next Monday, 20th, at 7 P. M., the Exhibition will be formally opened to the public, and will positively close on Wednesday, 19th November. Articles for competition must be in the Hall by Thursday night, Oct. 16, unless delayed in shipment after starting in ample time.

Those who intend depositing, will give the Committee or the Agent, notice as early as possible, stating the nature of the goods, and probable amount of room required, to exhibit them to advantage.

Circulars, containing a view of the new Hall and the full regulations of the Committee, with special information, if required, may be had promptly, by addressing the undersigned, or the Institute's Agent, J. S. Selby, Baltimore, post-paid.

ADAM DENMEAD,

Chairman Com. on Exhibition for 1851.

SUPERIOR BLACK WRITING & COPYING INK.**Jones' Empire Ink.**

87 Nassau st., Sun Building, New York city.

Net prices to the trade—

Quarts, per dozen,	\$1 50	6 oz. per dozen,	\$0 50
Pints,	1 00	4 " "	0 37
8 ounces,	0 62	2 " "	0 25

On draught per Gallon, 20 cents.

This is the best Ink manufactured. It flows freely, is a good copying ink, and will not mould, corrode, precipitate or decay. Orders for export, or home consumption, carefully and promptly attended to by
21st
THEODORE LENT.

To Railroad Companies, etc.

The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

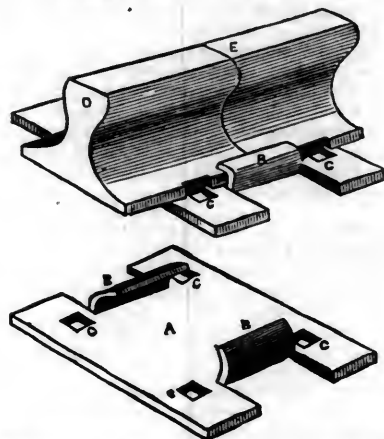
I also invite attention to an improved PATENT SPRING LOCK, for SLIDING Doors to Freight and Baggage Cars, now in use upon the Pennsylvania Central, Greenville and Columbia, S.C., Reading, Pa., and other Railroads.

Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH,

46 South 8th St. Philadelphia.

May 9, 1851.

The American Railroad Chair Manufacturing Co.

ARE prepared to make WROUGHT IRON RAIL ROAD CHAIRS, of various sizes, at short notice.

By use of the WROUGHT IRON CHAIR, the necessity of the wedge is entirely done away—the lips of the chair being set, by means of a sledge or hammer, close and firmly to the flange of the rail.

The less thickness of metal necessary in the Wrought Iron Chair gives much greater power and force to the spikes when driven—and consequently a much less liability to the spreading of the rails by reason of the spikes drawing or becoming bent.

The less weight necessary in the Wrought Iron Chair, will enable us to furnish them at a cost much below that of CAST IRON CHAIRS.

DESCRIPTION OF THE ABOVE CUTS.

Figure 1 is a perspective view of the rail secured in the chair, and fig. 2 is a perspective view of the chair itself. D, E, are sections of two rails placed together, and secured at the joint on the chair by the jaws B, B. The chair is bolted down by spikes C, C. In fig. 2, the chair is represented as made of a single block or plate A of wrought iron.

The chair is set in its proper place on the track, spiked down, and the ends of the two rails brought together within the jaws as represented in fig. 1.

For further information address,

N. C. TROWBRIDGE, Secretary,
Poughkeepsie, N. Y.

June 1, 1851.

Railroad Commission Agency.

THE Subscriber offers his services to Railroad Co's and Car Makers for the purchase of equipment and furniture of roads and depots and all articles and materials required in the construction of cars, with cash or approved credit. No effort will be spared to select the best articles at the lowest market price.

He is sole Agent for the manufacture of the ENAMELED CAR LININGS, now in universal use. The best Artists are employed in designing new styles, and he will make to order pieces with appropriate designs for every part of the car, in all colors, or with silver grounds and bronzed or velvet figures.

He is also Agent for Page's Car Window Sash Fasteners, which is preferred by all who have used it to any other.

CHARLES STODDER,

75 Kilby st., Boston.

June 20, 1851.

3m.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 136 NASSAU ST., NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.
SECOND QUARTO SERIES, VOL. VII., No. 32.] SATURDAY, AUGUST 9, 1851. [WHOLE No. 799, VOL. XXIV.

ASSISTANT EDITORS,
J. T. HODGE, *For Mining and Metallurgy.*
GEN. CHAS. T. JAMES, *For Manufactures and the
Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & Co., 136 NASSAU ST.

Saturday, August 9, 1851.

Illinois Central Railroad.

We have received an ably written pamphlet by D. A. Neal, Esq., setting forth the position and prospects of the Illinois Central railroad, an enterprise that is just now attracting the attention of business men and capitalists. The right of way through the public lands and alternate sections of those lands, were granted by act of Congress, approved September, 1850, to the State of Illinois, for the purpose of aiding the construction of "a railroad from the southern terminus of the Illinois and Michigan canal to a point at or near the junction of the Ohio and Mississippi rivers, with a branch of the same to Chicago, on Lake Michigan, and another via the town of Galena to Dubuque in the State of Iowa." By an act of the Legislature of the State of Illinois, passed the present year, Robert Schuyler, George Griswold, Gouverneur Morris, Franklin Haven, David A. Neal, Robert Rantoul, Jr., Jonathan Sturgis, George W. Ludlow, John

F. Sanford, Henry Grinnell, Wm. H. Aspinwall, Leroy Wiley, and Joseph W. Alsop, and such persons as shall hereafter become stockholders, were created a body politic and corporate, under the name of the Illinois Central Railroad Company, with all necessary powers and privileges for constructing and maintaining the railroad and branches, contemplated in the act of Congress aforesaid; and for this purpose the right of way and all the lands that may have been selected along the line of said road and branches in the State, under the grant in said act, together with a right of way over and through lands belonging to the State, and all the rights and materials heretofore acquired by the State for the same object, are ceded and granted to said corporation, on condition that such road shall be built in four, and said branches in six years, and that when built and in operation, seven per cent. of the gross income shall be paid to the State, in lieu of all taxes levied for State purposes. The lands thus granted are to be placed in the hands of trustees, three-fourths for the security of any bonds issued by the company, and one-fourth to meet any deficiency from other sources, for the payment of interest, or contingencies. The capital stock is fixed at one million of dollars, which may be increased at any time, to an amount not exceeding the entire expenditure on account of the road.

The company has been organized, the capital stock subscribed, and 20 per cent. of it paid in; and engineers are now employed in selecting a route for the road and branches, the total length of which is assumed to be 670 miles.

It is proposed to meet the cost of construction by the issue of bonds, payable in 1875, bearing interest not exceeding 7 per cent. The security for the principal will be—1st, the road itself; and 2d, two million acres of the donated lands. The security for the interest will be—1st, the capital stock; 2d, the income of the road; 3d, 250,000 acres of the land specially appropriated.

The lands will be valued at prices that will more than cover any possible amount required for construction, but which, it is believed, will be fully realized before the period of the maturity of the bonds. These bonds may at any time be surrendered, and any land on sale claimed in lieu of them at the appraisement. The rates at which it is expected these lands can be sold, will not vary much from the following average:

Acres.	
400,000 ordinary agricultural lands	\$6, \$2,400,000
1,200,000 good " "	10, 12,000,000
300,000 superior " "	15, 4,500,000
100,000 town sites, mineral lands, etc.	20, 2,500,000

2,000,000 \$21,400,000

The pamphlet then goes on to show that the peculiar formation of this tract of country, makes it perhaps more than any other in the world, *the place* for the location of railroads. Its topographical character is extremely favorable to their construction. On its vast prairies the levels are already formed. The embankments and ditches may be made by turning the sods from the sides to the centre. There are but few streams to cross, no rocks to blast, no mountains to perforate, and no valuable estates through which to purchase, at enormous rates, the right of way. The difficulties are all of an inferior grade.

Having shown the cheapness of the road, we are presented with an estimate of the probable business which it would command, as follows:

1,200 tons outward freight 312½ days, is	
375,000 tons, at \$4.....	\$1,500,000
300 tons inward freight 312½ days, is 93,-	
750 tons, at \$5.....	468,750
200 tons coal to Cairo, 313 days, is 62,-	
600 tons, at \$1.....	62,600
200 tons coal to Chicago, 313 days, is	
62,609 tons at \$2.....	125,200
200 tons lumber from Chicago, 313 days,	
62,600 tons at \$2.....	125,200
64 tons through freight, 313 days, is 20,-	
000 tons, at \$10.....	200,000
26,000 through passengers, 400 miles	
each, 10,400,000 miles, at 3 cents....	312,000
60,000 local passengers, 300 miles each,	
18,000,000 miles, at 3 cents.....	540,000
Mail, \$100 per mile	66,000
Expresses, parcels and miscellaneous..	38,250

Total.....	\$3,438,000
State tax, 7 per cent. say	238,000
Balance	\$3,200,000

COST OF OPERATING.

73,280,000 tons carried one mile	
at 1½ cents per ton per mile. \$916,000	
28,400,000 passengers carried	
one mile at 1 cent per mile..	284,000
	1,200,000

Being 60 cents per mile run by trains—
net income.....\$2,000,000
Being seven per cent. on between twenty-eight and twenty-nine millions of dollars,

The above is Mr. Neal's estimate of the business of the road so soon as it shall have been put in operation. After, however, all the great lines of thoroughfare shall have been completed which will directly or indirectly affect the business of this; after the connection shall have been made perfect with New York, Boston, Philadelphia, Baltimore, Charleston, New Orleans, Mobile, etc.; and after the inexhaustible resources of the State of Illinois shall have begun to be fairly developed, Mr. Neal indulges in another estimate of what the business of the road may then be expected to amount to, as follows:

	Gross income.
150,000 tons coal carried 75 miles each.	\$225,000
150,000 tons lumber, " 100 "	300,000
1,000,000 tons produce, " 100 "	4,000,000
125,000 tons merchandise back "	625,000
60,000 local passengers, 300 "	540,000
26,000 through " 400 "	312,000
20,000 tons freight, 400 "	200,000
	6,202,000
Mails, etc.	98,000

Total.....\$6,300,000
Expenses.....2,580,000
Leaving a net income of \$3,720,000, less seven per cent. of gross income to State, \$440,000—leaves \$3,280,000, or an interest of 7 per cent on nearly \$47,000,000.

Before this amount of business could be done over the road, however, the company will have to incur the additional expense of building another track, provide further depot accommodations, and increase the stock which will be put upon the road at its completion.

Mr. Neal estimates the whole cost of the road, single track, at \$15,000,000; and to do the business of the first of the above estimates would require 75 engines, 90 passenger cars, 960 freight cars and 640 coal cars.

We give an extract from the pamphlet:

The road to be built is restricted only to within 17 miles each of a straight line from the city of Cairo to the southern terminus of the Illinois canal, which line is nearly coincident with the third principal meridian, thence a branch by any convenient route to Galena. From a point in about the latitude of 39.30 north latitude, will diverge the branch to be built to Chicago. The main line to be completed in four years, the branches in six. No taxes to be levied until the road is completed; then in lieu of all other taxes the company are to pay seven per cent. of the gross earnings of the road, as already stated. The donated lands consist of every alternate section designated by even numbers, for six sections in width on each side of the road as it may be located, or if any of these have been sold, than an equal quantity may be taken from contiguous tiers of sections anywhere within 15 miles of the line.

Under this grant, the road will be located through the most fertile prairies, the most valuable forests, and the richest mineral lands in the State; but these have been neglected by settlers in consequence of the utter impossibility of getting their productions to market. Until the Illinois Central railroad company shall have selected their lands, the books of the General Land office in Washington are closed against entries in this region, and when opened, the price is to be double that of the other lands. The company are therefore fully protected. They have organized under their charter, all the deeds and necessary documents have been executed by the Governor of the State, the trustees and its own officers. The whole stock has been taken and 20 per cent. paid in, in cash, and the same deposited with the State Treasurer of Illinois, to be returned on completion of 50 miles of the road. Robert Schuyler, Esq., of New York, a gentleman more conversant with and more largely interested in railroads than any other person on the western continent, has been chosen President, and

Morris Ketchum, Esq., of the very wealthy and well known house of Rogers, Ketchum & Bement, Treasurer of the Association. R. B. Mason, Esq., of the New York and New Haven railroad, has been appointed Chief, and he has engaged seven resident and a large corps of assistant engineers, who have proceeded to Illinois to locate the road and select the donated lands. The system devised for procuring the means of building this road by the sale of bonds, and for the payment of them when or before they become due, is unique in its character and provisions. It is believed to afford not simply entire security for the current interest and redemption at maturity, but a strong probability of a great advance in value, in consequence of the peculiar conditions annexed to the sale of the property which forms a branch of the collateral security embraced in the plan.

Ancient and Modern Metals.

The ancients were acquainted with but seven metals; we therefore enumerate those at present known in addition, and by whom discovered:—

1. Gold.	
2. Silver.	
3. Iron.	
4. Copper.	
5. Mercury.	
6. Lead.	
7. Tin.	
8. Antimony....	Basil Valentine 1490
9. Bismuth.....	Agricola 1530
10. Zinc.....	Paracelsus 1530
11. Arsenic.....	Brandt 1733
12. Cobalt.....	Brandt 1733
13. Platinum....	Wood 1741
14. Nickel.....	Cronstedt 1751
15. Manganese....	Gahn 1774
16. Tungsten....	D'Elhugart 1781
17. Tellurium....	Muller 1782
18. Molybdenum..	Hjelm 1782
19. Uranium....	Klaproth 1789
20. Titanium....	Gregor 1791
21. Chromium....	Vauquelin 1797
22. Columbium..	Hatchett 1802
23. Palladium....	Wollaston 1803
24. Rhodium....	Wollaston 1803
25. Iridium.....	Tennant 1803
26. Osmium.....	Tennant 1803
27. Cerium.....	Hisinger 1804
28. Potassium....	
29. Sodium.....	
30. Barium.....	
31. Strontium....	Davy 1807
32. Calcium.....	Davy 1807
33. Cadmium....	Stromeyer 1818
34. Lithium.....	Arfvedson 1818
35. Silisium.....	Berzelius 1824
36. Zirconium....	Berzelius 1824
37. Aluminum....	Wohler 1828
38. Glucium.....	Wohler 1828
39. Yttrium.....	
40. Thorium....	Berzelius 1829
41. Magnesium..	Bussy 1829
42. Vanadium....	Sefstrom 1830
43. Didymium....	Mosander 1842
44. Lanthanium..	Mosander 1842
45. Erbium.....	Mosander 1842
46. Terbium....	Mosander 1842
47. Pelopium....	H. Rose 1845
48. Niobium.....	H. Rose 1845
49. Ruthenium...	Claus 1845
50. Norium.....	Svanberg 1845

Elements of the Electric Telegraph.

An electric telegraph consists essentially of three things:—first, a voltaic battery, or other apparatus, to evolve, when required, electricity; secondly, an arrangement of metallic wires, or other good conductors, to convey the electricity to the distant places with which the telegraph communication is to be carried on, and to bring it back to the machine from which it set off; thirdly, the application of the electricity so conveyed to produce at the distant station some striking phenomenon, which, according to a preconcerted arrangement, shall represent a letter of the alphabet, a numeral, a word, a sentence, a paragraph, or the like. A source or fountain of electricity, conductors to carry it, and a dial plate, on which it shall cause an index to exhibit

signals, are thus the essential elements of an electric telegraph.

Mile of the Different Nations.

English yards.	English yards.
Arabian mile....	2,148
Bohemian mile....	10,137
Brabant mile....	6,082
Burgundy mile....	6,183
Chinese illis....	628
Danish mile....	8,244
English mile....	1,760
English mile Geog	2,925
Flemish mile....	6,869
French art II lea-	
gu's.....	4,860
French Marine do	6,075
French legal lea-	
gues of 2,000	
toises.....	4,263
German mls Geog	8,100
German m'les	
long.....	10,126
German miles short	6,859
Hamburg mile....	8,244
Hanover mile....	11,559
Hesse mile....	10,547
Dutch mile....	6,395
Hungarian mile...	9,112
Irish mile.....	3,038
Italian mile.....	2,025
Lithuanian mile...	9,784
Oldenburgh mile.	10,820
Poland mile short	6,095
Poland mile long.	8,101
Portuguese leguas	6,750
Prussian mile....	8,468
Roman mile an-	
cient.....	1,613
Roman mile mod-	
ern.....	2,036
Russian versts...	1,167
Saxon mile.....	9,905
Scotch mile.....	1,984
Silesian mile....	7,083
Spanish leguas le-	
gal.....	4,630
Spanish leg. com.	7,416
Suatian mile....	10,125
Swedish mile....	11,794
Swiss mile.....	9,156
Turkey berries...	1,821
Westphalian mile	12,155

The Flora of the Coal Formation.

No fewer than three hundred species of plants belonging to the coal formation of Great Britain have been enumerated up to the present time; but although this is the whole number hitherto discovered, it is impossible to say whether it approaches the total amount of the species of even a single period. It need hardly be remarked that a collection, formed of the fragments found in our latest deposits, would not afford the slightest indication of the nature of the general mass of the then existing vegetable world; and as little are these remains to be regarded as those of the more abundant kinds of plants, or even as those of the plants which might have been fancied to be best adapted for fossilization. That specimens of species at present unknown may yet be discovered, in a condition which will enable the botanist to pronounce positively on their character, cannot be doubted; but that they exist in less number than might otherwise be anticipated from the vast extent of a coal field may be deduced from the great uniformity of species among the fossil plan which have already been found in the coal formation.

That the vegetation of the coal period, whether we consider it as confined to the range of the coal-field or not, was extremely luxuriant, cannot be denied; the immense masses of the coal, the great predominance of forms perceptible in every coal-field, and the great size to which many of the soft-celled plants have attained, clearly show this. A luxuriant vegetation, however, is not a proof of a varied one, for many of our forests at the present day, even large tracts of forests within the tropics, are formed of a few, though abundant species; and in this manner the coal forests might have consisted of sigillarias and lepidodendrons, intermixed with a few ferns, for a small number of the latter, if they were as Proteus-like as some of their relatives of our age, would suffice to include all the known species of the fossil flora. The predominance of ferns over flowering plants is common to many of the tropical islands, and is not limited to the smaller ones, such as St. Helena and the Society Islands. It is also observed in extra-tropical islands, as in New Zealand, where thirty kinds of ferns have been gathered in the space of a few acres, giving the vegetation (which, beyond these, scarcely exhibited a dozen of flowering plants and trees) a very luxuriant appearance. A similar tract in the neighborhood of Sydney, in about the same latitude, had 100 species of flowering plants, and only two or three ferns.

In the modern period, and more particularly in temperate latitudes, a flora, marked by a predominance of ferns, is almost invariably poor in species of this or other orders. Where one species extends over a large space, like the fly-fern (*Pteris aquilina*) in many parts of England, or the edible fern in Van Diemen's Land, it generally occupies the whole surface of the ground; for, on the one hand,

it obstructs the growth of the larger sorts of plants, and, on the other, it chokes the undergrowth of the smaller species of fern. A luxuriant vegetation of many kinds of fern, extending over several degrees of latitude and longitude, indicates, in temperate regions, a uniformity of temperature, and a poverty of flowering plants. A comparison of the vegetation of New Zealand and Van Diemen's Land will render this clear. The latter, an island scarcely 200 miles in length, possesses four times the number of species of plants found in New Zealand, which is 900 miles long. On the other hand, the latter has four times as many species of ferns, which are so equally distributed all over the island, that those which are found at the south end also prevail at the north.

The West India and South Sea Islands also present a flora strikingly rich in ferns, and in both cases we find numerous species spread over an immense extent of surface—namely, from the Leeward Islands to Mexico, and from New Zealand to the Society and Sandwich Islands. If we take, on the other hand, the Campos of Brazil, the sandy plains of South Africa, we find there, barren as they might at first sight appear, many kinds of flowering plants but not ferns. The predominance of ferns in the coal period has long been urged as proof that the climate was then mild, agreeable, and moist; but it has never yet been brought forward as showing the small number of other plants, and the general poverty which characterized the flora of the period. If the present laws of vegetation applied to the time when the fossils bloomed, we must conclude, from the prevalence of the ferns over a great extent of surface, and also of certain kinds of *pecopteris* (related to our *pteris*), and from the striking singularity of the English fossils to those of North America, that the flora of the coal period was deficient in variety.

We must not, however, conclude from the predominance of an order, which, with regard to construction, stands low in the vegetable system, that the vegetation of which it formed a part was in a less advanced state of development than those of succeeding periods. We know too little of the structure of the ferns of that age to be able to decide whether they were more or less perfect than their relatives of the present period, while as regards the *lycopodiaceae*, we may safely affirm that in form and bulk, as well as complication of structure, they exceeded all existing plants of that order.

Liability of Railroads.

The Supreme Court of Michigan has decided that railroad companies are not liable for stock killed or injured by the cars running over them. In a recent case decided, Chief Justice Pratt, says:

"The running of that train was a lawful act, and within their chartered rights, it was upon their own railroad, of which they had, by the express terms of their act of incorporation, the entire and exclusive right of possession and control. No third person had any right to interfere, or to arrest the passage of the train, or, by any means impede its progress. The act, then, of running the cars being lawful, the defendants cannot be held liable for any accidental injury, which may have occurred, unless the lawful right of running train was exercised without a proper degree of care and precaution, or in an unreasonable, or unlawful manner. This is a principle of law well settled, neither new or anomalous. It is as old as any other principle of the common law, and alike applicable to every other kind of lawful business."

* * * * *

It often happens that no precaution, care or skill can prevent a locomotive at the head of a train of cars, running with the accustomed speed, from coming in collision with some domestic animal wrongfully on the road, and which the owner has negligently suffered to go at large unrestrained; the engineer conducting the train, not being able in consequence of some curve in the road, the darkness of the night, or some other unavoidable cause, to discover the animal in time to stop the locomotive, and thus prevent the collision. Under such circumstances, the defendants could not be held liable by any known principle of law, and if they could be, it would be unreasonable and manifestly unjust. They are required under heavy penalties to run the

cars, and expeditiously to transport persons and property, &c.; and shall they, by construction based upon nothing better than mere hypothesis, be compelled to assume the guardianship of all the stray cattle, horses, and swine, usually found strolling along on the track of their railroad? Most certainly not. The owners are the only persons to look after them, and if they do not, it is but just that they alone should suffer the consequences of their own negligence and wrongful act,—of their own want of care, in the protection and preservation of their own property.

Southern and Western Railroad Convention.

We give below the proceedings of the committee appointed to call a Southern Railroad Convention at New Orleans on the first Monday of January next:

Under the resolutions annexed, inviting the call of a Southern and Western Railroad Convention, to be held in New Orleans, on the first Monday in January, 1852, I appoint the following named gentlemen a Special Committee:

GLENDY BURKE, Esq., Chairman.
Hon. A. D. CROSSMAN, Mayor of N. O.
Hon. ALEX. MOUTON.
J. D. B. DEBOW, Esq.
Col. C. S. TARPLEY, of Mississippi.

MAUNSEL WHITE, Pres't R.R. Con.

"Whereas, There are evidences throughout the Southern States of an awakening spirit of enterprise in the construction of railroads; and whereas, New Orleans, from her position and connections, is deeply interested in the promotion of these roads, and their concentration upon points which shall intersect with the roads now in projection from her midst, it is

"Resolved, That a Committee of Five be appointed by the President of this Convention, whose duty it shall be to prepare an address to the people of the Southern and Western States, setting out with all the facts and statistics they can gather, the various railroad projections in which these States have a direct and immediate interest, and the hearty co-operation which New Orleans and Louisiana are prepared to extend to them all; and inviting the people of these States to meet us in convention in the city of New Orleans, on the first Monday of January next, in order to an exchange of views and opinions, and if possible, a concentration and unity of effort in the extension of our railroad system.

"Resolved, That the Committee have authority during the ensuing summer and fall, to represent the views of New Orleans in these matters, in any of the States it may be in their power to visit, and that the agency of the press in behalf of the Convention be respectfully solicited.

"Resolved, That the said Committee be requested to correspond with the authorities of Texas, for the purpose of inviting that State to direct her public works so as to meet the extension of the New Orleans, Opelousas, and Attakapas Railroad."

New Orleans, July 15, 1851.

Fellow Citizens of the Southern and Western States:

Acting under the above appointment, the undersigned cannot refrain from expressing their satisfaction in being made the instruments of carrying out the wishes of the people of New Orleans, and of the late Railroad Convention, in inviting you to unite with us in promotion of the great purposes of railroad improvements in the Southern and Western States.

The time has arrived, in the progress of this active and busy age, when the South and the West should be aroused to a concentrated and vigorous effort, for the increase of their facilities of intercourse, and for the consequent development of their industry and enterprise to which it will lead, and their advancement in moral and physical power.

In particular, we invite the people of Texas, Mississippi, Alabama, Arkansas, Tennessee, Kentucky, Missouri, Indiana, Illinois, and Ohio, to send their delegates to unite with the people of Louisiana and New Orleans, to deliberate upon,

and concert such measures as will be likely to influence the construction of a system of railroads, connecting the Gulf State with those of the West and the North-west, and radiating throughout all the interior. We also invite delegations from others of the Southern States, in order more fully to understand the systems of works projected or being carried out by them, and to co-operate in the construction of any which may have an interest joint and common to us all.

The Committee have fully set out, in their annexed address, accompanied by a map, the general subjects to which the attention of the Convention will be invited.

The first Monday in January will be an agreeable and pleasant season to visit New Orleans, and her citizens tender in advance the hospitalities of the city to all who may appear from any quarter as representatives to the Convention.

GLENDY BURKE, }
A. D. CROSSMAN, } Louisiana.
ALEX. MOUTON, }
J. D. B. DEBOW, }
C. S. TARPLEY, } Mississippi.

Lake Superior Mining Intelligence.

We copy from the Lake Superior Journal the following statement of the recent arrival of copper at the Sault:—

June 21.—Per steamer Napoleon, 78 tons of copper from the Cliff mine, 24 1-2 tons of bloom iron from the works of Messrs. Eaton & Co., Carp river, and nine tons of copper from the North American mine.

June 27.—Per Monticello, 53 tons of copper from the Cliff Mine.

Per schr. Fur Trader four tons from the Minnesota Mine.

July 1.—Per Manhattan, ten and a half tons copper from Minesota mine, and two tons from the Peninsula mine, the first shipment from this mine.

July 5.—Per Napoleon, 42 tons of blooms from Messrs. Eaton & Co., and 122 tons blooms from Marquette Iron Company.

Per schr. Algonquin ten tons copper from the Cliff mine.

July 6.—Per Manhattan, 15 tons copper from the Cliff mine.

July 11.—Per Manhattan, 33 1-2 tons from the Cliff mine.

July 10.—Per Napoleon 27 1-2 tons blooms from the Jackson Company.

The following is the report of the sale of Mining Stock at the Copper Stock Exchange Office, Eagle Harbor, Michigan July 12, 1851:

Name of Company.	Asked.	Offered.	Sold.
Copper Falls.....			\$40 00
Pittsburgh & Boston, (Cliff Mine).....		\$128 00	
North American.....	\$35 00		33 00
Minesota.....	180 00		175 00
North West.....	35 00		34 00
North Western.....	15 00		12 50
Phenix.....			8 00
Ridge.....			8 50
Adventure.....			8 50
Iron City.....	6 50		5 50
Forest.....	8 00		7 00
Cape.....			3 00
Farm.....	6 00		5 00
Algoma.....			2 62½
Toltec.....			3 50
Medora, (Agate Har- bor).....	3 00		2 00
Bluff.....			1 00
Astec.....	8 00		7 00
Ohio.....	6 50		6 00
Eureka.....			3 00
Hungarian.....	2 00		1 50
Ripley.....	3 00		2 00
Douglass Houghton..	7 50		6 50
Winthrop.....	3 00		2 00
Dana.....	3 00		2 00
Lac la Belle.....	2 00		1 50
Forsyth.....			3 00

JOS. THACHER,
Sec'y M. I. Association,

From the Chemical Gazette.
On the Spheroidal State of Bodies.

BY E. N. HORSFORD,

Rumford Prof. in Harvard University, Cambridge.

From the early observations of Leidenfrost, and the later extended researches of Boutigny, upon the so-called spheroidal state of bodies, much attention has been directed to the interesting phenomena considered under this name, and to the speculation, that a new law, superseding the ordinary laws of heat, was here illustrated.

It will be the object of this communication to show that these phenomena are not rare, and that they require no new law for their explanation.

In the experiment of dropping water upon a hot polished metallic surface, as into a hot platinum crucible, we have three bodies concerned in the phenomenon that follows, viz: the supporting surface, the water and the layer of vapor interposed between them. The water rests upon a cushion of steam, continuously evolved by heat from the water, and assumes rounded margins as a result of the gravity of its particles toward its own centre. Its condition approximates to that of a liquid entirely surrounded by a uniformly-elastic medium, as for example, a drop of molten lead in air, and permits a proportionate approximation to the spheroidal form.

It is essential only that there be two bodies, one of them being fluid, between which affinity is wanting.

Corresponding with water in the ordinary experiment, called by the name of Leidenfrost, ether, alcohol, turpentine, a great variety of essential oils, and many other liquid bodies may be employed.—The conditions are the same. The liquid evolves a vapor, which, constantly issuing, prevents contact with the supporting surface. Here are three bodies and a high temperature.

Ether and oil dropped on water assume the spheroidal state. They have no affinity for the water. Here but two bodies and no heat are required.—Quicksilver poured upon glass assumes the spheroidal state. It has no affinity for the glass. Here but two bodies are concerned. Water dropped upon glass strewn with charcoal dust or fine powder, like pollen, takes on the spheroidal state.—Potassium and sodium thrown upon water assume this state. In the decomposition of the water producing potash, hydrogen is evolved; and with the heat arising from this union, and that of the potash with water forming hydrate of potash, water is vaporized, which with the hydrogen keeps the floating sphere and water apart. The dew-drop presents a spheroidal, but little differing from the true spheroidal state. It rests in most cases upon the hairs or down with which leaves are covered, and is not in contact with the leaves or twigs.

The bead, as it is called, which appears at the surface of some liquids when violently shaken, and of which we have a familiar example on the water around the prow of an advancing sail-boat, is an instance of the spheroidal state of great interest.—What prevents the prompt reunion of the bead with the mass is not so obvious.

There is a fact in the history of the barometer which merits attention, and which may have influence in explaining this phenomenon. When pure mercury has been introduced into a barometric tube, and thereafter boiled, so as to expel all the air, upon erecting the tube in the cistern, the top of the column presents a certain curve, the meniscus, the character of which is dependent on the composition of the glass and diameter of the tube. If now a bubble of air be introduced, and then removed by carefully causing the mercury to sweep up and down the length of the tube, upon erecting the barometer the mercury will stand at the same elevation as before, but the meniscus will be less convex. Here, as in the case of the bead, it may be conceived that the mercury and water have condensed an infinitely thin layer of air upon their surfaces, which provide for the phenomena of the spheroidal state in the latter instance, and which modify the affinity of the mercury for the glass in the former.*

* The condensation of gases upon the surface of solids is a familiar fact, of which the ignition of a jet of hydrogen by platinum sponges is a well-known illustration.

Of this class of facts, to none has more interest attached than to the recent experiments of Boutigny with molten metals. To him are we indebted for the first scientific consideration of this subject, although it appears that jugglers performed the feat of washing the hands in molten lead many years ago. Eleven years ago the author witnessed an explosion from the contact of molten slag with water, which expended most of its force upon the face and breast of a workman near. The shock prostrated and bruised, but did not burn him.

One form of the experiment is given in the adjustment of the wick of a burning spirit lamp with the fingers, which is every day practised by chemists.

In the experiment of passing the hand into molten iron, which has been repeatedly performed by the author without discomfort, it is necessary only, as has been noticed by Boutigny and others, that the surface of the skin be wet, or covered with some body like powdered resin, which upon the application of heat will readily vaporize. That the experiment may be safely performed, any one may satisfy himself by passing through the molten mass any highly-combustible substance previously moistened, as for example a stick of sealing-wax. When the hand previously moistened, is passed into the liquid metal, the water is vaporized, interposing between the metal and the skin a sheath of vapor. In its conversion into vapor, the water absorbs heat, and this still further protects the skin. It was thus in the case of the workman alluded to above. His face was streaming with perspiration, and the molten slag came in contact, not with the skin, but with the layer of vapor which rose upon its surface as the heated mass came near.

The explanation of Berzelius, offered some years since, and confirmed by all the experiments, so far as I know, that have been performed, is the following:—

In the Leidenfrost experiment, a layer of vapor continuously evolved from the inferior surface of the liquid, provides an aeriform medium which does not conduct heat, but merely transmits radiant heat, which, passing through the liquid, as through most transparent substances, heats it but slightly. Thus evaporation is slow. The temperature of the liquid, it is well known, remains constantly below that of the boiling point. This accounts for the much greater length of time required for water to vaporate when resting upon an oiled surface than when in contact with wood or metal; and for the length of time that dew-drops or spiders' web will sustain exposure to the sun, when compared with that which would be required to evaporate an equal quantity of water from a surface where there is actual contact over a considerable area, and where conduction may take place.

The explosions sometimes following the first contact of a piece of potassium or sodium with water are due to the admixture of evolved hydrogen and atmospheric air. The explosion at the conclusion of the burning of the potassium or sodium is of another character. It is due to the sudden contact of the hydrate of potash when the temperature has become sufficiently low to permit it, and is analogous to the phenomenon witnessed when the surface supporting a mass of water in the spheroidal state is permitted to cool down until contact takes place.

The explosions occasionally witnessed where a large quantity of fused saltpetre has come in contact with water, are of this description.

The explosions of steam boilers have recently, in several instances, been ascribed to the properties of steam evolved from water in the spheroidal state, or evolved at the instant contact between the water and boiler is resumed. This is called a highly explosive steam. Not an experiment has been made of which the author is aware, going to show any difference between this and ordinary steam.—It is conceived that in some way the mass of water in a boiler becomes separated from the interior surface of the metal, as in the experiment of Leidenfrost; and that upon cooling down to about 280° to 300° F. contact is resumed, and from the sudden evolution of steam, explosion results. But boilers of ordinary strength would sustain any pressure which could be exerted from steam, produced within its own walls at a temperature of 300° F.; and by the conditions supposed, the water in the

boiler has been already more highly heated; else it could not have been cooled down to this temperature. A higher heat must have subjected the boiler to greater pressure, and yet that increased pressure had been sustained.

Louisiana.

New Orleans, Jackson and Northern Railroad.—

In our paper of the 19th ult. we gave a very brief abstract of the 'Address to the people of Louisiana' published by the committee of Ways and Means of the New Orleans, Jackson and Northern railroad. Some of the facts there stated are so significant, that we now proceed to give them more in detail.

The committee report that they have organized a provisional company, and opened books for subscriptions in the city of New Orleans, and at different points in the line of the proposed road. Under this arrangement, the amount of stock already taken has reached \$400,000.

The report says:—

"The progress of Louisiana, notwithstanding her great natural wealth, has been but slow, in comparison with many of her sister States, whilst New Orleans, once the emporium and mart of the immense empire of the West, sees her commercial rank and position fading away in the triumphant struggles of a host of formidable rivals. The valley of the Mississippi, the natural tributary of New Orleans, has been rapidly increasing in wealth and population, while the commerce of the city has not increased, as will be seen by a comparison of the years 1849 and 1850:—

NUMBER OF VESSELS.

Year.	Flatboats.	S'mboats.	Am.	Foreign.	C'ste.
1849.	1496	2873	697	344	1558
1850.	924	2784	522	378	1342

Dec.	572	89	175	....	216
Inc.	....	....	....	34	....

TONNAGE.

Year.	American.	Foreign.	Coastwise.
1849.	240,844 42	101,196 10	161,899 62
1850.	175,167 35	176,344 02	412,126 01

Dec.	65,657 07	24,852 08	49,773 61
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The comparison of these years must not be considered as an isolated case; but on the contrary, is too true an expose of the course of trade in this city, for several years past."

After recommending that New Orleans should, in order to regain her commercial advantages, make liberal appropriations for railroads, &c., the report says, that experience has demonstrated that in all communities where public spirit has not been generally awakened, it will not do to rely solely upon individual subscriptions for the promotion of great public works. A tax on real estate is, therefore, proposed; this plan has been successfully adopted in Virginia, Tennessee, Kentucky, Alabama and elsewhere. The committee say:—

"A tax upon real estate is the fairest, most equal and best that could possibly be devised, since it is real estate that must first feel the benefit; and it is this that gives a fixed and permanent interest to the holder and revenues, more independent of his individual agencies than any other description of property. That real estate is the first to feel the beneficial influence of internal improvement is evidenced by the practical experience of every portion of the country. The valuation of real estate in the city of New York in 1825, the year of the opening of the Erie Canal, was \$58,425,395. In 1833, the year after the completion of the Ohio Canal connecting the Ohio river with Lake Erie, it was \$114,124,566, and in 1840, when these improvements had time to develop themselves, it had swelled up to the sum of \$187,121,714. In the ten years preceding the opening of these improvements, the valuation of property scarcely underwent any change; but in the fifteen years following these improvements, the value of real estate had increased over 300 per cent. The same effect is observa-

ble in the country. The population and the valuation of properties in the counties of New York traversed by the Erie railroad, was:—

	Population.	Real and Personal Estate.
In 1830.....	460,562	\$43,484,588
In 1840.....	564,685	84,000,330

Increase it ten years.....104,123 \$40,515,770

In Massachusetts, where there have been \$75,000,000 invested in railroads, the increase in the value of property is more striking:—

In 1840 it was.....	\$299,878,329
In 1850 it was.....	590,521,881

Increase in ten years.....\$290,653,552
In Tennessee the same results has been produced in four counties traversed by the Nashville and Chattanooga railroad:—

In 1848 the assessed value of property was.....	\$23,864,043
In 1849 the assessed value of property was.....	26,418,682

Increase in one year.....\$2,554,639

Still more striking have been the results in Georgia. Population, production and wealth have there increased in a ratio that seems almost the result of magic. As real estate, therefore, feels more directly the influence of these improvements, it is but just that it should bear the weight of their construction. In fact, no other property can be reached with even an appearance of fairness and equality, especially property of an intangible kind. In a commercial community, capital in trade should be the last to be touched. It should meet with especial favor, more particularly in cases like this, where the sleepless rivalries of other communities must be encountered in the contest for trade, and where the slightest disadvantages will often turn the scale in favor of, or against the one or the other.

"The question of determining whether this tax shall be imposed or not, could not be submitted to a more proper tribunal than to the people themselves, whether in the city or in the parishes through which the road shall run. The majority of these are proprietors of real estate; the whole with but few exceptions, expect or desire to be, and are interested in the application of its value, as they are in the maintenance of its rights."

In order to show the capacity of the country for the support of a railroad, the following statistical table of the value of property and amount of population is appended:—

Recapitulation of the value of property—of improved and unimproved land—of production and population.

Parishes.	Total valuation of property	Population.	Free Slaves.	Total.
City of New Orleans	1st May.. 24,950,805	33,561	8,110	41,671
	2d May.. 40,257,967	45,947	6,087	52,034
	3d May.. 7,981,653	19,890	2,812	22,702
City of Lafayette..	73,140,422	99,398	17,009	116,407
Jefferson, exclusive of Lafayette.....	6,643,453	10,929	1,371	12,300
St. Charles.....	4,979,365	7,801	4,825	12,626
St. John the Baptist.....	3,464,590	988	4,132	5,120
St. James.....	3,977,550	2,778	4,540	7,318
Ascension.....	6,947,710	3,347	7,751	11,098
Livingston.....	5,800,327	3,436	7,766	11,252
St. Helena.....	559,335	2,543	841	3,384
East Baton Rouge..	1,116,217	2,366	2,196	4,562
East Feliciana....	5,783,472	5,627	6,351	11,973
	5,080,618	4,084	9,512	13,596

117,491,259 143,347 66,294 209,641

In the estimate of property and population in New Orleans, Algiers is not included.

The amount of production for the year is as follows:—Corn, 1,906,964 bushels; Rice, 1,248,314 lbs.; Sugar, 72,230 hhd.; Molasses, 3,585,416 gallons; Cotton, 13,178 bales.

The report concludes with the following strong arguments, showing the feasibility and necessity of the road in contemplation:—

"1. The Jackson railroad is demanded from the people of New Orleans, if they would retain large portions of the trade of Mississippi and Tennessee, which promise to be diverted by the enterprise of Mobile to that city, but to control which our road will furnish equal advantages, if not greater.

"2. The Jackson road, when extended as it will be to Selma and Montgomery and to Holly Springs, the Tennessee river, Knoxville, etc., and the Ohio, will have in its favor at least all the advantages claimed for the Mobile and Ohio road, which it will intersect, in addition to the advantages of larger capital in New Orleans, better organized and established markets, and that advantage which is more readily understood than defined, which grows out of habits of trade long fixed, and which cannot be readily disturbed by slight, or oftentimes by considerable advantages in other quarters. Trade will follow its accustomed channel; its diversion can only be the work of time and of great preponderating benefits. In the case of Mobile these benefits do not exist. Both cities are situated with very nearly equal advantages with regard to the Gulf of Mexico and the ports of the North and of Europe. Neither, perhaps, can expect a monopoly. There is enough for both, and with the two roads both cities can go on to prosperity—without them, neither can.

"3. The Jackson road will connect by a short and speedy route with the projected roads of Virginia, with the cities of the Northeast, without the delays of the present Atlantic or river routes.

"4. The Jackson road, by opening more certainly and speedily to us the counties of Middle Tennessee and North Alabama, will check-mate the roads of Carolina and Georgia, and divert the trade which otherwise must inevitably go into that quarter. The route is shorter to New Orleans, and the inclinations and curvatures of the alignment far more favorable—consequently freights can be made much less. Nor are there any advantages enjoyed by Charleston and Savannah over New Orleans, in freights, expenses, insurance, etc., as have been presented. The following figures, which are prepared from the best sources of information, show this:—

Charges on one bale of Cotton from Tennessee river, above the Muscle Shoals, to Charleston, S.C.

Freights from Whitesburg on steamboat to Chattanooga, at 20c per 100.....	\$1 00
Charges at Chattanooga, receiving and forwarding, drayage, etc., 50c per bale.....	0 50
River insurance, at 3-8 per cent on \$50.....	0 19
Railroad charges from Chattanooga to Charleston, 60c per 100.....	3 00
Weighing, 6 1-4c per bale.....	0 06
Storage, one month, at 25c per bale.....	0 25
Fire insurance, one month, 1-4 per cent. on \$50.....	0 13
Commissions 2 1-2 per cent.....	1 25

Total.....\$6 38

Charges on a bale of Cotton from Whitesburg on the Tennessee river, above the Muscle Shoals, to New Orleans.

Freight from Whitesburg to New Orleans.....	\$2 25
River insurance on \$50, at 1 1-2 per cent.....	0 75
Fire insurance on \$50, 1 month, at 1-2 per cent.....	0 25
Drayage, storage and weighing.....	0 50
Commission 2 1-2 per cent.....	1 25

Total.....\$5 00

The advantages possessed by these Atlantic cities are not so large as to admit of any increase in the rate of freight. With this road, New Orleans, by virtue of her local position and her reputation as a cotton mart, which give her cottons an advantage in price over those of any other market, will be able to retain her own against many odds; at all events, she will be a fair competitor with those Atlantic cities, who otherwise must have the field entirely to themselves."

New York.

Hudson River Railroad.—The Hudson river railroad it is still confidently asserted, will be completed through early in October. The section to Tivoli will be opened it is said, as early as the 10th of August. This will leave but thirty miles of steamboating.

Alabama.

We find in the Alabama papers the report of the committee appointed at a recent convention of the friends of railroads, for the purpose of preparing an address to the people of that State, in favor of extending in their collective capacity, aid to the leading lines now in progress. The address commences by statements of the influence of railroads in promoting the growth and prosperity of a community, sustained by some of the strongest illustrations that our experience in them afford. Massachusetts with one-seventh the area of Alabama, and with vastly fewer natural resources, has a larger population, greater wealth, owing in part to the influence of these works. New York was forced to construct the Erie railroad at enormous cost, through a thinly settled country, for the purpose of connecting herself with the west. From the cities of Boston, New York, Philadelphia, Baltimore and Richmond, five great lines of railway are either constructed or in progress, "stretching in a continuous chain from the Atlantic cities to the banks of the Mississippi, and only pausing there until the new states west of that river shall gather strength to carry them onward still further towards the Pacific. Every additional mile thus opened for traffic expands the area of eastern commerce, and moves further south the dividing line from whence the valley seeks an outlet for its produce by the Mississippi to the Gulf."

While the North has been active in the construction of railroads, and has built more than 1 of all the roads in progress, the States of the South have embarked slowly, and with extreme caution, in similar improvements, and up to 1851 have put in operation about two thousand miles of railway; nine hundred miles of which, or nearly one-half, are within the limits of Georgia, and about eighty-five miles in Alabama.

Georgia (says the report) the only southern state which can be said to have a complete railroad system, presents an example full of wisdom and instruction to her sister states—a lesson by which many of them are endeavoring to profit. Before the commencement of her railroads, Georgia suffered a large and increasing drain, from the emigration of her people with their property to the new states. With a soil nearly exhausted by improvident culture, and steadily depreciating in value—her towns and villages participating in the general decay, and every interest languishing—her future prospects seemed gloomy indeed. But, as her lines of improvement penetrated the interior, providing speedy channels of communication with the principal markets, the efflux of population was arrested, a general spirit of enterprise began to pervade all classes, and this noble state at once started forward upon a new and unexampled career of prosperity. Every pursuit has felt the revivifying influence, and all branches of manufacturing and mechanical industry flourish to a degree hitherto unknown among us. This revolution has followed the expenditure of fourteen millions of dollars, upon judiciously located railways, which are earning from eight to sixteen per cent. per annum profit to the stockholders upon their cost, while the taxable property of the state has increased in 1850 to upwards of \$335,600,000, being almost double the valuation before the commencement of her public improvements, and \$143,000,000 more than the taxable property of Alabama in 1849.

It was impossible that Georgia should reap this abundant harvest from her enterprise, without exciting the emulation of her sister states, and accordingly we find that, with the exception of the Gulf states, the entire south is benefiting by her experience, and where individual effort is found too feeble, the strong arm of state is readily put forth in aid of purposes so important to the common weal.

Such, being the position of railway enterprise in this country, it remains for us to inquire in what

manner Alabama is to be affected by the improvements of her neighbors, and what will be their bearing upon her future prosperity.

Alabama contains an area of 50,000 square miles, exceeding in size the State of New York with an unusual proportion of fertile soil. In 1820 her population was only 128,000. In 1830 she numbered 309,000; an increase of 181,000, or 142 per cent. in 10 years. From 1830 to 1840, her increase was 282,000, or 91 per cent. The quantity of land entered from 1820 to 1830 was 1,544,000, and from 1830 to 1840, 7,048,500 acres.

As soon as the best located lands lying in the immediate vicinity of the navigable rivers were fully occupied, the sale declined, and from 1840 to 1850, only 880,000 acres passed into private hands, and became subject to taxation. The same causes served to check the flow of population from abroad, and by the census of 1850 it is found that the ratio of increase for the previous ten years had fallen from 91 per cent to about 30½ per cent, the actual gain since 1840 being 185,500 souls, which is 101,500 less than for the previous decade, and 500 below the increase from 1820 to 1830.

Of 32,500,000 acres comprising the territories of Alabama, but 16,000,000 acres were in the possession of individual owners in 1850; the residue 17,500,000 acres—more than half the area of the State—being still in the hands of the general government. The comptroller's report for 1849 makes known the fact, that 12,000,000 acres only of the 15,000,000 acres of private lands are assessed for taxes, having an average value of \$3 98 per acre; thus showing that nearly two thirds of the lands of the state fail to yield any revenue whatever to the government.

For the past five years, the amount of lands taken up by individuals have only averaged 80,000 acres. At this rate, 250 years would elapse before the title of the United States would be finally extinguished.

Reasoning from these statistics (says the report) there is good reason to apprehend that Alabama has reached, if she has not yet passed, her culminating point. The south Atlantic states, which have hitherto greatly contributed to swell the population and wealth of Alabama by emigration, are not only retaining their people at home, by the superior facilities of intercommunication which they have provided, but are themselves, in turn, becoming recipients of the emigration from less favored districts.

A few years ago, Georgia sought a remedy against depopulation through the establishment of railways, with such complete success that she enjoys to-day the proud distinction of being considered the "Empire State of the South." Alabama has attained the period in her history when it becomes necessary for her also to guard against a similar evil. The rapid progress of improvements in adjoining states, not only increases the magnitude of the danger, but renders the necessity for exertion on the part of our state doubly urgent; lest that portion of her produce which now finds an outlet at her only commercial port, Mobile, shall be divided among themselves by our enterprising neighbors, and contribute to swell the tide of their prosperity at the expense of our own. As has been already stated, "the question is now settled, that a state without railways, will not only fail to increase in corresponding ratio with other states possessing these improvements, but she must actually retrograde in proportion to the inducements held out by her neighboring states to attract population to themselves."

The experience acquired by the practical operation of extensive railway lines in various portions of the country, during the last ten years, furnishes a safe guide in examining the prospects of a projected enterprise, and estimating their probable success. Although, save the application of a portion of the Internal Improvement fund appropriated by Congress for the purpose, this state has given

no encouragement to the construction of railways within her borders, yet individual efforts have not been wanting. The Montgomery and West Point railroad—the pioneer improvement of Alabama—extending 85 miles to the Georgia line, after encountering numerous difficulties, is now, through the well directed energies of its managers, in successful operation, and earning an income of nine per cent. on its capital. In 1848, the cause of improvement received a new impetus in the organization of the Mobile and Ohio Railroad company, for the purpose of making a railway connection between the Gulf at Mobile and the Mississippi valley at the mouth of Ohio river. This stupendous work, the longest in the Union under a single charter, will be 521 miles in length when completed, traversing four states, and crossing six degrees of latitude in its course to the Ohio, where it will connect by the Cairo and Chicago road with a series of interesting lines, embracing over two thousand miles of road already completed or in progress, and extending to all the states of the north west. Operations were commenced in October, 1848, at the Mobile terminus, and thirty-three miles of the road will be in operation in December next.

The Alabama and Tennessee river railroad, another work of eminent value to the state, was revived under favorable auspices in 1849, and is now being prosecuted with untiring zeal and energy. This road, extending about 200 miles, through a section of Alabama rich in undeveloped mineral wealth, and isolated from market, will have its northern terminus at Gunter's Landing, on the Tennessee river, and its southern terminus at Selma, on the Alabama. It will open, for the first time, to the inhabitants of North Alabama, the means of commercial intercourse with their own seaport. In addition to its local importance, this road possesses other prominent advantages. In the language of the chief engineer, "It is a link in the great chain of railroads now constructing and projected on the most direct and most expeditious route which can be selected to connect the Gulf of Mexico with the middle and north-eastern Atlantic states; a route which will present one continuous line of railroads, passing through one of the most healthy and picturesque sections of the Union." A short branch will also place this road in connection with the railway systems of Georgia and Carolina.

The Memphis and Charleston railroad, on the route surveyed through North Alabama, will connect with the Selma road by a short branch from Huntsville, and intersect the Mobile and Ohio railroad in East Mississippi, about 300 miles north of Mobile, thus giving the valley of the Tennessee abundant and easy access to the Gulf by a journey of 20 hours.

A line to pass through Perry, Marengo and Sumter counties, has likewise been projected; which will make a valuable connection between Selma and Mobile, striking the Mobile and Ohio railroad about 200 miles from that city, and accommodating a rich and populous section of the State.

East of the Alabama river, the Girard and Mobile company has been organized, to build a railway from Columbus, Georgia, to Mobile bay.—Another very feasible plan for making this desirable connection is now spoken of, by constructing a branch of 30 miles from Columbus to Opelika, and using the West Point railroad to Montgomery, from whence building a road to some point on Mobile river, a few miles above the city—thus saving a considerable expenditure, and perfecting the railway chain between Charleston, Savannah and Mobile. Which ever of these two routes be decided upon, a large business will be obtained from through travel, and a valuable part of the state opened to cultivation and improvement.

These five principal lines, if promptly carried forward, would constitute for Alabama as good a railway system, perhaps, as could well be devised. A large proportion of the vacant lands in the state would be traversed by them, and, in consequence, be eagerly purchased and brought into cultivation. Her iron, coal and marble would remain imprisoned in their native beds no longer, but the smoke of a thousand forges would arise from the wilderness, furnishing profitable employment to a numerous population. Her boundless forests of valuable timber would be transported to the sea and converted into gold. The remotest corners of the state would

be brought into convenient neighborhood, and a complete revulsion effected in her commercial and social intercourse.

The estimated cost of these railways, with ample equipments for their probable business, is nearly as follows:

Alabama division Mobile and Ohio railroad from Mobile to south line Kemper county, Mississippi—164 miles . . .	\$3,062,000
Alabama and Tennessee River railroad, from Selma to Gunter's Landing—about 200 miles	3,500,000
Alabama and Mississippi railroad, from Selma to intersection Mobile and Ohio railroad—100 miles	1,500,000
Memphis and Charleston railroad, from Chattanooga railroad to intersection with Mobile and Ohio railroad—150 miles	3,000,000
Girard and Mobile railroad—230 miles .	2,000,000

Making a total of 844 miles, requiring an expenditure in Alabama, to place them in actual operation, of \$13,062,000

Only 61 miles of the Alabama division of the Mobile and Ohio railroad are within the state, yet, (to employ the words of their report,) its Southern terminus being as her chief commercial city and only seaport, Alabama will be the largest recipient of the immense benefits which will flow from its completion. The effect of such a highway as this upon the advancement of its Gulf terminus, Mobile, cannot be overestimated. Her foreign and domestic trade would rapidly increase—capital would flow in from abroad—her exports be diversified—her harbor whitened with the canvass of every nation, and she would enter at once upon a career of solid and enduring prosperity. In whatever advancement takes place in Mobile, the state at large participates, more or less. To a planter, seeking a market for the sale of his produce, it offers increased competition, and abundant means among purchasers, enabling him at all times to make ready sales, and realize the highest prices; while, on the other hand, it furnishes him with the largest, cheapest and most varied market for every thing he wishes to buy. It throws into his immediate neighborhood a large class of consumers, for the minor products of his plantation, for which he has at present no sale. To the inhabitants of the coal and iron districts of Alabama, it becomes a great mart, from whence the products of their industry can be distributed through a large extent of country. While this great trunk line will intercept and gather into itself a vast traffic from all parts of the Northwest, by means of the many intercepting lines with which it will be united, the Selma and Tennessee road will fulfil similar conditions, in regard to the various railways of the Northeast; and thus, by a comparatively moderate outlay, the state of Alabama will be placed in profitable connection with all the grand railways through all parts of the union.

From her geographical location on the Gulf, Alabama is in an admirable position to take advantage of the railways constructing in other states, and to turn the immense trade and travel which will pour over them into her own seaport, by the early completion of these two North and South lines, and the two cross lines intersecting them. Should she seize the golden opportunity, it needs no prophetic ken to foresee for the state an increase of wealth as great and as rapid as have been realized in the last ten years, in either Georgia or Massachusetts.

While railroads are thus shown to be indispensable to the progress of the South, the sparse population which exist in most sections, renders there construction beyond the ability of private means.—Hence the greater necessity of aid from the State than exists at the North. The report states that in all cases where State aid has been extended, the result has fully vindicated the wisdom of such policy. Alabama has every inducement to assist the progress within her own territory, as this can be done without the risk of loss, and as such aid is indispensable to the completion of her roads.

If, however, continues the report the arguments thus far adduced be deemed insufficient, there is

still another most important relation which railways bear to the state, that should arrest the attention of our statesmen and legislators. A few years more and the Mississippi Valley will control the political destinies of the country. The Northern States possess five great railway avenues leading into that valley, and the South not one. These arteries of commerce ever pulsating east and west, are daily bearing immense multitudes, back and forth between the Mississippi and the Atlantic.—The extremes of the Republic are thus brought near to each other and continue to intermingling together. Commercial interests awaken mutual sympathies, and they become united by the strongest ties. How could it be otherwise than that a people thus brought into frequent communion should represent in the national councils the interests of those with whom they fraternize? By pushing on our railways, we do not only develop local resources of our own state to the utmost, but we also reach the heart of the great west, and make a highway from the Gulf to the Lakes, upon which an immense traffic would spring up, removing old prejudices and creating new sympathies—making the south and west better acquainted—opening a thousand avenues of good feeling and brotherhood, and causing our institutions to be better understood and our rights to be fully respected. A smaller sum, in proportion, than has been contributed by most of her sister States, would, it judiciously distributed among the five lines now contemplated and in progress in Alabama, be sufficient, in addition to private subscriptions to carry them forward to early completion, and enable her people immediately to realize their benefits. Should this amount be given by the State as a *bonus* for the construction of these railways, there can be no question that it would be a wise and profitable expenditure of public funds, from which she would reap pecuniarily, a tenfold return. But when it is considered that these improvements may be effected by a loan only of her credit, for the payment of which she will at all times give a substantial security; that railways less favorably located, elsewhere, are yielding fair incomes upon the capital invested; that a great and rapid increase in the value of property invariably follows their construction, and that no possible risk of loss would be incurred by the State; it is unreasonable to suppose that she will fail to meet the expectations of her citizens by refusing to extend a helping hand to the enterprise which they have undertaken.

Atlantic and St. Lawrence Railroad.

From the recent annual report of the directors of this company, we learn that the whole amount expended and charged in the general construction account is \$2,826,175 38.

The receipts into the treasury from assessments on shares to July 1st, and credited to capital stock, amount to \$1,038,419 40.

Received from the sale of City of Portland bonds, \$1,225,000.

Received from the sale of bonds of the company, including those issued to Wood, Black & Co., under their contract, \$365,000.

The whole number of shares of the capital stock of the company now standing on the books is 11,066—making

Collected on the above.....\$1,066,600 00

Collected on the above.....1,068,419 40

Balance due on stock.....38,180 60

Almost the whole amount of this may be relied on as available means.

The gross earnings of the road, including mail pay and rents for the year, are \$173,447 73.

Net income of the road for the year, \$103,228 30.

During the year ending June 30th, the number of miles run by the passenger trains is.....77,922

Miles run by freight trains.....45,040

With gravel and wood trains.....18,662

Total miles run.....141,624

Since the last annual meeting, the route from the boundary of New Hampshire to the Connecticut

river has been determined, and the line located by Berlin Falls, and thence up the Dead river to the head waters of the Ammonoosuc, following this stream to the valley of the Connecticut river at Northumberland. The grades through New Hampshire are very favorable.

Every exertion will be made to have the road completed and opened for travel and freight to Northumberland during the early part of the coming winter. No work will be done beyond Northumberland until the point of junction with the Canadian road is definitely determined and agreed upon. We understand that surveys and examinations of the different routes on the Canadian side of the line are nearly completed, and we expect the point of junction will be immediately settled, and the road definitely located to the boundary or point of junction.

The work on the Canadian portion of the line is said to be now progressing with great vigor, and that 90 miles, from Montreal to Sherbrook, will be completed in the course of the present year.—The Canadian corporation is amply provided with means, as we are assured, for the completion of their part of the joint undertaking, and no delays or suspension of the work need be apprehended on their side.

With us, the great difficulty of providing the balance of cash means required for the completion of our part of the road to the boundary is now to be met. The company have thus far met all their engagements promptly, and have on hand sufficient means to reach the Connecticut river. A contract has been made by the contractors, and guaranteed by the company, for 4,500 tons of rails, nearly sufficient, with 2,000 tons of rails on hand, purchased by them since the last annual meeting, to lay the track to the boundary line.

In order to raise the balance of cash means required to finish our whole road to the junction, the directors have authorized an issue of \$800,000 of bonds, in addition to the amount of bonds to be paid under the contract to Wood, Black & Co.—These bonds are payable in 15 years, with semi-annual interest, making the whole issue of our new bonds, \$1,500,000, secured by a mortgage of all the property of the corporation, second to the mortgage to the city of Portland, as security to the city for the loan of its bonds to the company, to the amount of \$1,500,000.

The indebtedness of the company on the completion of the road will be as follows:

Loan of the city of Portland bonds on 20 years.....	\$1,500,000
Issue of company's bonds on 15 years.....	1,500,000

Whole debt.....	\$3,000,000
less the amount of the sinking fund.....	

From the Treasurer's report we extract the following:

The whole net income to July 1, 1851, is \$205,872 21.

The income of the road, for the past year, has been derived from operating the road to Paris, 47½ miles, during the whole year, and to Bethel, 23 miles more, for 3½ months—that part of the road being opened the 15th of March last; and the income account for the year ending July 1st, presents the following results:

Total receipts from—	
142,883 passengers.....	\$81,004 99
57,647-19 tons merchandise.....	80,321 17
Mail.....	3,257 00
Rents, wharfage, and use of cars, etc., on connecting roads.....	6,864 57
	173,447 73

The current expenses have been:

For maintenance of way....	\$14,868 59
Locomotive power.....	14,892 09
Train expenses.....	16,181 74
Office establishment.....	4,520 35
Station expenses.....	7,718 25
Mail.....	353 23
General expenses.....	721 64
Fuel.....	10,963 54
	70,219 43

Net receipts for the year.....	\$103,228 30
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Cincinnati and Chicago Railway.

The Richmond Palladium states that upwards of \$100,000 have been subscribed in Cass county, payable in cash, towards the extension of the road northwest. The amount of stock taken in Howard and other intermediate counties is large, though the exact sum is not known. The prospects of the road are good.

The Newcastle Courier says that the stock already subscribed is more than sufficient to prepare the road for the metal from Richmond to Newcastle, and negotiations are on foot for means to complete the whole line early next summer, and also for the heavy T rail, and no doubts are entertained of their favorable issue. The best feeling prevails among the people, and "no road ever commenced with better prospects." The Jeffersonville company have purchased the Shelbyville and Edinburgh road, and leased the Shelbyville and Knightstown road for five years, and propose to have the whole line from Knightstown to Jeffersonville, by way of Columbus and northward to Newcastle, finished within twelve months.

Pittsburg, Steubenville and Columbus R.R.

We learn, says the Cincinnati Gazette, from private sources, that this road, the whole length to intersect the Columbus and Zanesville road at Newark, will be built beyond all question. The lettings for 110 miles of the grading and masonry, from Steubenville to Newark, is advertised in another column. Mr. Kilgore, the President, deserves great credit for the energy with which he has pushed forward this enterprise against many discouraging circumstances.

New Hampshire.

New Hampshire Union Railroad.—The grantecs of this railroad convened at Keene on the 23d of July, and chose for directors—Samuel Dinsmoor, President; Josiah Colony of Keene, Chester W. Chapin and Azariah Boody of Springfield, Joseph A. Gilmore of Concord, John G. Fuller of Hillsboro, Milan Harris of Harrisville, Asahel H. Bennett of Winchester, and Alvan Munson of Munsonville. Wm. L. Foster was chosen clerk of the corporation.

Maryland.

Coal Railroad.—We understand, says the Cumberland Civilian, that W. H. Smith, Esq. engineer and superintendent of the George's Creek Coal and Iron company, will shortly proceed to put under contract the railroad to connect that company's valuable coal property at Lonaconing with the Baltimore and Ohio railroad, either at Piedmont or at some two miles above the mouth of Savage river.

Ohio.

We learn from the Elyria Courier that the work on the Junction railroad is progressing rapidly.—The cement to be used for the construction of the stone work on Black river has arrived at that place, and a large portion of the stone are already prepared and ready for laying. Mr. Morton, the chief engineer, is actively engaged in surveying and locating the road in the western part of the State.

North Carolina.

Raleigh and Gaston Railroad.—At a recent meeting of the stockholders of this company, at Henderson, it was ascertained that \$270,000 was subscribed to the capital stock. To comply with the conditions of the act of the last General Assembly of this State, it will be necessary to raise \$130,000 more. This will be done, doubtless.

Buffalo and Conhocton Valley Railroad.

Proposals are advertised for the work on the Buffalo and Conhocton Valley railroad, from the northern part of Steuben county to Batavia—sixty-five miles. The first forty-five miles are already prepared for the rails, and will be in running order this fall. Four engines with corresponding passenger and freight cars have been purchased, and will be delivered as needed.

Railroad Iron.

THE Undersigned offer for sale 2,000 tons of Railroad Iron, to arrive at New York in the month of September next. It is of a most approved pattern and quality, and weighs about fifty-five pounds to the yard.

CHOUTEAU, MERLE & SANDFORD.
No. 51, New Street.

New York, August 9.

American Railroad Journal.

Saturday, August 9, 1851.

To our Subscribers.

Under the operation of the new postage law, by which the weight of the paper determines the rate of postage, we have recently made the large permanent addition of eight pages to the former size of our paper, making now one of the largest papers published in the United States. We shall also in future deliver paper to our subscribers stitched and trimmed, a matter of very great convenience to the reader, though with much greater cost to ourselves. The present form under the old law subjected the paper to pamphlet postage—under the new, the rates are established by weight.

With an increased size we hope to add to the usefulness of our paper. We shall now be able to give during the year a full statement of the operations of every railroad company in the United States, and shall keep our readers informed of the various improvements that are daily making in the science of locomotion, the great fact of modern times.

In our money articles we shall endeavor to give an accurate view of the state of the market, a matter of great importance to new works, that are obliged to rely upon foreign aid. We shall also give weekly, a full and carefully prepared price current of stocks and railroad securities; and also a general review of monetary and commercial affairs.

As an excellent medium for advertising all such articles as are used by our manufacturers and railroad companies, our paper stands unrivalled. We number nearly every railroad in the United States among our subscribers, and we receive no advertisements that are not appropriate to the object of our paper. Our advertising department constitutes now a full and valuable directory for persons and companies wishing to supply themselves with almost every article of iron and machinery.

Our paper is exclusively devoted to the promotion of the railroad interest. We are conscious of no local attachments or predilections. A press reflecting the feeling and spirit of New York can have no partialities of this kind. This city is the great centre of our railroad system. She is equally interested in the railroads of Georgia, Mississippi, and Illinois, as in those within her own borders.—The products to which all our railroads give an outlet to a market, come directly to this city for distribution. A New Yorker cannot understand the significance of State or local boundaries.

The JOURNAL has now been regularly published for nearly twenty years. Its existence is coeval

with our first efforts at railroad construction. It may, we believe, justly claim to be the organ of the railroads in the United States. Our position in all respects is one of perfect independence, and we shall on all occasions speak of every project as we think it deserves. Those wishing information on railroads will, we trust, find our paper to be a correct and authentic record of their condition and movements. To new works it will be of especial value in presenting their claims to the attention of the public and capitalists.

Stock and Money Market.

The panic in the money market continues without much change. Money is difficult to be had on any terms, and nothing whatever is doing in securities of new works. Stocks have receded rapidly for some days past, and they are now at a lower price than they have touched for a long time. The prevailing opinion is that money will be comparatively plenty again in a few weeks. The stringency has been owing chiefly to the action of the banks in curtailing their discounts, with a view to check the exportation of specie. The result in the end will be salutary, though but little can be said in favor of the manner in which business was almost instantly brought to a dead stand. If the issues of banks were too large, they should have been curtailed gradually, to give time to prepare for the altered state of things. Should a check be put to our exportations of gold, the banks will immediately fall back into their old habits.

It is on the whole better that a considerable portion of our California receipts should go abroad. If they all remained at home they would become the basis of a paper circulation, and the result would be an enormous inflation of our currency.

A good reason for believing that there cannot be a permanent scarcity of money, is the general prosperity which prevails. Crops are most abundant throughout the whole extent of our wide domain, and nearly every branch of industry is meeting with good returns. The receipts of all our railroads and canals are very rapidly increasing, while prices of stocks are either stationary or receding, which is a very favorable feature.

Of our leading stocks, the Erie has receded to the greatest extent. This was to be expected, without having reference to the condition of the market, or the absolute value of its stock. It may be laid down as an axiom that the stock in every road will fall when the line is open for travel. Of a road in progress, the most extravagant results may be predicated, and the community may be made, by a dexterous management of public opinion, to believe in them. Expectation in this manner is wrought up to the highest pitch. This is sure to flag after a road is opened, and its success made to depend upon its earnings. Our most successful roads have been these whose stocks at such periods have been most depressed.

Corn is now being transported from Toledo, Ohio, to New York for \$4 50 per ton, or 13 cents per bushel. The distance is nearly 900 miles—making the whole cost about one-half per cent per ton per mile.

This cost of inland transportation, a portion of it over artificial routes, is, we believe, without parallel in any part of the world. Upon the completion of the enlargement of the Erie canal, we have good reason to believe that this extremely low rate will be reduced to \$3 50 per ton, for the same distance. The return freights for heavy articles of merchandise is still lower. The President of the

Dayton and Western railroad informed us a few days since, that he paid only \$4 50 per ton, for the transportation of his iron from New York to Dayton. This sum included all charges.

The great secret of the prosperity of this city, are the facilities which she enjoys of cheap communication with the interior. Every year witnesses an improvement in this respect. So rapidly has the cost of transportation been reduced, it is difficult to estimate the lowest point to which it may yet be brought.

It will be well for all enterprises, rivals to the canal, to pay a proper regard to its capacity for cheap carriage, or they may be mistaken in their calculations, of their ability to take away its business. Every year has the importance of this great work steadily increased, till the value of merchandise that now annually passes over it, exceeds the whole amount of our foreign exports.

The city which will first be effected by the enlargement, will be *New Orleans*. It will practically change the direction of the Mississippi river. A great part of Western produce will soon take the northern route. Every year enlarges the influence of this city. A great part of the railway iron, which formerly went by way of New Orleans, is now shipped direct to New York, and thence forwarded by canal. A portion of the iron for the Jeffersonville (Indiana) railroad, has taken this direction. It cost we believe only about \$7 per ton, to send rails from this city to Louisville, Kentucky.

New Orleans is now casting about to devise means to secure herself from the rivalry of southern cities. Her great rival, after all, is New York. We can see no good reason why this city should not take from the former a greater part of the trade of the Upper Mississippi and its tributaries. She is already making strong efforts in this direction.—The figures which we have given above show what she is capable of doing. With an ability to reduce these to a much lower point, can she fail in her object to command the western trade? To a merchant in New Orleans the inroad which New York is making upon what he once considered his legitimate field, must certainly give rise to many disagreeable reflections.

Columbia and Philadelphia Railroad.—The receipts on the Columbia and Philadelphia railroad for the month of July and the fiscal year, show an increase of \$23,583, as follows:

Amount as per last report.....	\$205,674 50
Do. month ending July 31, 1851....	24,619 68

Whole amount since Nov. 30 1850....	\$230,294 18
Same time last year.....	206,710 71

Increase	\$23,583 47
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New York and New Haven Railroad.—The receipts of this road for the month of July, as compared with the corresponding period of last year, were as follows:

Passengers	\$59,829 72
Freight	8,513 30

Total	68,343 03
Less paid Harlem railroad	4,799 28

Net income	63,543 71
July, 1850	47,229 67

Increase—26 per cent	16,314 08
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Harlem Railroad.—The receipts of this road for the month of July were \$60,000 66, against \$49,025 64 in the corresponding period of last year.—Increase, \$10,975 05.

Erie Canal.—The amount received for tolls on all the New York State canals during the 4th week in July, is.....\$121,032 59
Same period in 1850..... 105,217 58

Increase in 1851.....\$15,815 01

The aggregate amount received for tolls from the commencement of navigation to the 31st of July inclusive, is.....\$1,520,873 34
Same period in 1850..... 1,240,349 68

Increase in 1851.....\$280,523 66

Naugatuck Railroad.—The earnings of this road for the month of June last were as follows:

From Passengers.....\$5,675 81
From Freight..... 14,992 80
From Mails and Express..... 312 12

Total.....\$20,980 73
The earnings of June, 1850, were..... 12,628 54

Excess of June, 1851, over 66 per cent. \$8,352 19

The receipts for the six months ending 30th June last show an increase over the same period of 1850 of 39 per cent.

The capital stock of the company is... \$926,000
Bonds bearing interest 7c per annum amount to..... 440,000

Total.....\$1,366,000

Erie Railroad.—The business on the Erie railroad for July shows an increase of about \$4,000 over June. As compared with July of last year the increase is very large.

ERIE RAILROAD, JULY, 1851.

Passengers and Mails.....\$131,093 91
Freight..... 97,366 42

July, 1850.....\$228,460 33
Increase..... 104,053 22

Increase.....\$124,407 11

The exports of specie from this port for the week ending August 2d, and for the year, are as follows:

Steamer Asia, Liverpool—American gold\$511,183
" " English silver... 5,500
" " English gold... 24,896
" " Am. and French silver..... 100,000

Schooner Euphemia, Malaga—Five francs 13,990

Total July 26 to August 2.....\$655,571
Previously reported..... 22,942,366

Total for 1851.....\$23,597,937

The following is the coinage of the Philadelphia Mint for the month of July, 1851:

	Pieces.	Amount.
Gold.		
Double Eagles.....	118,198	\$2,353,950
Eagles.....	18,285	182,850
Half Eagles.....	20,304	101,520
Quarter Eagles.....	142,732	356,830
Gold Dollars.....	226,335	235,335

Total.....534,854 \$3,240,495

	Pieces.	Amount.
Silver.		
Half Dollars.....	10,000	5,000
Dimes.....	47,000	4,700
Half Dimes.....	80,000	4,000
Three Cent Pieces....	719,400	21,582

Total.....1,891,254 \$3,275,777

	Pieces.	Amount.
Copper.		
Cents.....	771,072	\$7,710 72
Half Cents.....	100,878	504 39

Total.....2,263,204 \$3,283,992 11

Gold Bullion deposited from California from 1st to 31st July, 1851, inclusive.....\$3,053,000
From other sources..... 77,000

Total.....\$3,130,000
Silver Bullion deposited in same time.....\$13,800

Movements on the Canal.—We have obtained from some of the principal offices on the canal, the number of boats weighed during the period of navigation this season, up to the 1st August, by which it will be seen that the movement shows a large increase over a corresponding period of last year.

At Albany, the whole number of boats weighed up to the 1st August, 1851, was.....2,588
Up to same period, 1850..... 1,407

Increase over 1850.....1,181

At West Troy, the whole number of boats weighed up to 1st August, 1851, was.....4,863
Up to the same period, 1850..... 4,090

Increase over 1850.....768

At Rochester the whole number of boats weighed up to 1st August, 1851, was.....4,423
For the same period in 1850..... 2,881

Increase over 1850.....1,541

At Syracuse, the whole number of boats weighed up to 1st August, 1851, was.....2,644
For the same period in 1850..... 1,056

Increase over 1850.....1,588

At Utica the whole number of boats weighed up to 1st August, 1851, was.....2,383
For the same period in 1850..... 3,084

Decrease in 1851.....701

Railway Share & Stock List;

CORRECTED WEEKLY FOR THE
AMERICAN RAILROAD JOURNAL.

NEW YORK AUGUST 9, 1851.

GOVERNMENT AND STATE SECURITIES.

U. S. 5's, 1853.....	100½
U. S. 6's, 1856.....	105½
U. S. 6's, 1862.....	111
U. S. 6's, 1862—coupon.....	113a114
U. S. 6's, 1867.....	114½
U. S. 6's, 1868.....	116½
U. S. 6's, 1868—coupon.....	121
Land Warrants.....	140a145
Arkansas 6's.....	52a53
Alabama 5's.....	91a92
Indiana 5's.....	82a83
Illinois 6's, 1870.....	65a68
Kentucky 6's, 1871.....	109a110
Massachusetts sterling 5's.....	105a106
Massachusetts 5's, 1859.....	100½
Maine 6's, 1855.....	103
Maryland 6's.....	102½
Michigan.....	—
Mississippi.....	—
New York 6's, 1865.....	117a118
Ohio 6's, 1860.....	108
Pennsylvania 5's.....	90½a91

RAILROAD BONDS.

Atlantic and St. Lawrence, 6 percent.....	85
Baltimore and Ohio, 1857.....	94½
Boston and Providence 6's, 1855.....	101
Boston and Worcester 6's, 1855, convertible.....	107½
Bost., Concord and Mont. 6's, 1860, mortgage.....	87½
Cheshire 6's, 1860.....	91½
Connecticut River 6's, convertible.....	98
Erie 7's, 1859.....	100
Erie 7's, 1865.....	107
Erie income 7's.....	91
Hudson River 7's, 1853.....	101½
Michigan Central, convertible, 8's, 1856.....	104½
New York and New Haven.....	100½
Norwich and Worcester, mortgage, 1860.....	80a85
Old Colony, 1854.....	97½
Ogdensburg 7's, 1859.....	96
Portsmouth and Concord.....	80a85
Passumpsic 6's, 1859.....	94½
Rutland 7's, 1863.....	97
Reading mortgage, 1860.....	80
" " 1870.....	75
Sullivan, mortgage 6's, 1855.....	80
Vermont Central 6's, 1852.....	96½
" " 6's, 1856.....	91½
Vermont and Massachusetts 6's, 1855.....	86½

RAILROAD STOCKS.

[CORRECTED FOR WEDNESDAY OF EACH WEEK.]

	Aug. 6.	July 30.
Albany and Schenectady.....	96½	—
Atlantic and St. Lawrence.....	60a65	—
Androscoggin and Kennebec.....	30a35	—
Boston and Maine.....	103	103
Boston and Lowell.....	110½	—
Boston and Worcester.....	100½	100½
Boston and Providence.....	48	85½
Bost., Concord and Montreal.....	40	—
Baltimore and Ohio.....	70	—
Baltimore and Susquehanna.....	40	—
Cheshire.....	54½	—
Cleveland and Columbus.....	—	—
Columbus and Xenia.....	—	—
Camden and Amboy.....	—	—
Connecticut River.....	68a70	—
Delaware and Hudson (canal).....	113	—
Eastern.....	93½	95
Erie.....	72½	76
Fall River.....	95	91½
Fitchburgh.....	108½	109½
Georgia.....	—	—
Georgia Central.....	—	—
Harlem.....	67	68½
Hartford and New Haven.....	124	—
Housatonic (preferred).....	52	—
Hudson River.....	75	—
Kennebec and Portland.....	50a55	—
Little Miami.....	—	—
Long Island.....	16½	15
Mad River.....	—	—
Madison and Indianapolis.....	96	—
Michigan Central.....	104	103½
Montgomery and West Point.....	—	—
Michigan Southern.....	—	—
Manchester and Lawrence.....	95½	89
Morris (canal).....	15½	15½
New York and New Haven.....	113	—
New Jersey.....	133	—
Northern.....	66	—
Nashua and Lowell.....	107½	—
New Bedford and Taunton.....	111	—
Norwich and Worcester.....	53½	53
Norfolk County.....	18a20	—
Ogdensburg.....	35½	32½
Old Colony.....	65	66
Passumpsic.....	80	—
Pennsylvania.....	—	—
Pittsfield and North Adams.....	95	—
Philadelphia, Wilm'ton & Balt.....	29½	29
Petersburg.....	—	—
Richmond and Fredericksburg.....	—	—
Richmond and Petersburg.....	—	—
Reading.....	51	53
Rochester and Syracuse.....	105½	—
Rutland.....	53	47
Stonington.....	42	44½
South Carolina.....	—	—
Syracuse and Utica.....	130	—
Sullivan.....	30	—
Taunton Branch.....	110	—
Troy and Greenbush.....	90	—
Tonawanda.....	—	—
Utica and Schenectady.....	130	—
Vermont and Canada.....	103	—
Vermont Central.....	30½	33
Vermont and Massachusetts.....	26½	27
Virginia Central.....	—	—
Western.....	102½	103
Wilmington and Raleigh.....	—	—
York and Cumberland (Pa.).....	21	—

From the St. Louis Intelligencer of 10th July.

The Pacific Railroad.

Awarding of the Contracts.—The committee appointed for that purpose by the directors of the Pacific railroad, awarded a portion of the contracts for the first division yesterday as follows:

To David Woodman, of St. Louis, masonry of sections 5 and 6, and graduation of section 6.

To Messrs. Parke & Burke, of Cleveland, Ohio, graduation and masonry of sections 16, 17, 25, 30, 31, 32 and 33.

To Francis Dugdale, of St. Louis, graduation of section 22.

To George Houston, of Cincinnati, Ohio, masonry of section 22, and graduation, masonry and ballasting of sections 7, 8, 9, 10, 11, 12, 13, 23, 24, 27 and 28.

To John Weston, of Cincinnati, Ohio, graduation, masonry and ballasting of section 29.

To Michael Powers, of St. Louis, masonry of sections 2, 3, and 4.

To E. Gartwell, of Terre Haute, Ia., graduation of sections 18, 19 and 20.

All the bidders above named agree to take ten per cent. in stock in payment of their contracts.—The whole amount of stock obtained from contractors will be about \$60,000, leaving only about \$140,000 necessary to be raised in order to secure the State's subscription of \$1,500,000.

The contracts for the construction of the first division of the Pacific railroad, being about forty miles, will fall about \$35,000 below the estimates of the engineer, Mr. Kirkwood.

Proposals for the masonry and graduation of about nine sections, and the ballasting of about twenty in the first division, remain to be acted upon, and will doubtless be disposed of to-day.

Vermont

Annual Meeting of Connecticut and Passumpsic Rivers Railroad Company.—The annual meeting of the Connecticut and Passumpsic rivers railroad company was held at St. Johnsbury House on the 29th, by an unusually large number of stockholders. The report was read by the President, and accepted with great satisfaction. The progress and success of the road was spoken of as a marvel in those days of depreciation in railroad stocks generally.

Speeches were made by distinguished individuals from abroad. Among the rest, a telling one from Hon. G. H. Nesmith, upon the great resources yet to be developed in the eastern townships of Canada, and in the rich country between St. Johnsbury and the line Hon. Portus Baxter of Derby Line, advocated the extension of the road through to the line, there to connect with the Canadian road, and a resolution was presented and unanimously adopted, "that the road be put under contract to Derby Line, so soon, as in the opinion of the Directors, a sufficient amount of stock be subscribed for *at par*, to warrant its commencement." Board of directors elected:—Erastus Fairbanks, Josiah Stickney, W. Thomas, William F. Weld, Benjamin B. Mussey, Fitz Henry Homer, Oliver Dean, Emmons Raymond, John C. Lee, Asa Low, Elijah Cleveland, Arthur Latham, Lewis H. Delano, Samuel L. French, E. B. Chase. The last three are now directors, Mr. Delano being chosen in place of Mr. Sawyer, resigned, and Messrs. French of Derby Line, and Chase of Lyndon, being added to the number of the old board.—*Traveller*.

Indiana.

Our Indiana Railroad Connections.—We are delighted in having it in our power to inform our readers that the Jeffersonville railroad company has effected the purchase of the Edinburgh and Shelbyville railroad, and have already taken possession of it. They have also leased, for the term of five years, the Shelbyville and Knightstown road. This is a move of great importance to Louisville, as it secures to us the trade of the richest portion of Indiana.

The necessity of completing the road from Jeffersonville to Columbus at the earliest day practicable, in order to put it in direct connection with the Shelbyville and Knightstown roads, and in fact all the important roads in Indiana, must be apparent to every one. The proposed subscription of \$200,000 to this road by our city authorities, will enable the directors to complete it to Columbus this year or early next year, and we are glad that the vote is to be taken on the proposition at an early day. Every day's delay is so much lost, and let us but once open communication with, and divert the trade of Central Indiana to this point, and we defy Cincinnati or any other place ever to wrest it from

us. The opening of the Jeffersonville road will work a greater change in the business of Louisville, than the most sanguine friends of the enterprise have any conception of.—*Louisville Courier*.

Central Railroad Continuation.—Our citizens will be gratified to learn that the line of railroad from Michigan city, West, to the Illinois State line, and thence to Chicago, is making rapid progress towards completion. An efficient corps of engineers are superintending the grading of the track, and the timber for the superstructure is already being got out all along the route. Mr. Brooks, the indefatigable Superintendent of the Central road, is now engaged in an examination of the line, and his presence on the ground will doubtless give renewed impetus to this great and much needed enterprise.

Our Chicago neighbors feel naturally much interested in the speedy completion of the railway communication between their city and ours, and will, we are assured, use all the means at their command, to facilitate the operations of the company in their endeavors to get the entire route in running order, and fully in operation by the opening spring.—*Detroit Free Press*.

Ohio.

Hamilton and Eaton Railroad.—We learn from the Cincinnati Gazette that a Committee of the City Council, sent out to examine the condition of the Hamilton and Eaton railway, reported to council, after careful examination, that the line is rapidly approaching completion, and the first eighteen miles from Hamilton to Camden, will be in running order by the 1st of November next, and from thence to Eaton in the Spring, if the work is pushed. The road from Eaton by Richmond and New Castle to Chicago, is also in rapid progress. The following abstract was appended to the report:—

Eaton and Hamilton Railroad Office, }	
Eaton, Ohio, June 21, 1851. }	
Abstract of condition of work on the Eaton and Hamilton railroad, June 20, 1851:	
Cash disbursed on account of construction and expenses therewith connected.....	\$70,377 71
Bridge, lumber, cross-ties, &c., paid for in stock.....	5,900 00
Depots and Real Estate donated at Eaton and on the line.....	9,700 00
Thirty miles of Right of Way donated and to be paid for in stock.....	15,000 00
Work done this Month, and materials in process of operation, estimated to be worth when delivered or received.....	30,000 00
Four thousand tons of iron contracted for, to be paid for in bonds.....	145,000 00
Amount subject to city bonds.....	\$275,977 71

Besides construction, the lumber for, and building of all the bridges on the line, and about 70,000 cross-ties are contracted for and being, from time to time delivered, towards which about one-fourth is to be received in stock.

After a debate, a resolution reported by the committee was adopted, viz:

Resolved, That the President and Recorder for the time being, of the City Council of the city of Cincinnati, proceed to issue the Bonds of the city of Cincinnati, to the amount of fifty thousand dollars, agreeable to the provisions of the resolutions and ordinance of the 29th November, eighteen hundred and fifty, and they take from the officers of the Hamilton and Eaton railroad company, a mortgage to secure payment and the interest, agreeable to the provisions of said resolution and ordinance, and be approved by the council, said President and Recorder shall issue said bonds.

Cincinnati and Dayton Railway.—It is now certain that the Cincinnati, Hamilton and Dayton railway will soon be opened to the public. The whole line to Dayton, presents unmistakable evidence that the road will soon be ready. The rails are down on a large portion of the line, a few sections here and there remaining unfinished. Locomotives and gravel cars are running to and fro trans-

porting materials, &c. Station Houses for passengers and freight, and work shops are going forward rapidly at Cincinnati and Dayton—water and wood stations are in progress—the difficulty at the crossing of Mill Creek, has been overcome—the bridges over the Creek and the Miami are nearly all ready, as are the passenger and burden cars. We hear that conductors, and agents have been appointed, who are perfecting themselves for active duty.—But a few weeks will elapse before you may all ride at ease on this excellent road, in cars of the first class, under gentlemanly conductors, and at low rates. New lines of Omnibusses are to run in connection with this road to all parts of the city.—A general ticket office will be established at or near the corner of Broadway and Front Streets. The officers, directors and contractors, are all very busy in getting all things ready and in first rate order.—*Cincinnati Gazette*.

Ohio and Indiana Railroad.

This company is organized under a charter granted by both states, for constructing a railroad from Crestline, the western terminus of the Ohio and Pennsylvania railroad, to Fort Wayne, on the Wabash and Erie Canal, in the state of Indiana. Its length is 132 miles, through a country unsurpassed in fertility and capacity for the production of agricultural articles of commerce.

The route passes through the counties of Crawford, Wyandott, Hardin, Allen, and Van Wert, in Ohio, and Allen county, Indiana, and through the towns of Bucyrus, Upper Sandusky, Lima, Delphos, and Van Wert, in Ohio, and terminates at Fort Wayne, Indiana.

The subscriptions of stock have been procured from the following sources:—

Crawford county.....	\$100,000
Wyandott, ".....	50,000
Allen " Ohio.....	100,000
Allen " Indiana.....	100,000
Townships, subscriptions.....	50,000
Individual subscriptions.....	70,000

Total.....\$470,000

The amount necessary to grade and bridge the road, according to the estimate of the Engineer, J. R. Straughan, Esq., will be something short of \$3,800 per mile, or not far from \$500,000 for the whole road. This road passing over the level table lands of Ohio, will be one of the straightest and cheapest in the country. No grade will be over 26 feet to the mile, and the curvatures will be very slight. The Engineers are locating the track for letting, and if the directors can negotiate bonds for \$200,000, from the county of Allen in Ohio, and Allen in Indiana, which they will no doubt succeed in doing, the whole line will be put under contract this fall.

There is one fact connected with this railroad, which should command attention. There are no competing roads running in the same direction. All the improvements of Ohio and Indiana run north and south from the lake to the river. The Pittsburgh Gazette remarks: "All other lines proposed from this city, and Wheeling, and Parkersburg, take a southwest direction towards Cincinnati. This is the only great east and west railroad which penetrates the northern and richest parts of Ohio and Indiana, and ere long we may add Illinois, until it reaches Chicago, Galena, and the mouth of Rock River, on the Mississippi—for a branch is now projected to that point.—Is is the only direct east and west railroad to the great Northwest, comprehending in its range, not only the northern parts of Ohio, Indiana, and Illinois, but also Michigan, Wisconsin, Iowa and Minnesota. A road more important, and which will prove more beneficial, and which will pay better dividends, we

believe has not been built or projected in this country."

Vermont.

Vermont Valley Railroad.—The length of this link in the great Connecticut chain of railroad is about 23 miles. There has already been expended in construction \$895,216 05. The amount required for the completion of the road is stated at \$123,265 62,—making the entire cost \$1,018,481 67, or over \$50,000 per mile!

The receipts of the company have been as follows:—

For capital stock received.....	\$180,895 00
For bonds issued.....	409,200 00
For temporary loans.....	11,765 62

Total amount received.....\$901,860 62
Deduct total of expenditures, as above 895,216 05

Balance on hand..... \$6,644 57

The President of the company is Hugh H. Henry, Esq., the Treasurer, Robert Schuyler, of this city.

Louisiana.

The Red River Railroad.—The New Orleans papers speak in enthusiastic terms of the advantages to be secured by a railroad from Shreveport to that city. The rich tract along the Red River, and about the head waters of the Sabine, Trinity, and Brazos rivers, is undoubtedly a section of country to which New Orleans must in future look as one of the principal sources of her trade; and the rapidity with which it is now being settled, makes it important for that city to open the means of sure and constant communication with it at all seasons, before its trade finds its way by its rivers to the Gulf coast, and thence, like the commerce of all Southwestern Texas, forms its alliances and connections with New York.

This project is by no means a new one. As long ago as 1846 or '47, a series of articles was published in the Concordia Intelligencer, showing the importance to New Orleans and the upper regions of Texas, of opening a railway communication from Shreveport to some point on the Mississippi river. A general reconnoissance of the country was made, and the cost of the road was then estimated at less than ten thousand dollars per mile.

Again in 1849, in a series of articles in the same paper, the subject was revived, and the feasibility and cost of extending the road to Rio Grande and ultimately to San Diego was considered, and the project was urged upon the citizens of New Orleans as the initial step to secure the terminus of the great Pacific highway at our doors. The route subsequently marked by Gen. Worth as the route for the Pacific railway, was the same as indicated by the writer of those papers. The cost of the road as estimated by Gen. Worth, and as stated in those papers was the same.

The New Orleans Crescent says:—

"From lake Providence to Shreveport is but seventy-five miles. From Vidalia to the same point on Red River, the distance is about one hundred miles. From either of these points, the country is extremely favorable for the construction of a railroad. The cost would not exceed \$750,000, or \$1,000,000, and it would pass through a body of rich public lands, from which a donation could be obtained from Congress, that would pay for the construction of the road. If prosecuted with energy the road could be built in a year. It would terminate on the river so near New Orleans, that there would be no danger of the trade being diverted from us to Charleston or other Atlantic ports, for it would cost no more to bring the cotton from it to our city than to ferry the bales across the Mississippi and place them on a railway car on the opposite bank.

This road would therefore secure all the benefits to this city that a railway hence directed to Shreveport would give us. It would not be a rival to any other enterprise, and thereby avoid all clashing of interests. It would open a permanent communication with the fertile regions of Bayou Mason, the Tensas, Black and Washita rivers, now closed to us by low water six or eight months in the year; and should the Opelouses road be extended to Shreveport and take the trade beyond that point directly to the city, this road through the upper parishes of the state, from the Red River to the Mississippi, would find ample support in the trade along its line, and would add each year benefits to the country through which it passed, greater in value than the whole cost of the road. We hope the citizens of the northern portion of our state will not allow this project to remain long a mere design on paper. The difference in the cost of their groceries, bagging, and the freight of their cotton in one year would pay for the road."

For the American Railroad Journal.

Opening of the Ohio and Pennsylvania Railroad.

HENRY V. POOR, Esq.

Sir,—On Wednesday, July 30th, the formal opening of the first section of the Ohio and Pennsylvania railroad took place, by conveying over this portion of the line about 300 invited guests including the authorities of the cities of Allegheny and of Pittsburgh.

This section begins at the Federal street depot, in Allegheny city, on the right bank of the Allegheny river, and of the Pennsylvania canal, and continues down the right bank of the Ohio river, about 26 miles to the mouth of the Big Beaver, and thence two miles farther by the left bank of that stream to the town of New Brighton, a total distance of 28 miles from Allegheny city.

The excursion train, led by the *Salem*, and Norris engine, made the distance down in 2.49—up in 2.20. The time was slow because the track is not yet entirely ballasted, and some ugly land slides rendered it necessary to run with great caution.

The plan and profile both, are, however, well adapted to high speed; the whole of the 28 miles now opened being nearly level, and having no curvature of less than a half mile radius.

The road for this distance is graded for a double track, and the streams encountered are mostly bridged with stone arches.

The track consists of a 4 by 10 sub-sill laid flat upon the grade, and reinforced at the joints by a short parallel piece, externally. Cross-ties of oak about a yard apart, rest on the sub-sills, and upon these ties the rail is secured by the usual spikes with wrought iron chains at all the joints.

The rails, in lengths of 20 feet each, weigh 400 lbs. or 60 lbs. to the yard, lineal, they are well shaped, with a heavy head, symmetrical on both sides so as to admit of reversion.

The depots, and water stations, (now nearly finished) are plain and substantial structures, planned evidently, upon the basis of combining utility with economy.

The whole work is very creditable to the experienced engineer, (S. W. Roberts, Esq.,) who planned and executed it. It has been thus far finished, within the space of fifteen months.

Arrived at the Merrick House, New Brighton, a plain but substantial dinner was found prepared, and partaken of by most of the guests, at fifty cents a head.

A meeting was then held which was eloquently addressed by the Chief Engineer. He reiterated the policy of his company to push out their line upon the water shed of Ohio, to the Cleveland and Columbus road at Crestline, 185 miles from Allegheny

city, and there to branch and continue it, by the exertions of other companies, through Bellefontaine, Indianapolis, and Terre Haute, to St. Louis, on the west, and by Fort Wayne and Chicago on the northwest.

In its passage outward this line makes an important connexion with the Cleveland and Pittsburgh railroad at the new village of Alliance, and from the observations of the orator, it would appear that the first business object of this line is to gather up the way trade of the western reserve, the great wheat growing district of Ohio—now raising six millions of bushels of wheat annually—and being emphatically, *the land of bread*.

Secondly, to push out through Central and Northern Indiana (by the aid of others) to St. Louis and Chicago, and thus become the trunk line for the trade of those important geographical points.

And *thirdly*, by the cut-off route from Loudonville through Mount Vernon, to Springfield, 110 miles, to run to Cincinnati by a line, indirect, it is true, but still short enough (340 miles in all from Pittsburgh) to enable this route, if sustained by its way trade—as is expected—to compete powerfully for the through business. Still this Cincinnati connexion is deemed entirely *secondary*, and not at all indispensable to the success of the line, as a paying road.

It remains to be seen, however, whether the powerful attraction of this great commercial centre, will not make itself felt, to a degree which will render it difficult to leave its sphere of attraction, when once fairly entered with a railroad line; such points are not to be disregarded or lightly treated, in the projection of railroad routes across the country.

Some observations in the course of the address of the chief engineer being thought to reflect upon other railway lines, in which Pittsburgh now takes interest, were replied to by a member of the council in a manner which clearly showed that while Pittsburgh was ready and willing to award to the president and directors of the Ohio and Pennsylvania railroad company, and to their distinguished engineer, a just meed of praise for their able and skilfully directed exertions—nevertheless, that city was not disposed to limit her railway connections west to that line alone, but to encourage others of importance to her prosperity, whether they should prove to be competitor lines or not.

The other routes referred to, strike for Cincinnati as a point in chief,—if then the business of that place is but secondary to the Ohio and Pennsylvania railway, in her grand movements upon St. Louis and Chicago, *those other routes can be in no sense rivals of this*.

The necessity of an immediate connection of the Ohio and Pennsylvania railroad with the Central Pennsylvania, or its prompt continuation from its present terminus in Allegheny City into the Town Plat of the city of Pittsburgh, was also alluded to at the meeting. Pittsburgh being unwilling that this great line of railway should be broken by the Allegheny river—and it is evident indeed, that it cannot possibly be to the interest of either of the great railways reaching the Allegheny river, on opposite banks, to stand thus, severed by that stream, and render necessary a vast and costly system of drainage, which a viaduct constructed at a proper point would at once prevent.

Where that point is, none are more capable of deciding than the eminent engineers employed by the two companies, at least such is the opinion of

Excursion.

For the Railroad Journal.

Cincinnati and Seaboard Railways.

H. V. Poor, Esq.

Sir,—The competition in railways west of the Alleghenies, have been the means of developing, quite recently, a most important railroad line from the Seaboard to Cincinnati; which, but for the excitement produced by rival routes, might have long remained dormant, and perhaps have never gained the prominence it merits, as the shortest of all projected routes, from the sea to the commercial centre of the west—taking Philadelphia as a common point upon the first, and the city of Cincinnati, as holding at the present time, the latter position.

This route is the one lately taken hold of with so much energy by the citizens of Pittsburg, under the spur of events, tending by the action of the Cincinnati and Belpre company, to render the Hempfield route a trunk line for some of the leading railways of Ohio.

The route into which the city of Pittsburgh is now infusing a vitality that will probably enable it to triumph over all obstacles, begins with the Pittsburgh and Steubenville railway, and is continued through Ohio, by the Steubenville and Indiana, and the Zanesville, Wilmington and Cincinnati lines.

This route truly deserves the designation of the *Grand Diagonal Line*. Excepting your New York and Erie railway, which appears to have a higher destiny than merely to command the business of a single line or point of country—the Seaboard and Cincinnati railways, are four in number, and designating them from the common point of Philadelphia, southward, have the following lengths to Cincinnati:—

1. *Philadelphia* via the Pennsylvania railroad, through Pittsburg; the Ohio and Pennsylvania railroad to Loudonville, Ohio; the Loudonville, Mount Vernon and Delaware railroad, to Springfield; and by the Little Miami railroad to Cincinnati.—Total distance, 695 miles.

2. *Philadelphia*, via the Pennsylvania railroad through Pittsburg; the Pittsburg and Steubenville railroad, to Steubenville; the Steubenville and Indiana railroad, and a modification of its Western division, through or near Cadiz and Cambridge, to Zanesville; the Zanesville, Somerset, Lancaster, Circleville, Washington and Wilmington railroad, to the mouth of Tod's Fork, on the Little Miami; and by the Little Miami railroad, to Cincinnati.—Total distance, 645 miles.

3. *Philadelphia*, via the Pennsylvania railroad, through Greensburg; the Hempfield railroad to Wheeling; the Wheeling and Marietta railroad along the Ohio river to Marietta; the Cincinnati and Belpre and Hillsborough railroads to Lovelands, on the Little Miami; and by the Little Miami railroad, to Cincinnati.—Total distance, 675 miles.

4. *Philadelphia*, via Baltimore and Wilmington, to Baltimore; the Baltimore and Ohio railroad to Tygart's Valley bridge; the Northwestern Virginian railroad to Parkersburg; the Cincinnati and Belpre and Hillsborough railroads to Lovelands, on the Little Miami; and by the Little Miami railroad to Cincinnati.—Total distance, 685 miles.

None of these great lines have been actually traced upon the ground *throughout*, and some portions of the distances have to be estimated. They have, however, been compiled in most cases from the statements of the friends of the lines, and may be relied upon as approximately correct.

The Baltimore line west, is taken at eleven miles more than the recent statement of its President, he

having claimed credit in the account for eleven miles possible saving, by the "Knobly cut off," abandoning Cumberland; an improvement which will not for many years (if ever) be made.

The third main line may leave Wheeling for Cincinnati, by the Central Ohio railroad, through either Zanesville or Columbus, and may be a few miles shorter by the former, or longer by the latter point.

As we have said, the distances in the aggregate are nearly correct, and will exhibit to your readers, in a compact form, the results to be expected in point of distance, from these four great lines, all of which promise from present appearances, to be in action within a few years. The longest one (the Northern Ohio) coming first into the field, and backed by its rich and weighty way trade, standing ready to wrestle shortly with its shorter rivals, when the time of trial comes.

Your attention is earnestly invoked to the second main route, "*the grand diagonal line*," which will certainly gain the point of Cincinnati, in a distance of 645 miles from Philadelphia, or be respectively, 50, 40 and 30 miles shorter than its three competitors.

Fifty miles shorter than the Northern Ohio, and thirty miles shorter than the Hempfield route, is something of importance to your readers, and to the public.

DIAGONAL.

For the American Railroad Journal.

Minot Rock Light House.

H. V. Poor, Esq.

Sir,—There has been a disposition in one quarter at Boston, which some of the public prints there have rather encouraged than otherwise, to attribute the destruction of the Minot Rock Lighthouse to faults in its plan or construction. Had its destruction not been attended with loss of life, this disposition might have found a "fit audience," but it would have been a very select one. The sympathy naturally felt for the two brave men who were lost with the light, found some relief in fixing the odium of that loss, with little examination, on those connected with its erection, and this spirit seems to have found a ready clerk in the keeper of the light, who with more rudeness than reason, had attacked its fitness for its purpose, had foretold its destruction, and may have been at a loss whether most to lament or to crow at the result of his prophecy.

The task of finding fault is so easy and attractive that it may safely be left in the hands into which it has fallen.

The last number of Appleton's *Mechanics' Magazine*, contain a copy of the report of Capt. Swift to Col. Abert of the topographical engineers, on the loss of the Minot Rock lighthouse. The details there given are very satisfactory, and show that every precaution was taken which human prudence and foresight could take to render the building safe as well as useful. It is no easy task to predicate, of any structure exposed to the sweep of the sea in storms, the right height, strength, and other qualities necessary to its permanency; and where in this respect Telford, Rennie, and the best English Engineers have so frequently failed in their early experience, we cannot expect to operate on the same ground without meeting occasionally with similar proofs of the incalculable power of the element we are contending with. In the case of the Minot Rock lighthouse, it is very evident now that the body of the light was not sufficiently elevated to clear the unusual storm which prevailed on the coast at the time it was carried away, and which has not been equalled since the September gale of 1814. We will venture to say that the testimony

of a large majority of sea-faring men would have been in favor of its having sufficient height. Engineers must, to some extent, depend on such testimony in planning such structures. So soon as the sea reached the body of the light no amount of bracing or of tie-rods could have saved it, and that it did reach it, and that this alone led to its destruction is to my mind abundantly evident.

We know how difficult it has been lately to procure from Congress the appropriations necessary to the perfection of the lighthouse system along our coast; and how many lives are lost yearly, and how many valuable ships and cargoes are destroyed, in consequence of the entire want of lights, or even beacons, at many points where lights are necessary, and of the very imperfect distinguishing qualities of those which are in operation.

Captain Swift has labored zealously to procure the erection of new lights, and by bringing into notice certain cheap forms of lighthouse structures which have been successfully introduced on some points of the English and French coasts, he has reduced the difficulty of obtaining the requisite appropriations for their construction. The destruction of the Minot Rock light is no proof that such an iron structure is inapplicable in such a situation. It proves simply that to ensure the permanency of such a structure there, it requires to be modified to meet more exactly the circumstances of its position; and, with the experience in this case obtained at the expense both of distress and mortification, no man is so competent as Captain Swift to build a second light in the same place.

The amount of life saved by the erection of lights in such exposed positions, and the seasonable warning which they give to strange vessels coming on our coast, seems not to have been taken into consideration in the present instance; nor does it seem to have entered any one's mind to credit Captain Swift, and all those who like him have been laboring to procure the erection of lights at the many exposed and dangerous points along our coast, with any of the lives which their efforts have necessarily been the means of saving, or any of the property which has thus been enabled safely to reach a harbor. The captains of vessels at sea in distress know how to appreciate such labors, but we on land, safe from the fears and dangers of the storm, think little of the comfort and security which every new beacon affords the seaman, and take still less account of the difficulties attending their construction, and of the untiring efforts which have to be made to procure funds for their erection. If a building is destroyed by fire, and a life lost in consequence, much uneasy feeling is exhibited in print, which looks almost like affection when we consider how little effective notice is taken of the frequent shipwrecks occurring along the coast, and the frequent losses of entire crews of brave fellows, when within hail of a harbor.

Three-fourths of these shipwrecks are attributable to the want of a perfect system of lights, and three-fourths of them might be saved by the hearty co-operation and league for a short time of all men having any claim to good feeling, or disposed to devote adequate time either to the humane or to the merely economical consideration of the question. A tithe of the amount of interest given to some party election of little moment, would ensure the attention of Congress to this most important subject, and lead to the expenditures necessary to its being placed on the safest footing which the nature of the case admits. The neglect of our light-

house system is fraught with an incalculable amount of distress, the exhibition of which has thus far had as little effect on the community, as the destruction of human and animal life in the Roman circus, had on the minds of the spectators there.

Your obedient servant,

A SUBSCRIBER.

Patent Compound Rail.

Below we give the circular of the proprietor of the Patent Compound Rail, of which we have given frequent notice in our paper. We also give the certificates of Mr. Vibbard, of the Utica and Schenectady road, Mr. Post of the New York and Erie road, and Mr. Tucker, President of the Reading railroad; all of whom speak in the highest terms of this improvement.

The theoretical advantages of this rail are generally admitted. It is now practically working out an equally favorable opinion in its use. Those who have tried it, we believe without exception, are full converts to its merits, and we are glad to learn that it is becoming very rapidly introduced upon our roads.

The undersigned begs leave to call public attention to his "Patent Compound Rail," for railways, a tolerably correct view of which is given in an engraving in the Railroad Journal. Since this rail was first introduced, (now nearly two years), it has more than fulfilled the expectations that were entertained of it, and received the approbation of all who have had it in use, as well as those who have examined it; an increasing interest is being directed towards it in consequence of the defects in the ordinary forms of rails, and which become more and more apparent the longer they are continued in use. The object aimed at in the composite forms is to produce a rail which shall approximate as nearly as possible to a continuous bar from one end to the other of the road. I submit whether this is not practically accomplished by the rail herewith offered. The cross joints in the common form are avoided; chairs, clamps, plates, or other contrivances for securing the ends of the rails, are rendered wholly unnecessary; no abrupt depressions or elevations (occasioned by the settling of the rail at the joints) occur, but a smooth and even rolling surface is obtained, over which the engines and cars pass with scarcely any noise, and without any of that disagreeable jarring and oscillating motion usual upon the ordinary forms of rails.

If these results attend the use of the compound rail, it follows as a consequence that much of the wear and tear of rails and machinery will be saved, for if the rolling surface be uniformly smooth, there will be no concussion between the surfaces at rest and in motion; and if no concussion, then the engines, cars, and rails will last longer; so if there be no cross joints in the track, there will be no depressions thereat, but a smooth plain obtained, and the power required to pull loads of equal weights, or maintain equal speeds, will be less upon the compound than upon any of the old forms of rails. But the advantages of a continuous track over one composed of short bars laid together at the ends with joints (and frequently with wide spaces) at every fifteen or twenty feet, are too manifest to those familiar with the management of railroads to need demonstrating at my hands. It is admitted by all that the form of rail in common use is marked by serious defects, the chief of which is at the joints, (the weak point in the track,) and any improvement that obviates these evils, accomplishes a very important desideratum, effects a great saving in current depreciation of both rails and machinery, and correspondingly in the cost of running railroads, while it increases materially the safety and comfort of all who travel thereon.

By way of showing that these claims are not advanced as mere assumptions, I invite those interested in such matters to inspect the rail in use. A word as to the cost of this rail:—This, under certain circumstances, may be something greater than the common form, owing to the enhanced cost of manufacture; this, however, cannot be much, and is more than compensated by the improved quality of

iron obtained in a rail of this form, arising from the greater condensation of the iron, while the cost of placing this rail upon the road is less than the common form, the expense of rivets and riveting being less than the cost of chairs, as shown by the following:—

Common or solid rail.—Cost of chairs, fitting same to rails and cross-ties, 528 joints per mile, at 55 cents per joint, rails 20 feet long \$291 00
One extra spike at each joint is 528 spikes, two to the pound at 3½ cts. per pound, is 9 00

\$300 00

Compound Rail.—Rivets, 4,750, ½ diameter, at three to the pound; is 1,583 pounds to the mile, at 4½ cts. per pound, is \$75 18
Riveting at 24 cents per rod, is per mile 76 80

152 00

Difference in favor of laying one mile of track with compound rail \$148 00 or about one and a-half dollars per ton of iron.

There are ten miles of these rails upon the Utica and Schenectady railroad. They are likewise in use upon the New York and Erie, Philadelphia and Reading railroads, and I refer to the annexed correspondence for the opinions of the gentlemen in the management of those roads, as to its merits. I think I am justified in saying that enough has been done by way of trial to demonstrate the safety and economy of this rail.

Orders for considerable quantities are now being executed for the Hudson River, Rochester and Niagara Falls, Buffalo and Conchocton Valley, Buffalo and Rochester, Utica and Schenectady, Syracuse and Utica, Michigan Central, Madison and Indianapolis, Cleveland and Columbus, and other leading roads in the country.

Utica and Schenectady R. R. Office, }
Schenectady, March 1st, 1851. }

J. F. Winslow, Esq.

Dear Sir,—Yours of the 4th of February, submitting various interrogatories relative to the "Patent Compound Railroad Iron" furnished by your company, and laid down upon this road, was duly received, to which I shall reply in general terms, making the ordinary T rail the standard of comparison. From my own observation and the experience of locomotive engineers, who are daily running upon the compound in connexion with the T rail, (which is superior of its kind,) I am clearly of the opinion that there is a saving in the wear and tear to the machinery, of at least twenty-five per cent.

In passing from the T to the compound rail with the trains, a much higher rate of speed is attained with the same power, which can only be attributed to the non-resistance of the joints. There can be no doubt that a less expenditure of motive power is required upon the compound rail in pulling loads of equal weight, but to what extent I am unable to say.

In November, 1849, about one thousand feet of the compound rail, furnished by you, was laid down in connection with the T rail, in the main track, over which all trains passing westward from Schenectady were run. This part of the track has not been repaired or adjusted, nor has it required to be, while the T rail, which was laid at the same time, and with great care, has required repeated adjustment; the ten miles laid last fall has also kept in admirable adjustment.

The experience on this road, in that respect, is the same as upon all others where the T rail is in use. A very large proportion of the expense of adjusting the track, is at the joint or end of the rail, which is caused by the weakness or break in the track at that point.

This defect is entirely obviated by the use of the compound rail, which gives an equal and perfect bearing upon all the cross-ties, thereby reducing the expense of keeping the track in adjustment more than one half. No part of the compound rail has been broken or been thrown out, while a large number of broken and defective bars of the T rail have been removed; neither has a wheel or shaft broken upon this part of the rail.

No chair is required in laying the compound rail,

the saving in the expense of which, I consider more than equal to the additional cost of rivets, and riveting together the bars. Two or three rivets only have broken, since the rail has been in use, which, upon examination, proved to have been defective when driven.

Additional experience is wanted to determine the durability of the compound rail, in comparison with the T rail, that the result will be in favor of a compound rail, I see no reason to doubt.

Very respectfully,

Your obedient servant,

C. VIBBARD, Sup't.

NEW YORK AND ERIE RAILROAD.

Way and Structure Department, }
Engineer's Office, July 7, 1851. }

J. F. Winslow, Esq.

Sir,—I have very recently made a critical examination of the compound or continuous rail put down upon this road by Mr. A. B. Seymour, in September, 1849. This rail has now been in use twenty-two months, on a portion of the main line, nearly two miles from any station, where it has been subjected to the highest speed of a very heavy class of engines and cars. According to the best of my knowledge and belief, there has not been an hour's work done in adjusting this rail since it was first laid; yet, it is now in good order, and shows but little of the effects of wear and tear.

In my opinion this rail is the safest one in use, and with slight modification can be made as economical if not much more so, than the ordinary T rail. In many other respects I consider this two-part compound rail as superior to any other with which I am acquainted.

Very respectfully,

Your obedient servant,

S. S. POST.

Office of the Philadelphia & Reading R.R. Co., }
Philadelphia, June 26, 1851. }

J. F. Winslow, Esq.

Dear Sir,—I duly received your favor of the 21st instant. The compound rail seems to do perfectly well thus far.

Yours very truly,

JOHN TUCKER, President.

TO CONTRACTORS.

Belpre and Cincinnati Railroad.

Engineer's Office, }
Chillicothe, July 30, 1851. }

SEALED PROPOSALS will be received at the Engineer's Office, in Chillicothe, until the 18th day of September, 1851, for the Graduation, Masonry and Bridging of 42 miles more of their road;—25 miles being between Greenfield and Blanchester, and 17 miles east of the 11 miles now under contract east of Chillicothe.

Plans, Profiles and Specifications will be ready for examination, at the Engineer's Office, on and after the 10th day of August. Blank Proposals will be furnished to Contractors, and all necessary information given upon the line or at the office concerning the quality and quantity of work.

W. P. CUTLER, Pre'st.

A. KENNEDY, Chief Engineer.

Virginia Locomotive and Car Works.

Wolfe Street and River Potomac, Alexandria, Va.
SMITH & PERKINS, Proprietors.

MANUFACTURE

Locomotive Engines and Tenders.
Marine and Stationary Engines and Boilers.
Chilled Car Wheels and Axles.
Patent Chilled and Wrought Slip-tire.
Machinery and Castings generally.

The undersigned having erected very extensive shops, and procured the most modern machinery and tools, are prepared to execute orders for Locomotive Engines, Cars, and Machinery of all kinds, with despatch, and on the most favorable terms.

R. C. SMITH,

Late of the Alexandria Iron Works.

THATCHER PERKINS,

Late Master of Machinery on the Balt. & O. R.R.

July 22, 1851.

Bridges & Brother, DEALERS IN RAILROAD AND CAR FINDINGS, 64 Courtlandt street, New York.

Having established a general Depot for the sale of articles used in the construction of Railroads, Locomotive Engines and Railroad Cars, we would invite your attention to our establishment. We have already in store a good assortment of CAR FINDINGS and other articles used in the trade, and feel justified in saying, that should you desire anything in our line, we can supply on terms perfectly satisfactory, and in the event of your desiring to order, you may feel assured that your terms will be as good as though you were here to make your own purchases.

Among our goods may be found Railroad Car Wheels, Axles, Jaws and Boxes, Nuts and Washers, Bolts, Brass Seat Hooks and Rivets, Window and Blind Springs, Lifters and Catchers, Door Locks, Knobs and Butts, Ventilators and Rings, Car Lamps, Coach and Wood Screws, Jack and Bed Screws and Babbitt's Metal; also Plushes, Damask, Enameled Head Linings, Cotton Duck for Top Covering in width sufficient without seams, Curled Hair and all other articles appertaining to cars.

Also a new and valuable CAR DOOR LOCK, well adapted to the Sliding Door. This is decidedly the best yet introduced.

LOCOMOTIVE ENGINE LANTERNS, the best article made in the country. Whistles, Gauge and Oil Cocks, Hemp Packing, American, Russian and Italian. We are also agents for Lightner's Patent Journal Box for Car Axles, that invaluable invention, for the economical use and preservation of Car Journals.

Coach VARNISH and Japan of the best quality.

We would also offer our services for the purchase as well as for the sale of goods on commission.—Both members of our firm have had the experience of many years in the manufacture of Railroad Cars, and our Senior was a member of the well known house of DAVENPORT & BRIDGES, Car Manufacturers, Cambridgeport, Mass. Without knowledge of matters pertaining to Railroads, we feel quite confident in giving satisfaction to both buyer and seller, and hope that through assiduity and attention to any business entrusted to our care we shall merit a continuance of confidence and patronage.

BRIDGES & BROTHER.

July 22, 1851.

Lightner's Patent Axle Boxes.

THE Undersigned are Agents for, and offer for sale, *Lightner's Patent Axle Boxes*, for Railroad Cars and Tenders, which have, by thorough experience, been demonstrated to be one of the most valuable improvements ever introduced in Locomotion. The saving effected in oil alone, will in a few months pay the first cost of these boxes, independent of other advantages. They are now in use upon the following, among other roads, viz:

Boston and Worcester, Boston and Providence, Boston and Fitchburg, Nashua and Lowell, Providence and Worcester, Northern, N.H., Cheshire, Manchester and Lawrence, Concord, N.H., Concord and Claremont, Ogdensburg, (Northern, N.Y.) Stonington, New London Willimantic and Palmer, New Jersey Central, New Hampshire Central, Worcester and Nashua, Fitchburg and Worcester, Connecticut and Passumpsic, Lowell and Lawrence, Salem and Lowell, Wilton Branch, Newburyport.

Below will be found the certificates of a number of gentlemen, whose opinions will be good authority in every part of the country.

Office Boston and Prov. R. R., }
Boston, Dec. 28, 1849. }

MR. JOHN LIGHTNER,

Sir,—It affords me pleasure to say, that after two years' trial of your boxes, I am fully and entirely satisfied of their superiority over any other pattern we have used. This superiority consists in economy of oil and freedom from "heating." I have tried every pattern of box in use, of any note, and do not hesitate to say, that you have devised one which in every respect combines greater advantages than any other within my knowledge; these advantages are so manifest, that I am fitting up all

our cars with your boxes, as fast as practicable.

Annexed, is a statement of an experiment with your boxes, the result of which may be of use to your interests.

Ten passenger cars, running 72 wheels, fitted up with Lightner's boxes used 41½ pints of Patent Oil, at 50 cts. per gallon, ran 43,099 miles, equal to 5-18 pints per wheel for 43,099 miles. Speed, 30 to 40 miles per hour.

Very respectfully yours,

W. RAYMOND LEE, Supt.

I have examined the above statement of Mr. Lee, and fully concur with him in his opinion of the superiority of Lightner's box.

GEORGE S. GRIGGS,

Supt. Machine Shop B. & P. R. R.

Boston, July 26, 1849.

This is to certify that J. Lightner's axle boxes for railroad cars and locomotive tenders, have been in use on the Boston and Worcester railroad one year, and I unhesitatingly pronounce it, in my opinion, the best and most economical one in use, requiring less oil, of easy application, not susceptible of derangement, as in most kinds in use. When requiring repairs or renewal, the same may be done in one-fourth of the time usually occupied for that purpose. The box requires oiling not oftener than once a month—is kept quite free from dust, and consequently wears much longer than those generally in use.

D. N. PICKERING,

Supt. Motive Power, B. & W. R. R.

Office of Boston Locomotive Works, }
December 12th, 1849. }

The Boston Locomotive Company have been using J. Lightner's patent axle boxes under the tenders of their engines for several months, and find them more highly spoken of by the railroad companies that have used them in regard to economy in the use of oil, their durability and their ease of adjustment, than any other boxes which they have used. We therefore do not hesitate to recommend them to all railroad companies.

DANIEL F. CHILD,

Treas. Boston Locomotive Works.

'Taunton Locomotive Works, }
Taunton, July 7, 1849. }

MR. H. F. ALEXANDER,

Dear Sir,—Your favor of yesterday came to hand in which you ask what success we have met with, in using Mr. Lightner's patent box for cars, engines, &c.

We have put it in use on the Boston and Providence railroad, New Bedford and Taunton Branch railroad, Central railroad, N. J., Norfolk County, Rutland and Burlington, and as yet we have not had one complaint from them; and from what we have used of it, and witnessed, we do not hesitate to say that it is superior to anything in use for that purpose. It is simple in its construction, and easy of access, and the reservoir is held close to the shaft, and the oil and journal is perfectly secure from dust; they will run from four to six weeks without replenishing the oil. The brass in the box is changed very much easier than by any other plan that we have seen.

Very resp. yours,

W. W. FAIRBANKS, Agent.

Office Providence & Worcester R. R. Co., }
Providence, Dec. 17th, 1850. }

H. F. ALEXANDER, Esq.,

Sir,—The "Lightner patent boxes" for cars and locomotives have been in use under a portion of the passenger cars and engines of this company for upwards of two years, and have given very great satisfaction.

Though combining many excellent qualities, their great superiority consists in the economy of oil.

The result of experiments upon this road shows the consumption of oil by the use of this box, to be not more than one sixth part the quantity consumed by the use of the common box.

With the common box, eight passenger cars, 64 wheels, running 90 miles per day, consumed in 12 months 520 gallons of oil, being an average of 8½ gallon per wheel per annum.

With the Lightner box the same cars running the same number of miles per day, during the same space of time consumed 73½ gallons of oil, being an average of 1½ gallon per wheel per annum.

So manifest are its advantages over any other box used by this company, it is intended to place it under all our cars as soon as practicable.

Besides the saving of oil, as they afford complete security from dust, we think them more durable than any other box in use.

Another advantage resulting from the use of this box is, cars run more easier than with the common box. The saving in fuel which it would effect, would of itself, we think be a sufficient inducement to use this box in preference to any other known to us.

Very respectfully,

ISAAC H. SOUTHWICK, Supt.

JOHN B. WINSLOW,

Supt. Machine Shop, P. & W. R. R.

Cambridgeport, April 5th, 1851.

H. F. ALEXANDER, Esq.

Sir,—This may certify that I have been engaged in the manufacture of railway cars since 1834, and have built for the different railroad companies cars of all descriptions to the amount of three millions of dollars, and have used on the above cars all kinds of journal boxes, and find that none give better satisfaction than the "Lightner patent box," both on account of the saving of oil and the arrangement for taking out and re-placing the composition by means of the sliding key, and other conveniences which no other box possesses.

Yours respectfully,

CHARLES DAVENPORT.

Worcester, March 17th, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—This is to certify that I have been for some years past engaged in building cars, and that I have tried most, if not all of the patent boxes, and have found Lightner's patent superior to all others as far as the saving of oil is concerned, also the ease with which they are fitted and exchanged in case they get out of order.

For the last three years, I have put them under all of the cars I have built, and in every instance they have given the most entire satisfaction.

Yours truly,

OSGOOD BRADLEY.

Office Union Works, So. Boston, }
May 23d, 1851. }

This certifies that I have applied Mr. J. Lightner's patent axle boxes to my locomotives and tenders for the past two years. I consider them superior to all others,—economical in their use, and possessing many important advantages not found in any other boxes.

SETH WILMARTH.

Office 15, R. R. Exchange, Boston, }
June 1, 1851. }

This is to certify, that we have known the success of Lightner's patent journal boxes upon various roads in New England the past three years, and have been led to examine their peculiar construction.—We are well satisfied of their merits, and have adopted them upon our small gravel cars, and take pleasure, as we ever have done, in recommending their use upon all roads where we are employed in the construction.

GILMORE & CARPENTER,
Contractors.

Amoskeag Manufacturing Co. Machine Shop, }
Manchester, May 31, 1851. }

H. F. ALEXANDER, Esq.

Dear Sir,—We are using the Lightner box on all the engines and tenders we build, and we are satisfied that it is the best box in use, and recommend the same to all those who purchase engines at our works.

Yours respectfully,

O. W. BAYLEY, Agt.

This is to certify that the Fitchburg railroad company having become satisfied of the superiority of J. Lightner's patent Axle Boxes for Railway Cars and Locomotive Tenders adopted the same,

and are bringing them into general use upon their road.

One year's experience with the above improvement, has fully convinced me that there has never been anything offered to the public for that purpose which possess such intrinsic value; in fact, this is an improvement, which seems to overcome all the difficulties found in all the various kinds now in use. It possesses very many advantages over all others: Some of which are [first] the first cost is much less than that of most boxes in use. [Secondly] 75 per cent is saved in oil; one gill applied to each Journal once a month, or one quart to an eight wheel car, is all these boxes require per month [Thirdly] no dust can gain access to the Journal, which is constantly lubricated with clean oil; hence the saving in repairs of Journals and composition bearings, is a matter of importance. [Fourthly,] its construction is truly simple—not complicated, having nothing liable to become loose by constant and severe service. [Fifthly] for convenience there is nothing which approaches this improvement.—The composition bearings may be removed from the Journals of an eight wheel car, by one man, and returned, or duplicates, in twenty minutes, while under the car: the same would require two men, at least half a day with other boxes in use.—The trucks and wheels using these boxes, are free from oil and dirt, usually seen upon all railroad cars, at great expense to the corporation.

NATH'L JACKSON.

Supt. Car Building and Repairs, F.R.R. Co.

Boston, March 9, 1849.

I hereby certify, that I have examined a box for Car Journals, invented by Mr. Lightner of Roxbury, Mass., and I have thought so well of it that I have adopted it on our railroad, I have known of its success on other roads.

S. M. FELTON,

Supt. F. R. R.

Office of the Central R. R., N. J., }
Elizabethtown, May 1849. }

H. F. ALEXANDER, Esq.,

Dear Sir:—Your favor, [wishing to be informed how we liked Lightner's patent axle boxes for R.R. Journals,] has been duly received; in answer we would say, we have used the boxes on Locomotive tenders one year, more or less, and on our cars some six months. I consider them the best boxes in every respect, I have ever used, or even seen used on any other roads—for safety, durability and the economy pertaining to all the details connected with the boxes and Journals of R. R. Car wheels; and we shall adopt them upon this road.

Yours Respectfully,

JOHN O. STEARNS.

Supt. Central Railroad Co., N. J.

Manchester, N. H., Nov. }
1st, 1850. }

H. F. Alexander, Sir,

I have used "Lightner's Boxes" under all the Cars of the Manchester and Lawrence railroad, and feel no hesitation in saying that I think them to be the best boxes now in use.

Yours, &c.,

THEODORE ATKINSON, Agent.

Cheshire R. R. Office, Keene, }
March 5th, 1851. }

Mr. H. F. Alexander,

Sir,—Lightner's Patent Boxes have been used on the Cheshire R. R. about a year, and have given the highest degree of satisfaction.

All the Passenger Cars now in use, and a considerable number of Merchandise Cars are furnished with them, and they will take the place of the Common Boxes on all the cars as fast as circumstances will permit.

Very Resp't.

L. TILTON,

Supt. Cheshire R. R.

Boston and Worcester Railroad, }
Boston, April 1st, 1851. }

H. F. Alexander, Esq.,

Dear Sir,—Lightner's Patent oil saving box for railroad cars, has been adopted by this corporation; we are taking out the common and substituting the

Lightner's at the rate of fifty boxes per month; it will soon take the place of all others, as it is decidedly preferable to any heretofore used by this corporation.
G. TWITCHELL, Supt.

Statement of amount of oil used on 32 8-wheel freight cars, on the Boston and Providence Railroad (with Lightner's Boxes) from March 10, 1849, to February 27, 1851, and upon 12 8-wheeled passenger cars from September 8, 1849, to February 27, 1851.

FREIGHT CARS.

Amount Oil.	No. months.	Amount Oil.	No. months.
1.—21 pts.	10	17.—23½ pts.	14
2.—19 "	6	18.—23½ "	11
3.—25 "	13	19.—36 "	21
4.—18 "	7	20.—22 "	10
5.—22 "	12	21.—38½ "	24
6.—24 "	13	22.—29 "	23
7.—20 "	11	23.—35½ "	23
8.—21 "	11	24.—37½ "	23
9.—23½ "	10	25.—51 "	23
10.—21 "	9	26.—31½ "	24
11.—20 "	9	27.—28½ "	23
12.—21½ "	11	28.—36 "	23
13.—19 "	8	29.—50½ "	24
14.—25½ "	17	30.—50 "	23
15.—20½ "	10	31.—41 "	23
16.—31 "	18	32.—39½ "	23

Total, 925½ pts. 510

PASSENGER CARS.

1.—19½ pts.	18	7.—30 pts.	18
2.—25½ "	18	8.—25½ "	18
3.—33½ "	16	9.—29 "	18
4.—19 "	15	10.—46½ "	17
5.—15 "	15	11.—9 "	9
6.—22 "	18	12.—65½ "	17

Total, 340 pts. 197

Averaging 1 4-5 pints of oil for freight, and 1 7-10 for passenger cars per month only!

All orders and enquiries promptly attended to.

BRIDGES & BROTHER,

No. 64 Courtlandt st., New York.

July 25, 1851.

To Boiler Makers, Engineers, etc., etc.

PATENT LAP-WELDED IRON TUBES,

Manufactured by the

BIRMINGHAM PATENT IRON TUBE CO.

UNDER

PROSSER'S PATENT,

from one and a quarter to eight inches in diameter.

These tubes are well known for their superiority over all other descriptions for Locomotive, Marine and other Steam Engine purposes, for which they are used very extensively in Great Britain and on the Continent of Europe.

For sale in quantities to suit purchasers, by

WILLIAM BIRD & CO.,

44 Wall st., New York.

July 26, 1851.

To Railroad Companies.

THE undersigned has discovered and patented an imperishable, cheap, and sufficiently elastic substance, to be introduced between the sill and rail, so that the stone sill can be used in place of the wooden sill: entirely overcoming that rigidity where the rail is laid directly on stone. Address

J. B. GRAY, Philadelphia.

July 10, 1851.

To Contractors.

Peru and Indianapolis Railroad.

PROPOSALS will be received at the office of the Peru and Indianapolis Railroad, in Noblesville, until the evening of the 13th of August next, for the Grading of the line of the above road from Noblesville to Peru, a distance of fifty miles. Also the masonry for Bridges over the Wabash, Big Pipe and White Rivers.

The proposals are to be addressed to W. J. HOLMAN, Esq., Chief Engineer, at the Company's Office, where plans and specifications of the work may be seen. Payments will be made monthly in cash, reserving 15 per cent. till the contracts are completed.

Indianapolis, July 12, 1851,

European and North American Railway.

THE undersigned, the three persons first named in the first section of an act passed by the Legislature of Maine, and approved the twentieth day of August last past, entitled "An Act to incorporate the European and North American Railway Company," and being specially authorised therefor in and by said act, hereby give public notice that, for the purpose of receiving subscriptions to the stock of said company, as established by the act aforesaid, according to the provisions thereof, not exceeding forty thousand shares, books of subscription will be opened under the direction of the undersigned, according to the regulations prescribed, at the time and places following, viz:—On WEDNESDAY, the Twentieth day of August next,

At Calais, Maine, with Noah Smith, Jr., Esq.

Eastport, do. " Col. Bion Bradbury.

Machias, do. " Walker & O'Brien,

Ellsworth, do. " Seth Tisdale, Esq.

Oldtown, do. " Geo. P. Sewall, Esq.

Bangor, do. " Geo. W. Pickering, Esq.

Orono, do. " Hon Israel Washburn, Jr.

Waterville, do. " Hon. Timothy Boutelle.

Brunswick, do. " Prof. William Smyth.

Augusta, do. " B. A. G. Fuller, Esq.

Belfast, do. " John Y. McClintock, Esq.

Portland, do. " John B. Brown, Esq.

Portsmouth, N.H. " Hon. I. Goodwin.

Salem, Mass. " Stephen A. Chase, Esq.

Boston, do. " Francis Skinner & Co.

Lowell, do. " John Wright, Esq.

Worcester, do. " Charles Washburn, Esq.

Providence, R.I., " Billings Brastow, Esq.

Hartford, Conn., " Hon. C. F. Pond.

New Haven, do. " Allen Prescott, Esq.

New York, N.Y., " R. & G. L. Schuyler, No.

2 Hanover street.

Albany, do. " John V. L. Pruyn, Esq.

Troy, do. " Hon. John D. Willard.

Philadelphia, Pa. " Hon. Wm. C. Patterson.

Montreal, Canada, " Hon. John Young.

Quebec, do. " J. B. Forsyth, Esq.

Said books will remain open for ten successive days at the places and with the persons aforesaid. Dated at Portland, this sixteenth day of June, A. D. 1851.

ELIJAH L. HAMLIN,

ANSON G. CHANDLER,

JOHN A. POOR.

Trautwine on R. R. Curves.

By JOHN C. TRAUTWINE, Civil Engineer, Philadelphia, Pa.

IN press, and will be published in a few days; accompanied by a Table of Natural Sines and Tangents to single minutes, by means of which all the necessary calculations may be performed in the field.

This little volume is intended as a field-book for assistants; and will be found extremely useful, as it contains full instructions, (with wood cuts) for laying out, and adjusting curves; with Tables of Angles, Ordinates, etc., for Curves varying from 13 miles, down to 146 feet Radius.

A portable Table of Natural Sines and Tangents to minutes, has for a long time been a desideratum among Engineers, independently of its use in laying out curves.

The volume is neatly got up in duodecimo; and handsomely bound in pocket-book form.

Sold by Wm. Hamilton, Actuary of the Franklin Institute, Philadelphia. Price \$1.

Also in press, and will be issued in a few weeks, "Trautwine's Method of Calculating Excavation and Embankment."

By this method, which is entirely new, (being now made known for the first time) the cubic contents are ascertained with great ease, and rapidly, by means of diagrams, and tables of level cuttings. Thin octavo; neatly half bound, \$1. For sale by Wm. Hamilton.

June 28, 1851.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff St.

Notice to Contractors.*Steubenville and Indiana Railroad.*

PROPOSALS will be received at the Office of the Steubenville and Indiana railroad company in Steubenville, until the first day of October next, for the Grading and Masonry of the first division of the road extending from Steubenville to the Connotten valley and also for the construction of the entire road between Steubenville and Coshocton; and also distinct proposals for the construction of that portion of the road extending from Coshocton to Newark.

The entire length of this line is about 110 miles, and it contains work of all descriptions, in great variety, some of which is quite heavy.

Proposals will be received for the Grading and Masonry of the first division entire or in sections of about a mile each, the Company reserving the privilege to make such disposition of the whole work, as may appear most conducive to its interests.

Plans, profiles and specifications can be seen at the office of the Company after the 15th of September, and further information may be obtained on application to J. Blickensderfer, Jr., Chief Engineer, or to the undersigned,

D. KILGORE, President.

Notice to Contractors.*Engineers' Office, E. T. & V. R. R. Company, Greenville, E. T., June 5th, 1851.*

PROPOSALS will be received until the 1st day of October next, for the Grading and Masonry of that part of the E. T. & V. Railroad between the Eastern terminus of said road at King's Meadow, and Rheatown, in Greene County, a distance of about forty-seven miles. A large amount of very heavy work, both in Grading as well as Masonry, will be found on this division, offering strong inducements to able Contractors.

Maps, Profiles, and Specifications can be seen at this Office, on and after the 20th of July next.

The Company reserve the right to reject all, or any proposals that they deem unsatisfactory.

Proposals should be directed to the Treasurer and Secretary of the E. T. & V. Railroad Company, Jonesborough, E. T.

LLOYD TILGHMAN,
Chief Engineer.**Railroad Lanterns.**

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.

August, 16, 1849.

6m33

Railroad Iron.

THE Subscribers, Agents for the Manufacturers, are prepared to contract for the delivery of Railroad iron at any port in the United States or Canada, or at a shipping port in Wales.

WAINWRIGHT & TAPPAN,
29 Central Wharf.

Boston, June 1, 1851.

Bowling Tire Bars.

40	Best Flange Bars	5½x2 inches,	11 feet long.
40	"	5½x2 "	7 feet 8 in. long.
40	" Flat "	6x2 "	11 feet long.
40	"	6x2 "	7 feet 8 in. long.

Now in store and for sale by

RAYMOND & FULLERTON,
45 Cliff street.**To Railroad Companies, Machinists, Car Manufacturers, etc., etc.**CHARLES T. GILBERT,
NO. 80 BROAD ST., NEW YORK,

IS prepared to contract for furnishing at manufacturer's prices—

Railroad iron,
Locomotive Engines,
Passenger and Freight Cars,
Car Wheels and Axles,
Chairs and Spikes.

Orders are invited; and all inquiries in relation to any of the above articles will receive immediate attention

THE Fourth Annual Exhibition of AMERICAN MANUFACTURES; by the MARYLAND INSTITUTE for the Promotion of the Mechanic Arts, will be opened in Baltimore on the 20th October, 1851.

The Exhibition will be held in the SPLENDID NEW HALL of the Institute, (fronting on Baltimore street) now being rapidly completed. Their edifice is centrally situated, chaste in its architecture, solid in its construction, and is by far the largest and most complete building in the United States, devoted to the Mechanic Arts. It may be added that this building is 355 feet long by 60 in breadth, with an average height of 66 feet, containing some twelve apartments, the largest of which is 255 feet by 60, and that the cost will be over \$70,000.

To this Exhibition, the Managers ask the attention of all engaged in industrial pursuits throughout the country, and cordially invite them to contribute specimens of their best productions for public inspection, and to compete for the prizes offered by the Institute. These prizes consist of Gold and Silver Medals, Diplomas, etc., which were last year distributed as follows:—Gold Medals, 16; Silver ditto, 90; Diplomas, 60; besides 85 articles of Jewelry, etc., to ladies. Fair play will be scrupulously observed towards all, and every facility of Steam power, shafting, fixture, labor, &c., &c., will be amply provided free of expense. The machinery will be under a special superintendent, and a fine display of it is looked for. The last exhibition of the Institute was visited by more than 40,000 persons, and with their vastly improved accommodations and alterations, this number will be doubled at the coming display, embracing many Virginians, Pennsylvanians, and other strangers from the South and West.

Joshua Vansant, President.

Ed. Needles, } Vice Presidents.

F. A. Fisher, }

Samuel Sands, Rec. Sec'y.

Wm. Prescott Smith, Cor. Sec.

F. J. Clare, Treasurer.

BOARD OF MANAGERS.

Ross Winans,	Simeon Alden,
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R. Eareskson,	Chas. Suter.

(The last nine in *Italics* are the Committee on Exhibition.)

The Hall will be opened for the reception of goods on MONDAY, 13th October; on the next Monday, 20th, at 7 P. M., the Exhibition will be formally opened to the public, and will positively close on Wednesday, 19th November. Articles for competition must be in the Hall by Thursday night, Oct. 16, unless delayed in shipment after starting in ample time.

Those who intend depositing, will give the Committee or the Agent, notice as early as possible, stating the nature of the goods, and probable amount of room required, to exhibit them to advantage.

Circulars, containing a view of the new Hall and the full regulations of the Committee, with special information, if required, may be had promptly, by addressing the undersigned, or the Institute's Agent, J. S. Selby, Baltimore, post-paid.

ADAM DENMEAD,

Chairman Com. on Exhibition for 1851.

SUPERIOR BLACK WRITING & COPYING INK.**Jones' Empire Ink.**

87 Nassau st., Sun Building, New York city.

Net prices to the trade—

Quarts, per dozen,	\$1 50	6 oz. per dozen,	\$0 50
Pints,	1 00	4 " "	0 37½
8 ounces,	0 62½	2 " "	0 25

On draught per Gallon, 20 cents.

This is the best Ink manufactured. It flows freely, is a good copying ink, and will not mould, corrode, precipitate or decay. Orders for export, or home consumption, carefully and promptly attended to by

21st

THEODORE LENT.

To Railroad Companies, etc.

The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

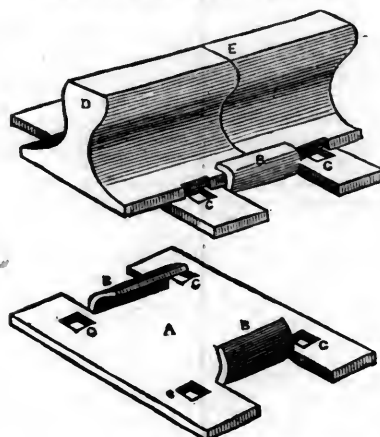
I also invite attention to an improved PATENT SPRING LOCK, for SLIDING Doors to Freight and Baggage Cars, now in use upon the Pennsylvania Central, Greenville and Columbia, S.C., Reading, Pa., and other Railroads.

Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH,

46 South 8th St. Philadelphia.

May 9, 1851.

The American Railroad Chair Manufacturing Co.

ARE prepared to make WROUGHT IRON RAILROAD CHAIRS, of various sizes, at short notice.

By use of the WROUGHT IRON CHAIR, the necessity of the wedge is entirely done away—the lips of the chair being set, by means of a sledge or hammer, close and firmly to the flange of the rail.

The less thickness of metal necessary in the Wrought Iron Chair gives much greater power and force to the spikes when driven—and consequently a much less liability to the spreading of the rails by reason of the spikes drawing or becoming bent.

The less weight necessary in the Wrought Iron Chair, will enable us to furnish them at a cost much below that of CAST IRON CHAIRS.

DESCRIPTION OF THE ABOVE CUTS.

Figure 1 is a perspective view of the rail secured in the chair, and fig. 2 is a perspective view of the chair itself. D, E, are sections of two rails placed together, and secured at the joint on the chair by the jaws B, B. The chair is bolted down by spikes C, C. In fig. 2, the chair is represented as made of a single block or plate A of wrought iron.

The chair is set in its proper place on the track, spiked down, and the ends of the two rails brought together within the jaws as represented in fig. 1.

For further information address,

N. C. TROWERIDGE, Secretary,
Poughkeepsie, N. Y.

June 1, 1851.

Railroad Commission Agency.

THE Subscriber offers his services to Railroad Co's and Car Makers for the purchase of equipment and furniture of roads and depots and all articles and materials required in the construction of cars, with cash or approved credit. No effort will be spared to select the best articles at the lowest market price.

He is sole Agent for the manufacture of the ENAMELED CAR LININGS, now in universal use. The best Artists are employed in designing new styles, and he will make to order pieces with appropriate designs for every part of the car, in all colors, or with silver grounds and bronzed or velvet figures.

He is also Agent for Page's Car Window Sash Fasteners, which is preferred by all who have used it to any other.

CHARLES STODDER,
-75 Kilby st., Boston.

June 20, 1851.

3m.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 136 NASSAU ST., NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.
SECOND QUARTO SERIES, VOL. VII, No. 33! SATURDAY, AUGUST 16, 1851. [WHOLE No. 800. VOL. XXIV.

ASSISTANT EDITORS,
J. T. HODGE, *For Mining and Metallurgy.*
GEN. CHAS. T. JAMES, *For Manufactures and the Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & Co., 136 NASSAU ST.

Saturday, August 16, 1851.

Great Railroad Ovation.

The "City of Notions" has just had a new idea creep into her head. For years past she has been busy upon her railroad projects, which when completed, were to make her the commercial centre of the United States, and "the rest of mankind." These roads are now all finished to her mind, but still the centre of gravity of the universe is unchanged. The Green Mountains yet elevate their obdurate heads, and demand a heavy tribute from all who insist upon climbing over their shoulders. To avoid this imposition, people, in spite of all solicitation, still keep up their old habits of bringing their bread and cheese, and other *fixings*, to New York, which, to a traveller from the north and west, is all the way down hill. This contumacious behaviour, has sorely grieved our Boston friends, and they are determined to submit no longer. Something must be done, and something is going to be done. "A GRAND OVATION," says the Bos-

ton Courier, is to happen, to which are to be invited, to use the language of our cotemporary, "the President of the United States, the Governor General of Canada, the Governors of the several States of New England, the Presidents of the railroads, and the distinguished merchants and citizens of the principal places along the route, as well as those interested in ocean steam navigation. In addition to these, and other persons of note, we learn that invitations will be given to all the Foreign Ministers at Washington, to the Governors of Nova Scotia and New Brunswick, etc., etc. Three days at least are to be devoted to this great railway and steamship jubilee. There will be processions, addresses and banquets, probably a review of the troops, and grand excursions in the harbor by the new and splendid ocean steamer, the S. S. Lewis, escorted by all the steamboats in this quarter, followed in the evening by fireworks from the wharves at South Boston and Boston proper, from East Boston and Charlestown, Chelsea and the islands; all the vessels in the bay being at the same time illuminated by means of variegated lanterns, and having on board parties of ladies and gentlemen, and bands of music. This pyrotechnic and aquatic part of the display will be the most novel and magnificent public spectacle of the kind ever witnessed in the United States, and will no doubt draw together a vast crowd of citizens and strangers. The time for this extraordinary ovation has not yet been decided upon. It depends mainly upon the day of the arrival of the new steamship, and the opening of a connecting portion of one of the upper railways." In the mean time, says the same paper, *Honorable Francis Brinley*, President of the Common Council of Boston, one of the "most distinguished and illustrious of her citizens," with a large train of attendants, left that town on Saturday last, for the purpose of making arrangements with the various railroads that are to take part in the OVATION. Mr. Brinley will visit the Canadas, for the purpose of inviting the great Earl of Elgin and Kincardine, Knight of the Order of the Garter, K. B., M. G. G.,* etc., a kinsman to Earl Grey, and other officials.

The same paper, our friend the Courier, running over with joy at the prospect of coming events, states that there are now being manufactured in

that city "three new steam drills, to eat their way into the hidden recesses of the Hoosac mountain, and wake up the slumbering beds of rock and iron ore, which now obstruct the most practical line of intercommunication between the ocean and the inland commerce of the illimitable west. Yankee skill and persistence must and will 'put the tunnel through,' to the astonishment of the Rip Van Winkles and Domine Sampsons of the nineteenth century." These terrible engines will, we presume, be retained in Boston to form a part of the sublime pageant which is impending. Upon the very culminating moment of this great day, these monsters will "let sliver" upon some impenetrable mound of brick bats or hard coals, for the purpose of showing to the astonished beholders the perfect annihilation of matter.

In view of all this we were perfectly overwhelmed, and had settled back into our chair, exclaiming—"New York must give it up now. It is no use."—We saw the Green Mountains "suddenly hide their diminished heads." Boston loomed up as the only visible spot in creation, and New York was returned upon the parchment of history, as *non est inventus*. Who could resist, thought we, the charm of variegated lanterns; fire works from South Boston, Boston proper, the Common, from Charlestown, Chelsea and the Islands; the review of troops thundering past with deafening tread; the presence of the President of these United States, the Governors of the six New England States, distinguished merchants, men of note, the Governors of Nova Scotia and New Brunswick, the Governor General of the Canadas, the Earl of Elgin and Kincardine, Knight of the Garter, "kinsman to Earl Grey?" "Who can resist these," said we—"nobody," "nobody;" or if any could, they are good-for-nothing trash, not even worth having.

We should probably never have recovered from our syncope; but luckily we happened this morning to read an account of the recent war between Great Britain and China—and there we thought we saw a slight parallel to the case before us. On one occasion, the English sailed up one of the Chinese rivers; and to frighten back the "Barbarians" "they (the Chinese) displayed a vast number of variegated lanterns, wrought with the most frightful devices." Against these foes the Englishmen bravely pushed their way; but when morning came they found themselves in a pickle, sure

* The cabalistic letters, K. B., we shall not attempt to decipher. M. G. G. means *Moving Governor General*.

enough. As soon as the light dawned, they could see all the surrounding heights bristling with cannon, threatening destruction with the first step onward. The invaders were nonplussed, and about to retreat, when an officer, out of curiosity, took his glass for the purpose of examining these instruments of destruction. Soon to his astonished view the cannon resolved themselves into good sized earthen pots, with their muzzles directed toward the shipping, and so skilfully arranged as to deceive the naked eye. Upon this discovery John Bull plucked up, and pushed ahead. His example brought comfort and courage to us. Upon a second look, we thought we could discover, now and then, an earthen pot, where we looked for true metal. We breathed freer, feeling that after all New York is something. Still we hope with trembling. As in the story of the bull pitted against the horse in the race—we can't say how fast the brute may run. *Lanterns* have a strange faculty of making everything invisible but themselves. We have tried the catching of birds this way, and always found it more successful than by "pulling salt on their tails." Think of the *men of note* that are to be there: distinguished merchants; Presidents of railroads; the President of the United States; six Governors of States; two Lieutenant Governors of Provinces, and one Governor General, the "Earl of Elgin and Kincardine, and kinsman to Earl Grey" (what more conclusive proof is wanted that such a man is always in the right) to cap the lofty pedestal. Think of all these "*calastrophes*" happening in conjunction at the same instant, and at the very climax, the "THREE STEAM DRILLS" knocking a pile of luckless bricks into the middle of next week, (by way of showing what sport they would make with the rock ribbed hills,) and Marshall Tukey and his assistants vainly endeavoring to preserve order among the fragments. But the occasion is too great for description. We can only sketch the leading outlines, we must then leave the pageant to the general conception.

Still, while we tremble for New York in particular, and generally for all our other cities, we are determined to be present at the *ovation*. It is cowardly to attempt to keep the future from our view, however dark it may appear. At first we doubted whether we were included in any of the different ranks to be invited; but we believe we can slip in under the category of "*men of note*." We sometimes take note of passing events—under this section, therefore, we make our claim to an invitation, and are prepared to "show good reasons," if necessary. If we shall be disposed to find fault, or make ourselves merry at anything we may see, we shall ascribe it to feelings of envy and jealousy at the rising greatness of BOSTON.

Important to Shippers.

In the last Cincinnati Prices Current, a valuable and well conducted sheet, we find a long letter from Messrs. J. C. Chenoweth & Co., merchants of that city, urging the superior cheapness of the northern route to shippers of western produce. The following extract from their letter is deserving the attention of our readers:—

"The advantages of the northern route to New York over that by New Orleans, are vastly superior. By the northern route tobacco is delivered in New York in from thirty to thirty-five days, in as good order and condition as when shipped. It is delivered dry and free from sweat, and opens a hundred per cent better than that shipped by New Orleans, which requires double the time to arrive in New York. Tobacco shipped by New Orleans is nearly always injured to some extent from the

sweat caused by heating in the hold of the vessel which uniformly happens from the great heat of the weather in that latitude in this season of the year. We subjoin the cost of transportation on a single hhd. by each route, say by Louisville:—

BY NORTHERN ROUTE.

Dray in Louisville.....	25
Freight to Cincinnati.....	1 00
Charges to Cincinnati.....	50
Freight by Canal, Lake.....	7 75
Insurance.....	1 12
	\$10 62

BY NEW ORLEANS.

Dray, Louisville.....	50
Freight to New Orleans \$3 to \$3 50, say.....	2 50
Insurance to New Orleans.....	62
Charges in New Orleans.....	1 75
Freight by ship.....	7 00
Insurance to New York.....	2 00
	\$15 12

Showing a difference in favor of the Lake route of \$4 50. We are now shipping tobacco to New York at 50 cents. per 100, thirty days. In connection with this, we would call the attention of the shippers in the interior, whose shipping point is Louisville, to the fact that in addition to the old established warehouses, there is now in course of construction, by Messrs. Watkins and Rowland, Louisville, a new tobacco warehouse, 190 by 130 feet, fire proof, which will be soon finished. It is well located in the vicinity of the Galt House, and will be a fine house for selling or re-shipping. They are gentlemen, and will give entire satisfaction.

Railroads in Prussia.

The editor of the New York Tribune, in one of his recent letters from Europe, says:—

A Prussian railroad has four classes of cars. The first class is quite elegant and expensive, but used only by invalids and noodles, or very inexperienced travellers; the second is as comfortable, and should be taken for long distances when one has ladies in company; a healthy, solitary, masculine traveller should take a seat in the third, which is not cushioned, but clean and well-ordered; by so doing he will save money, paying about one half the price of first class, and see much more of the manners and nature of the people; nor need any one fear to tarnish his respectability—even a thin, cutaneous respectability—by riding here. If he edges away too much from the poor fellow at his right, he may crowd a learned professor, or wealthy merchant, or sensible traveller, on his left. The fourth class is simply an open box. In the first and second class one compartment is set apart for smokers; in the other two one smokes at will. They are well ventilated, however, in fair weather, and one who dislikes tobacco smoke will escape the annoyance by taking a seat near the windows. I preferred meeting the enemy on their own ground, have taken up smoking, and find it pleasant, not only as a post-prandial recreation, but as a ready means of acquaintance.

I cannot tell how many conversations of value have had their beginning in the offer of a cigar or the request for a light. The conductors (there is one to every three cars) pass on the outside of the cars along a little platform, on which passengers have not, as with us, the privilege of standing and breaking their necks. Between stations the doors are locked. Tickets, which must be bought at the stations, give the class, the price, the day of the month, and the distance which you are to go, and a reference to the regulations of the country which are posted in the cars. The conductor checks, by tearing off the end of them. There are waiting-rooms at the station houses, but you are not allowed to go out near the track until the cars are come to a full stop. The regulated speed is a mile (Prussian) in sixteen minutes, less than twenty of our miles per hour. An exception is made in favor of certain express trains. Watchmen stand along the track at intervals of two hundred rods. The "rules and regulations" are made and enforced by the general government. All persons connected with the road wear a plain uniform. So far as I have seen, and I have taken some pains to look, they are perfect in their offices; I have found many of them,

when off duty, to be intelligent men, and very ready to furnish any information in their power. One of them assured me that in eight years, no accident, not even the breaking of small bones, had occurred between Bonn and Cologne, a distance of eighteen miles, travelled by six daily trains. Regulations analogous to the above, govern the steam navigation of the Rhine, and similar ones rule most of the public conveyances in France. It is true that our American companies could ill afford to employ at American wages (may they never be less) so large a number of persons as are attached to these European ones, and it is also true that Americans, not having passed their whole lives and conducted all their affairs under a strict government tutelage, are better able to take care of themselves, in all the business of life, than a people who speak and move only as the law directs. It is true that the little peccadilloes of competing hackmen are better than the stricter propriety, whose observance is only a severely constrained virtue. But still we might surely take good hints towards improvement in some regards from these French and Prussians—*fas est do certi, &c.*

Mining in Great Britain.—No. III.

The ores, or, as the miners term them, *hures*, are all dressed by women and boys, who cob them, pick them, jig them, buck them, bundle them, and spall them, as they may require; but as these terms of art may not be altogether intelligible, the process may be described in humbler words. In order to prepare *copper ores* for market, the first process is, of course, to throw away the deads, or rubbish, with which they are unavoidably mixed; and this operation is very cleverly performed by little girls of seven or eight years of age, who receive 3d. or 4d. a day. The largest fragments of ore are then *cobbed*, or broken into smaller pieces by women; and, after being again picked, the whole is divided into—1. Prills, or lumps of ore.—2. Drudge, or ore mixed with other substances.—3. Halvans, hennaways, or leavings, which contain but a small quantity of ore. The prills are given to what the Cornish miners call *maidens*—that is, to girls from 16 to 19 years of age. These maidens *buck* the ores—that is, with a bucking iron, or flat hammer, they bruise them down to a size not exceeding the top of the finger, and this portion of the ore is fit for market. The drudge, when containing but little iron pyrites, is *bucked* to a smaller size than the *prills*, and then jigged, either by machinery or by little boys, who shake them into a sieve under water. By this means it is separated into four parts—1. That which passes through the sieve and is usually fit for sale, called *hutchwork*.—2. The portion at the bottom of the sieve, called *ragging*.—3. The middle part of the contents of the sieve, which is again *bucked* and *jigged*.—and 4. That at the top of the sieve, which is put among the *halvans*, or refuse. Some of the ores of copper are so soft that exposure to water would occasion loss, in which case they are fit for the market, after being sifted, cobbed and picked. The halvans, hennaways, or leavings, are the refuse from the preparation of the *crop*, and, when not much mixed with iron pyrites, those portions which contain the greatest quantity of ore are *bucked* and *jigged*, but when mixed with foreign substances, of great specific gravity, they are *cobbed* and *picked*. The portions that contain but little ore are *stamped*, and the stamped work is *trunked*; the larger particles of the *trunked* ore are *tyed*.

The dressing of *tin ores* is altogether a different process, because not only are the ores perfectly different, but the method of smelting them is also so different, that it is necessary the tin should be reduced to the finest powder, while copper ore is smelted in small lumps. The tin ore, after being picked, and separated from the *deads* by vanning, is thrown into a stamping-mill, where it gradually falls under a number of piles, or beams of wood, shod with iron, which are worked vertically up or down—generally by a water-wheel. As it is necessary that the ore should be bruised to a very fine powder, the bottom of the stamp is surrounded by a very fine copper sieve, and water being made constantly to flow through this, the ore can only escape when it is fine enough to pass with the water through the interstices of the sieve. It then settles into a very fine mud, which is composed of metallic particles, and powdered quartz-rock, &c. This

mud undergoes a very ingenious process, which the miners term *buddling*. The metallic, and other particles, are all of different specific gravities; and the dresser, being aware of this, places the mud at the top of an inclined plane, and gently working it about, allows a small stream of water to run over it. In a short time the inclined plane is all equally covered with the mud; and although, to any person who has not been brought up to the business, the whole mass has the same appearance, yet the dresser is able to distinguish, and to draw a line between, the heavy metallic particles which have remained at the top of the inclined plane, and the worthless ones which, from being lighter, have been washed towards the bottom. After separating the one from the other, the worthless part is thrown away, and the metallic part buddled again, and the process is repeated until the mass retained consists almost entirely of metallic particles. But these particles, which are as fine as flour, are not all tin; generally many of them are composed of mundic (the sulphuret of arsenic); others are copper; and as the difference between the specific gravities of these three metals is not sufficient to separate them by buddling, or washing, it becomes necessary to roast the mass—an operation which the dresser does not himself perform. As soon as the mass is placed in a surface, and subjected to a proper degree of heat, the sulphuret of arsenic goes off in white poisonous fumes, or smoke, and the specific gravities of the different particles of copper and tin are so altered by the action of the fire, that upon being taken out of the furnace, and again delivered to the dressers, he finds that, in the course of carefully buddling the mass on the inclined plane before described, the particles separate—the tin, which is the heaviest, being left upon the upper part, while the copper is at the bottom. The tin is then packed in bags and sold; and being nearly pure metal, it requires, in comparison to copper ore, so little fuel, that it is all smelted in Cornwall.

Whoever compares together the two processes of dressing copper and tin ores, must be satisfied that they are completely different affairs; and in Cornwall, accordingly, it is perfectly well understood that they form different trades. The ores are so dissimilar, and require such different modes of treatment, that the experience which the labourer gains in dressing the one, is of no possible use to him who dresses the other. It is true, that both sets of people are called *dressers*, but it does not follow that for that reason, they can all dress *anything*; and to desire a copper dresser to dress tin ores would, in Cornwall, be considered as preposterous as if one were to send him to Aldersgate-street to dress a turtle, or to St. James's-square to dress a duchess.

But it is time that the *underground captains* should come to grass, and that the whole body of subterranean laborers should be released; and those who have attended to their labors throughout the day will scarcely regret to see them rising out of the earth, and issuing in crowds from the different holes or shafts around—hot, dirty, and jaded—each with the remainder of his bunch of candles hanging at the bottom of his flannel garb.

As soon as the men come to grass, they repair to the engine house, where they generally leave their *underground clothes* to dry, wash themselves in the warm water of the engine pool, and put on their clothes, which are always exceedingly decent. By this time, the *maidens* and little boys have also washed their faces, and the whole party migrate across the fields in groups, and in different directions, to their respective homes. Generally speaking, they now look so clean and fresh, and seem so happy, that one would scarcely fancy they had worked all day in darkness and confinement. The old men, however, tired with their work, and sick of the follies and vagaries of the outside and inside of the mining world, plod their way in sober silence—probably thinking of their supper. The younger men proceed talking and laughing; and, where the grass is good, they will sometimes stop and wrestle. The big boys generally advance by playing at leap-frog; little urchins run on before to gain time to stand on the heads—while the "*maidens*," sometimes pleased and sometimes offended with what happens, smile or scream, as circumstances may require. As the different members of the group approach their respective cotta-

ges, their numbers of course diminish; and the individual who lives farthest from the mines, like the solitary survivor of a large family, performs the last few yards of his journey by himself. On arriving at home, the first employment is to wheel a small cask in a light barrow for water; and, as the cottages are built to follow the fortunes and progress of the mine, it often happens that the miner has three miles to go ere he can fill his cask. As soon as the young men have supped, they generally dress themselves in their *holiday clothes*,—a suit better than the *working clothes*, in which they walk to the mines; but not so good as their *Sunday clothes*—in fact, the *holiday clothes* are the *Sunday clothes* of last year; and thus, including his *underground flannels*, every Cornish miner generally possesses four suits of clothes.

The Sunday is kept with great attention. The mining community, male and female, are remarkably well dressed; and as they come from the church or meetings, there is certainly no laboring class in England at all equal to them in appearance, for they are naturally good-looking. Working away from sun and wind, their complexions are never weather-beaten, and often ruddy; they are naturally a cheerful people, and, indeed, when one considers how many hours they pass in subterranean darkness, it is not surprising that they should look upon the sunshine of the Sabbath as the signal, not only of rest, but of high and active natural enjoyment.

To show the great advance in the system of mining, the following extract, from a communication made to the Royal Society in 1671, is exceedingly curious.—(*Phil. Trans.*, vol. 6, page 2057.) After describing the steps which were taken, in order to discover lodes, the writer proceeds:—

"When we have found one lode, the last *assay hatch* (costeaning pit) exchanges its name for that of a *tin shaft*, or *tin hatch*, which we sink down about a fathom, and then leave a little long square place, termed a *shamble*, and so continue sinking from east to east—i. e., as high as a man can conveniently throw up the ore with a shovel—till we find either the lode to grow or degenerate into some kind of wild, as mundic, or maxy, &c.; then we begin to drive east and west, as the goodness of the lode or convenience of the hill invite, which we term a *drift*, 3 ft. over, and 7 ft. high; but, in case the lode be not broad enough of itself, then we usually break down the *deads*, first on the north side of the lode, for the greater convenience of the right arm in working, and then we began to rip the lode itself. The *bellmen* rip the *deads* and ore; the *shovelmen* carry it off, and land it by casting it up with shovels from one shamble to another, unless it be when we have a winder with two kibles, or great buckets, made like a barrel, with iron hoops, placed just over the then termed *wind hatch*, which, as one comes up, the other goes down. When we are come to any depth, and find the water begin to annoy us, we descend to the bottom of the hill, when we have that convenience, and at the lowest place begin a little drift on a level, till we come up to our work; but when we once pass that level on which our adit runs, and the water begins to trouble us, we have this remedy—either with winder and kibles, or leather bags, pumps, or buckets, to get it up to the adit level, and so we are enforced to do to the very top, when we have not the convenience of an adit."

English Railroads.

Railway Traffic.—The gross traffic receipts on railways in the United Kingdom during the first twenty-four weeks of the year 1850 amounted to £5,291,235, being at the rate of £979 per mile. At the corresponding period of 1849, the receipts amounted to £4,664,032, being at the rate of £1,020 per mile; of 1848, to £4,136,837, being at the rate of £1,127 per mile; of 1847, to £3,654,196, at the rate of £1,273 per mile; and at the same period of 1846, to £3,172,950, being at the rate of £1,477 per mile. The aggregate length of the railways open over which the traffic was carried at the end of the twenty-four weeks in 1850 was 5,560 miles; in 1849 4,711 miles; in 1848, 3,804 miles; in 1847, 3,031 miles; and at the end of the period mentioned, in 1846, 2,232 miles. The increase in the receipts during the twenty-four weeks in the present year, over those of the corresponding period in 1849 amounted to £627,203; the increase in the receipts

during the same period in 1849 over the preceding year was £527,195; in 1848 over 1847, £482,641; and in 1847 over 1846, £481,245. In the mileage the increase at the end of the twenty-four weeks in 1850 over the corresponding period of 1849, was 849 miles; in 1849, 907 miles; in 1848, 773 miles; and in 1847 the increase of mileage over the end of that period, in 1846, was 799 miles. The diminution in the receipts per mile for the twenty-four weeks, as compared with those of the preceding year, amounted in 1850 to £41; in 1849, to £107; in 1848 to £146; and in 1847, to £204, making the total diminution of receipts per mile during four years, £498, or about 34 per cent. It appears from the above that a considerable improvement has taken place in the traffic receipts per mile during the present year, which is attributed in a great measure to the comparative falling off in the mileage opened, which for the present year shows an increase over the preceding one of only 18 per cent., while in 1847 it amounted to 35.8 per cent. of the mileage open in the preceding year.

Canal Certificates.

We give below an article, put forth by the friends of the enlargement, showing the financial system of the state, the amount of its debt, and the means provided for its extinguishment. It is intended also to show the safety of the new issues of canal certificates:

The Constitution of 1846 sets apart a large portion of the canal tolls to form two Sinking Funds for the payment of the State debt. The amount taken from the canal revenues for these sinking funds is \$1,650,000 per annum; and after June 1, 1855, the contribution is to be increased to \$2,050,000 per annum. It seems to be forgotten by some that under this sinking fund system our present debt will be steadily reduced, and in a few years extinguished. The amount of the canal debt at the end of the present fiscal year (September 30, 1851) will be.....\$15,301,109 16
Add general debt..... 6,359,693 32

\$21,660,802 48

The canal debt will be paid off by the sinking fund in 1866, and the entire State debt will be extinguished in 1869 or 1870. These results are mathematically certain. Thus it will be seen that in less than 20 years (if the revenue certificates shall not have been sooner paid from the surplus), the entire amount of the annual contributions from the canal revenue to the sinking fund, being \$2,050,000 per annum, will then be released, and made applicable, by express Constitutional injunction, to the payment of the certificates.

The most unfavorable view that can be presented, by any possible sophistry or ingenuity, is that the payment of the revenue certificates may be deferred in part until after the present debt shall have been paid by the sinking fund.

I contend, however, that if our past experience is to be regarded as a safe foundation for forming calculations respecting the future trade of the canals, the surplus tolls will be sufficient to discharge the revenue certificates even sooner than the old debt will be extinguished by the sinking funds. On this point facts and figures are more satisfactory than theoretical estimates. Let us look at the actual amount of canal tolls for the first four fiscal years under the new Constitution:

Year ending Sept. 30,	1847.....	\$3,460,975 52
" "	1848.....	3,153,614 24
" "	1849.....	3,377,781 27
" "	1850.....	3,390,475 63

After paying from these revenues the expense of superintendence and repairs, \$1,650,000 to the sinking funds, and \$200,000 to the general fund, the net surplus applicable to the unfinished works was as follows:—

Year ending Sept. 30,	1847.....	\$981,834 53
" "	1848.....	498,219 52
" "	1849.....	907,102 71
" "	1850.....	800,206 49

Total.....\$3,187,363 24
—being an average surplus of \$796,590 61 per annum.

Does any one apprehend that the actual surplus

In any future period will be less than the average for the last four years?

The results of the present year are sufficient to settle the question.

Amount of toll received from 1st Oct.,

1850, to the 3d week inclusive in

July, 1851, was.....\$3,150,632 87

To the same time in 1850.....2,836,762 73

Increase over previous fiscal year... \$313,870 44

It must be remembered, in connection with this large increase, that there was a reduction of tolls on flour and wheat at the opening of the canals in April, of 25 per cent.

It has been contended, however, that the future revenues are to be impaired by the recent act releasing the railroads from the payment of canal tolls, after the present year. Those who are familiar with the business of the great west, its constant increase in population and production, and the rapid extension of railroads and canals, which must draw trade towards the New York market, indulge no such apprehension. It would be impossible for the railroads to transport the actual increase of tonnage, from year to year, from the country beyond the lakes.

At the opening of the navigation next spring, the Wabash and Erie canal will have been extended from Terre Haute to the Ohio, thus completing the longest canal in the United States, passing through a country of unsurpassed fertility. The extension of this canal from Terre Haute to the Ohio, will of itself bring more trade than the railroads can carry.

Similar improvements now in progress in Ohio, Michigan, Indiana, Illinois, Wisconsin, Iowa, etc., will add immensely to the commerce of the lakes. There are other elements of increase so well known and understood, and so strikingly illustrated by our present weekly returns, as to render comment unnecessary.

The only remaining objection is, that the State is not liable for the payment of the certificates as an ordinary debt. If it is true that the liability of the State is limited to an obligation to regulate the canal tolls, so as to produce the largest amount of revenue, and then to apply the surplus, after discharging the prior liens created by the Constitution, to the payment of the certificates, in this undertaking the State assumes a trust of the highest obligation. The principle of good faith so uniformly recognised and acted upon by our people, is a sufficient guarantee for its honest performance. Independent of every consideration of moral duty, inasmuch as the certificates are to be made the basis of currency, the whole people will be directly interested in maintaining the revenues and to their faithful application. Let us compare the revenue certificates with the railroad companies in which such large amounts of capital are invested. What is the security for the payment of railroad bonds—for instance, the second or third bonds of the New York and Erie railroad company? They rest entirely upon the income of the road.

The lender parts with his money upon his faith in the sufficiency of the trade and revenue of the line, and this in effect is his only safety. There is personal responsibility of shareholders. Their liability, like that of the State in the case under consideration, is limited to the faithful administration of the concern, and the honest application of the revenues. If the income is sufficient, the bonds are paid—if not, not.

It may be said that the corporate property of the railroad company is pledged, but the value of the property is measured by its net income; and if the income be inadequate, a resort to the property is of no avail, beyond the intrinsic value of certain real and personal effects, which in that contingency would be swept by the first mortgage.

It has been shown that the canal revenues will be amply sufficient to provide for the redemption of the certificates, without any increase of tolls over the average amount realized for the last five years. Whether the future tolls will fall below that average, or advance largely beyond it, especially after the enlargement shall be completed, is a question which addresses itself to the common sense of practical business men, who are competent to reason and decide for themselves on a proposition which has been so fairly tested by our past experience.

It has been said that the admission of the Canal certificates as a basis for banking will lead to a dangerous expansion of the currency. A candid examination of the subject will show that this apprehension, like the one we have already discussed, is altogether imaginary. It must be remembered that our present state debt, which is now employed as a basis for circulation, will be reduced more than half a million annually, until 1855, and after that period more than a million annually. Simultaneously with this reduction of the present basis, the charters of the Safety Fund Banks are gradually expiring. The capital of the banks whose charters will expire in less than 2½ years is \$9,143,200. If these institutions continue business, they must deposit security with the bank department for the redemption of their circulation. If they decide to wind up, new institutions must be formed to take their places, and in either event the canal revenue certificates will be barely sufficient to supply the vacuum.

Railroads in 1811.

The following letter, recently communicated to the National Era, contains the views of Chancellor Livingston, of New York, who wrote it in answer to a gentleman who had addressed him, asking his opinion with deference. Chancellor Livingston was a great man in his day:—

"ALBANY, March 11, 1811.

"Dear Sir.—I did not till yesterday receive yours of the 25th February; where it has loitered on the road I am at a loss to say. I had before read of your very ingenious propositions as to the railway communication. I hear, however, on mature reflection, they will be liable to serious objection, and ultimately more expensive than a canal. They must be double, so as to prevent the danger of two such heavy bodies meeting. The walls on which they are placed must be at least four feet above the surface, and three below, and must be clamped with iron, and even would hardly sustain so heavy a weight as you propose moving at the rate of four miles an hour on wheels. As to the wood, it would not last a week. They must be covered with iron, and that, too, very thick and strong. The means of stopping these heavy carriages without great shock, and of preventing them from running upon each other, for there would be many upon the road at once, would be very difficult. In case of accidental stops, or the necessary stops to take wood and water, etc., many accidents would happen. The carriage of condensing water would be very troublesome. Upon the whole, I fear the expense would be much greater than that of canals, without being so convenient."

Railroads in the Provinces.

We find in the Provincial paper the official report of the results of the Hon. John Howe's mission to Canada, and New Brunswick, upon the subject of the Quebec and Halifax railroad. After speaking of the efforts he had made for the promotion of his scheme, he gives the following as the result of the conference between the representatives of the three Provinces, and the reasons which influenced their determination, viz:

That the line from Halifax to Quebec should be made on the joint account and at the mutual risk of the 3 Provinces, 10 miles of Crown Land and one line being invested in the joint Commission, and the proceeds appropriated towards the payment of the principal and interest of the sum required.

That New Brunswick should construct the Portland line, with the funds advanced by the British Government, at her own risk.

That Canada should, at her own risk, complete the line from Quebec to Montreal, it being understood that any saving which could be effected within the limits of the sum which the British Government are prepared to advance, should be appropriated to an extension of the line above Montreal.

That, on the debt contracted on the joint account of the three Provinces being repaid, each should own the line within its own territory.

It was also understood that Canada would with-

draw the general guarantee offered for the construction of railways in any direction, and that her resources should be concentrated upon the main Frunk Line, with a view to an early completion of a great inter colonial highway on British territory, from Halifax to Hamilton: from whence to Windsor, opposite to Detroit, the Great Western company of Canada have a line already in course of construction.

The final adoption of this great scheme of inter-colonial policy now rests with the people of Nova Scotia, to whom it is probable that it will be submitted by a dissolution of the Assembly at an early day. I have pledged the Government to it beyond recall. I have staked, upon the generous and enlightened appreciation of their true interests by my countrymen, all that a public man holds dear.—Having done my best to elevate Nova Scotia in the eyes of Europe, and of the surrounding Colonies, I have no apprehension that she will repudiate the pledges which I have given.

Her clear interest demands the prompt acceptance of the proposition—

1st, Because it secures to her, within very few years, a railway communication of 1400 miles, extending through the noble territory of which she forms the frontage, and with which her commercial, social and political relations, must be very important in all time to come.

2d, Because it gives her almost at once, connection with 8000 miles of railway lines, already formed in the United States—makes her chief seaport the terminus for ocean steam navigation, and her territory the great highway of communication between America and Europe.

3d, Because, on the extinction of the debt, she will possess a road with which there can be no competition within the Province—a road towards which two great streams of traffic must perpetually converge, and the tolls upon which must become a source of revenue, increasing with each succeeding year.

4th, Because the completion of these great lines of communication will give to all the North American Provinces a degree of internal strength and security, and consideration abroad, which will far transcend any pecuniary hazard which may be incurred.

5th, Because the completion of these lines will draw into the Province much of the surplus labor and capital of Europe.

6th, Because, the line from the seaboard once completed to Canada, there cannot be a doubt that it will soon be extended into the fertile and almost boundless country beyond; being followed, at every advance, by a stream of Emigration, and ultimately, and in our own time, reaching the shores of the Pacific.

It may be argued that we ought not to risk any thing beyond the limits of our own frontier. But I regard the risk as involving a very slight liability beyond what we have already cheerfully assumed.

All our calculations have been based upon the presumption that our roads will cost £7000 currency per mile. From the best information which we could obtain in Canada and in the United States, and we gather the opinions of the chief promoters of the Vermont, Great Western, Portland, and St. Andrews Roads, there is every reason to believe, if the Provinces avail themselves of the most modern experience, and of the present low price of iron, that with the money in hand, and large contracts to offer, the work need not cost much more than £5000 currency per mile. Should this be the case, the sum which was originally contemplated will probably cover the whole expenditure for which Nova Scotia will be liable; and, if it does not, with her present low Tariff, and annually increasing consumption, the deficiency may soon be supplied.

But, after a careful examination of the country traversed by American and Canadian railroads, and of the general testimony borne by their promoters and officers, that in all cases the money with which they have been constructed has cost from eight to twelve per cent., I have brought my mind to the conclusion that a railway built with money at 3½ per cent., will pay almost immediately even if made through a wilderness, provided the land be good, water power and wood abundant;

and provided that there are formed settlements at either side, to furnish pioneers and local traffic with them, when they are scattered along the line. We have other resources beyond our own limits, in associations of the industrial and enterprising, who are prepared to come into the Provinces the instant these great works are commenced, and who within the limits at least of the lands dedicated to this enterprise, will soon form a continuous street, through that portion of the territory between our frontier and the St. Lawrence, which appears to present any really serious hazard.

In estimating the relative risks and advantages which this scheme involves, it should also be borne in mind, that whilst Nova Scotia has but little Crown land left along her portion of the line (and this has been frankly explained) the lands which Canada and New Brunswick are prepared to grant are extensive and valuable. They will probably amount to 3,000,000 of acres, which, if sold at 5s. an acre, (and with a railroad running through them they will soon command a much higher price,) would form a fund out of which to pay the interest on the whole capital expended for the first three or four years.

Railroad Matters in Boston.

We have to record a new "Boston Notion."—Mr. Mayor Bigelow, in behalf of the Committee of Arrangements, has issued an official bulletin, announcing that the City Government of Boston proposes to celebrate in an appropriate manner, the final completion of the great lines of railway uniting the tide-waters at Boston with the Canadas and the great West, also the establishment of American lines of steamers between Boston and Liverpool.—He says there are now completed and in operation, in Massachusetts alone, about 1,200 miles of railway; and in New England 2,400 miles. Massachusetts alone has expended in the completion of these roads, the enormous amount of \$54,000,000; and it appears from the reports of the several railroad corporations in this State, made to the last Legislature, that there were transported over the Massachusetts roads alone, during the year 1850 9,500,000 passengers, and 2,500,000 tons of freight. But this is not all. The several lines connecting us with the Canadas, northern New York, the great lakes and the far West are now completed, uniting us by railroad and steam navigation with thirteen States of the Union, comprising an area of 428,795 square miles; the two Canadas, the lakes, with their five thousand miles of coast; and bringing within our commercial sphere a population of ten millions of inhabitants. And if we look for a moment at the business of the lakes and the Canadas, and observe its rapid yearly increase, we shall be still more astonished. It is estimated that the imports and exports of the Lake Harbors, exclusive of the Canadas, during the present year will be two hundred million dollars. The annual increase of this business is found to be 17½ per cent.; thus doubling itself in less than six years. In addition to this, the imports and exports of the Canadas will amount during the present year to fifty millions of dollars.

The advantages which Boston possesses for doing this immense business, are then described, and a comparison instituted between Boston and New York as eligible shipping ports for the Canadas and export cities for the West, as follows, viz:—

To Boston. To N. York.

Distance from Liverpool		
via Halifax.....	2876 miles.	3093 miles.
Distance from Liverpool		
direct.....	2856 "	3073 "
Distance from Halifax..	368 "	580 "
Distance from Montreal..	344 "	398 "
The distance from Liverpool to Mont-		
real via Boston is.....	3200 "	
While via New York it is.....	3471 "	

The difference between Liverpool and Montreal in favor of Boston over New York, is two hundred and seventy-one miles.

The celebration is to consist of a Festival in Faneuil Hall, and other appropriate ceremonies; and it is proposed to invite to be present on that occasion, the Governor-General of Canada, his Aid and Cabinet; the leading members of the Ca-

nadian Parliament, the Corporation of Montreal, the leading merchants in all the Canadian cities and Ogdensburgh, the President of the United States and his Cabinet, the Governors of New England States, the Presidents of all the Railways in New England, the Mayors of the cities of New England, and others interested in railways and steam navigation.

Tehuantepec Railroad.

It appears to have been the generally received opinion of the New York press, that the Mexican Government were justified in annulling the Tehuantepec Treaty, by which the progress of the above road seems likely to be delayed, if not defeated altogether—that the conditions of the same not having been complied with, Mexico was under no obligation to carry it out on her part. On the other hand, the New Orleans papers take the ground that the company has lost none of its privileges, that it possesses the right to proceed with the road and that the Government of the United States is bound to protect it in so doing. They state that the recent operations were commenced under guarantees of protection from the Mexican authorities; that our citizens have become stockholders in the work to a large amount; that "they were induced to engage in the undertaking by the express as well as implied sanction and encouragement of the Mexican authorities; and now, after the surveying parties have been eight months in the field, and from the explorations that have been made, the most flattering expectations are entertained of a successful termination of this project, so important to the south and west, they are arrested in their proceedings, and forced to abandon their work and quit the country. The arguments used by the apologists of the Mexican Government in its barefaced equivocation, and breach of trust, says the New Orleans Bulletin, are predicated upon the assumed fact, that GARAY, the first holder of the right of way, had failed to meet the conditions attached to his grant, and that the grant was expressly annulled. This is not the fact; but on the contrary the grant in the hands of Garay's assignees, has been expressly recognised and re-affirmed. We care not if the original conditions were not complied with by Garay; the rights of the present holders have been made good by the action of the government, and they are as much to be respected as they were when enjoyed by the original holder Garay, before there was any failure of terms.—The whole affair lies in a nut shell. Has Mexico recognised the grants in the hands of the present holders? There is no room to doubt it; and when the New York papers assert the contrary, they have been misinformed of the true state of the case. We are told, that by the influence of a company of southern capitalists, a proposition in the shape of a treaty was made to the Mexican government, renewing the charter, and pledging, on certain terms, the faith of Mexico and the United States to maintain it inviolate against each other and the world; but that this treaty has never been ratified by either the Senate of the United States, or the Congress of Mexico. Here is a gross mistake; the Senate of the United States did ratify this treaty in March last, by a unanimous vote; and the rights of the actual holder of the grant were expressly recognised, inasmuch, as his acquiescence was required before the Senate would take any action upon it; and subsequently the assent of the company was obtained to the particular stipulation, when the treaty was formally ratified, and sent on to Mexico, where it was laid over by Congress for want of time

to give it consideration; it has not been rejected by the Mexican Congress.

"On the contrary, the Mexican government has over and over again, recognised and respected the position of the present holders. On one occasion, when effects for the surveying party first passed through Vera Cruz, on their way to the Isthmus, in June, the Custom house at Vera Cruz required the payment of duties. This was refused; security was taken, and a reference made to the Mexican government for its decision—which promptly ordered the goods to pass *duty free*, because these effects belonged to the *Compania Norte Americana*—who were entitled to this privilege by the terms of their grant.

"They (the company) have moreover received formal and official protection from the government, which they never would have had, had they been regarded as invaders or intruders upon Mexican soil.

"Passports, in the form of circulars from the supreme government to the Governors of the States of Vera Cruz and Oajaca, command aid and protection to be given to the engineering party that the 'Compania' might send. These documents were issued sixteen months ago; sent by the Minister of Foreign Affairs to our Representative, Mr. Letcher—by the latter forwarded to the Department of State, whence they were furnished to the company to act upon. Since then, until within the last six weeks, the operations of the surveying party on the Isthmus have experienced no impediment, nor any intimation of opposition made to them."

We hope, and are confident, that the difficulties which now threaten will be removed, and that this work will proceed to a speedy completion. It is without doubt, the best route across the Isthmus for the convenience of our commerce, in addition to its healthiness. Whatever may have been the conduct of Mexico, a little money, in her present poverty stricken condition, will place the matter right again. If she has been in the wrong, she had in object in the course she has taken. If right, she will readily grant all we want for a consideration.

We give the following from a letter of a Mr. Murphy, one of the assistant engineers, showing the character of the route and of the country and its productions:

In reply, therefore, to the statements concerning the Tehuantepec route, I beg leave briefly to assure you that it is quite as feasible as any in the United States; that there are no less than six mountain passes, all admitting of grades not greater than 60 feet; that the road can be built upon a grade of 55 feet to the mile; that a ship canal is by no means impossible; that earthquakes have not occurred on the Isthmus, so far as I am informed; that the lands are incomparably rich, abounding in iron, tin, silver, salt and coal mines, together with mahogany, lignumvitæ, Indiarubber, pine, live oak, and cypress, and every variety of gum trees and dye woods. We may add to these a soil and climate adapted to the raising of rice, cotton, sugar, and tobacco, equal, if not superior to the finest portions of the southern country, and in quantities sufficient, should the Isthmus fall into the hands of foreign capitalists, to injure seriously, if not destroy the American trade to Europe; the existence of an excellent harbor on the Pacific; a magnificent river on this side, navigable for thirty miles for ships; a salubrious and healthy climate; the close proximity of the Isthmus to the United States; the saving of two thousand miles in the voyage to California; the control of the entire India trade, and the market which the States of the south and west must have for their produce on the shores of the Pacific; it is plain, then, that the "invasion" of the Isthmus, so liberally imputed to the engineering party, has been attended with some good results

and that Tehuantepec possesses immeasurable advantages over the pestilential climate, spungy morasses, and barren heights of Panama, or the stagnant lake of Nicaragua.

Ohio.

Columbus, Piqua and Indiana Railroad.—The portion of this road between Urbana and Columbus has just been placed under contract to different contractors, to be completed in one year from the 1st of September next. Nearly one half of the whole amount of risk let is to be paid for in Township Bonds and stock of the company.

This company was chartered in February, 1850, was organized in April succeeding, and commenced active operations in June. The whole length of chartered line is from Columbus to Winchester, Indiana, 108 miles. Of this distance 89 miles, commencing at Columbus, are now under contract furnishing good evidence of the energetic and competent management. Within a few days the balance of the line is to be placed in the hands of the contractors.

The distance from Winchester by the Indianapolis and Bellefontaine road is 73 miles, making the entire distance by the route between the capital of Ohio and Indiana 181 miles, and from Indianapolis to New York via the Hempfield line, 822, as claimed by the friends of the above road. At a rate of speed of 30 miles to the hour, which is not equal to that of the express trains on some of our roads, this whole distance could be performed in 28 hours!

In this connection we may state that the project of a railroad to connect Piqua with Cincinnati, by way of Eaton, is attracting attention. The route has been surveyed, and a portion of the stock necessary to its construction has been taken. It is claimed that this route is three miles shorter than the one by way of Dayton.

We are happy to be able to give such a favorable account of the Columbus, Piqua and Indiana railroad. Its early completion may now be regarded as a fixed fact. Its success, in no small degree is attributable to the enterprising energy of those who have had the management of its affairs.

For the American Railroad Journal.

A New and Improved Railroad Project.
H. V. POOR, Esq.

Dear Sir: As you are constantly taking note and sending out information of the great railroad movements of our country, I presume that no apology will be necessary for troubling you with a brief account of a line which is about assuming a tangible form in Ohio—another north and south line.

At the last session of the Legislature, an act was passed authorizing the Dayton and Michigan railroad company to construct a road from Dayton through Sidney and Lima to Toledo on Lake Erie.

The company has been organized, and Judge Barbee, of Troy, Miami county, elected President. A corps of engineers has made a survey of the first section from Dayton to Sidney, 36 miles, and report the route as exceedingly favorable in point of grades, straight lines, and cost; and this portion of the line will probably be put under contract this fall.

There is more in this project than would at first appear. From Cincinnati to Dayton, 60 miles, the railroad will be completed and in operation next month. The whole distance from Cincinnati to Toledo is just 200 miles, which is 18 miles shorter than from Cincinnati to Sandusky. But it is not so much in reference to the short connection between Cincinnati and the lake, as from other con-

siderations, that this line will derive its importance.

Trace the line out from Toledo to Maumee city, Monroe, and thence to Detroit—only 253 miles from Cincinnati—and you will find the best possible connection with the Canadian system of railroads, terminating at Detroit. At Perrysburgh or Toledo it will connect with our own Lake Shore improvements. But the point which is likely to make this a prominent route, is its direct connection with the Canadian works, and our southern lines of railroads in Kentucky, Tennessee, etc.

By this route, the distance from Detroit to Nashville will be 200 miles shorter than by the route of the Illinois Central road from Chicago; and the distance to Memphis will be shortened 123 miles. It will give to the Great Miami valley, one of the richest producing regions on the globe, a choice of outlets by the Bellefontaine and Indiana road to Cleveland, and thence to New York or Boston, or through Detroit and Canada.

The construction of this line will bring into more intimate union the warm folks of the south with their colder brethren of the north; and if an iron bond can help to tie people together, it will be the means of strengthening the growing feeling of intimacy between our country and the Provinces north of us. The whole line can be cheaply constructed, and I have no doubt that in the due course of events, you will be called upon to chronicle this along with the other successful railroad achievements of the age.

Yours respectfully, R.

Railroad from Burlington to Peoria.

The citizens of a portion of Iowa and Illinois have organized a company for the purpose of constructing a railroad between the two towns named above, the former of which is on the Mississippi, the latter on the Illinois river. These towns are among the most thriving and prosperous of any that are to be found in the fertile west. They are nearly equal in size, each containing between five and six thousand inhabitants, both rapidly increasing, and each the focus of a populous and wealthy district of country. The road is to be nearly 100 miles in length, passing through one of the most fertile regions in the state of Illinois, a region in other respects highly favorable to the construction of a railroad.

This is the third railroad now in progress of construction, which is intended to strike the Mississippi river opposite the shore of the new state of Iowa. One at the north points at Du Buque, one at the centre in the direction of Rock Island, and this which aims at the commercial metropolis of Southern Iowa.

An idea of the importance of this road can be formed from the fact, that the returns of the last census show that nearly two-thirds of the population of the entire state is contained in the three Southern tiers of counties. Burlington is nearly in the middle of those three tiers of counties, measuring on their river front. A plank road is already nearly completed, extending from this town to Mount Pleasant, which is almost thirty miles in the interior. This is to be continued to Fairfield which is near twenty-five miles further, with branches extending to the right and left; for all which companies are already formed and the work in progress. Similar roads are also about to be constructed, radiating from Burlington in different directions.

The concentration of population in Southern Iowa, is a good indication of its agricultural ad-

vantages, which are said not to be exceeded by those of any portion of the west. But a considerable portion of this region has long been laboring under a serious commercial difficulty. Near the southern limit of Iowa is the most considerable rapid in the Mississippi river, below the falls of St. Anthony. At high water these rapids are passed without difficulty, but generally for a considerable portion of each season, they are a very serious obstruction to the navigation, rendering it necessary to carry over freight in lighters, and sometimes forming an almost impassable barrier to navigation.

The railroad in question, opens an outlet for the trade of Southern Iowa to the Illinois river, but it is not intended to stop there. Forty miles from Peoria, the road, when constructed, will strike the great Central railroad of Illinois, which will place that region of country in immediate connection with the general system of railroads in the country, and will form one of the most important tributaries to the different lines of railroads leading to this city. We hope in a few years to see the agricultural products of Iowa brought direct to this market through this channel, and our commercial products returning by the same route.

Burlington, Iowa, August 4th.

Illinois.

St. Charles and Mississippi Railroad.—The surveys of the St. Charles and Mississippi railroad have been completed. The distance from St. Charles to Rock Island by the line of the survey is 124.1 miles. The cost of grading the main line is estimated at \$283,919 72. The cost of superstructure is put down at \$6,300 00 per mile. The following is Mr. Slack's exhibit of the entire cost of the road:

The cost of road bed and superstructure.....	\$283,919 72
Excavation, masonry and bridging 124.1 miles superstructure at \$6,300 per mile	781,830 00

Total.....\$1,065,479 72
Being an average of \$8,587 82 per mile.

The engineer then adds other expenses as follows:

Turn outs, siding, &c.,.....	\$34,500 00
Drainage and fencing.....	31,400 00
Passenger and freight station, engine house and fixtures.....	30,000 00
Engineering and contingencies.....	58,082 48
Eight engines at \$7,500 each.....	60,000 00
Ten passenger cars \$2,200.....	22,000 00
Sixty freight cars at \$650.....	39,000 00

Making the cost of road ready for operating.....\$1,340,732 20
Being an average of \$19,803 64 per mile.

Indiana.

New Albany and Salem Railroad.—We have received the fourth Annual Report, submitted by the President of this company, James Brooks, Esq., at a meeting of the directors on the 3d ult. Since the last annual report, the stock subscription has been increased \$500,000, making in all \$1,260,000—an average increase of stock for the four years that the books have been opened, of \$26,000 per month. Soon after the organization of the company, the Legislature granted the right to extend the road to any point within the State without limitation, which the company might choose, provided they first made the road to Salem. Under that authority the Board determined to extend the road through Lafayette to Michigan city, and thence west to Chicago, thereby making an eastern connection via Michigan Central railroad, and a connection with the great north-west, through the roads cen-

treing at Chicago, with a branch from the main stem of the road, from Gosport via Mooresville to Indianapolis.

That part of the work between New Albany and Gosport, now under contract, would require, to complete and furnish it with the necessary depots, machinery, &c., \$1,300,000 which after using the stock subscriptions would make it necessary to raise by loan \$500,000, and pledge this part of the work for it. In January last the Board ordered a loan for that amount to be made upon such terms as might be considered most advantageous to the company. After a thorough investigation of the subject, and a careful acquaintance with the market, it was thought most economical to make the bonds bearing a large rate of interest, rather than submit to the discount necessary to procure funds at lower rate. They were accordingly issued bearing ten per cent interest, and one half the amount, \$250,000, which was all the funds required at the time, sold at par. Offers were made for the remaining \$250,000 at the same rates, but were declined. They were offered at par, by taking with them an equal amount of preferred stock, bearing six per cent interest, making the whole equal to eight per cent, or to sell the bonds alone at a premium of ten per cent. The report states that a portion of them have been sold in England on the last named terms. By this arrangement the company secures the necessary amount of funds without incurring any larger debt than the actual amount of cash received and as much less as the premium obtained on the bonds sold above par. Had the bonds been executed bearing a less rate of interest, it would have been necessary to issue a much larger amount to have raised the same amount of money.

The work is now progressing rapidly along the entire line to Gosport; and as soon as the necessary surveys can be made so as to determine the route, books will be opened for the extension of the road from Gosport to Crawfordsville, a distance of about 55 miles.

The negotiations which have been making with the Michigan Central railroad company have terminated in an arrangement satisfactory to all parties. The Michigan Central railroad company in addition to furnishing enough capital to complete that portion of the line between Michigan city and Chicago, take \$500,000 in the New Albany and Salem road, to assist in extending it through to Michigan city—\$400,000 of this subscription to be used between Lafayette and Michigan city, and \$100,000 to be used south of Lafayette. That part of the road between Michigan city and Chicago was immediately put under contract, and will probably be finished within the next six months. The surveys have been completed for the line between Lafayette and Michigan city; and a favorable route can be secured, with light grades, and almost on a straight line the whole distance. This part of the line will be put under contract as soon as possible.

An arrangement has been made with the Crawfordsville and Wabash railroad company to amalgamate the two companies, which will obviate the necessity of making a separate road between Crawfordsville and Lafayette. That road is now nearly completed, and will be finished in three or four months.

The entire distance from New Albany to Michigan city by this road will be about 285 miles, of which 35 miles to Salem was completed and opened for business on the 13th of January last. An additional 21½ miles to Orleans will be opened

about the 1st of September, and nine miles more to the East Fork of White river, four miles south of Bedford, will be ready for the cars by the 1st day of November next. The balance of the line to Gosport will be completed in the course of next year, the means being all furnished for completing it, with the necessary equipments. This will finish and furnish 123 miles.

On the next division, between the last named point and Crawfordsville, 55 miles, books are to be opened during the present month. On the next division, 26 miles, between Crawfordsville and Lafayette the road will be finished and in operation within the next four months.

The president speaks with confidence of being able to complete the whole line in the course of 1855. The road when completed from New Albany to Chicago will be one of the longest roads in the United States under the control of a single company, its length being 320 miles; to which, if we add the Indianapolis branch, 45 miles, we shall have 365 miles of road.

As mentioned above, 35 miles of the road to Salem, was opened for business on the 14th of January. The receipts to the present time are as follows:—

From freights.....	\$10,002 72
From passengers.....	11,199 66

Total	\$21,202 38
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The expenditures have been,—

Running expenses, including fuel, oil, wages, repairs of track, machinery, &c.....	\$9,627 05
	\$11,575 33

From which deduct for nett earnings previous to January 1st, estimated at. \$2,575 33 Leaving as the nett earnings of the last six months \$9,000 00, which would be at the rate of six per cent. per annum, on the cost of the road and equipments to Salem, say \$300,000.

South Carolina.

Union and Spartanburg Railroad.—Preliminary surveys having been completed by Wm. Spencer Brown, Esq., Chief Engineer of the Greenville and Columbia railroad company, for the purpose of selecting a route for the Union and Spartanburg railroad, the following is an abstract of the report submitted by that gentleman. Three routes were considered as more or less practicable, the distinguished features of which we will present. The *Newberry route* has easy grades, the total distance from Newberry to Spartanburg being 65 miles and 4,900 feet. The estimate for this route is:—

Cost of masonry, graduation and bridging.....	\$221,222 30
Superstructure and iron and contingencies.....	414,150 00

\$635,372 30

Both banks of Broad river afford practicable routes of equal length and equivalent grades. Both lines would unite at the mouth of Tiger river.—The estimate upon the route commencing at West abutment of Broad river bridge, and following west bank of Broad river to the mouth of Tiger river, and thence to Spartanburg, is:—

Total distance, 68 miles, 1,100 feet.	
Cost of masonry, graduation and bridging.....	\$246,778 40
Superstructure, iron and contingencies.....	426,187 50

\$672,965 90

The estimate upon the third route, commencing at the Alston Station, and following the east bank

of Broad river to the foot of Henderson island, thence diagonally across this island to the west bank of the river, thence to the mouth of Tiger river, and thence to Unionville, is:

Total distance, 68 miles, 1,100 feet.	
Cost of masonry, graduation and bridging.....	\$306,351 40
Superstructure, iron and contingencies.....	426,187 50
	\$732,538 90

A comparison of the estimates above presented results in favor of the Newberry route, both in distance and cost. But the total distance from Spartanburg to Columbia by this route will be 19 1-4 miles greater than by either of the other routes.

The Broad river routes would be exposed at many points to the freshets of the river, although the chief engineer expresses himself as well satisfied that a road may be located upon it with great safety. The Newberry route would be free from this exposure.

The report concludes by expressing the opinion that either of these routes offers fair inducement for profitable investment, and will be of vast utility to a large, wealthy and productive part of the State, possessing incalculable riches in mineral ores and valuable water power, both of which require this improvement to bring them into profitable use.

Maine.

Androscoggin Railroad.—A special meeting of the stockholders of the Androscoggin railroad was recently held at Haines' Corner, in East Livermore. The question which called them together was one which involved the completion of the road. After much discussion it was unanimously voted that the directors be authorized to sell the franchise of the road, together with all the privileges and appurtenances and rights thereto belonging, to such parties, corporation, or association as might be willing to take and complete the same to Livermore Falls within two years from date. This was unquestionably the best course for the company, under existing circumstances, to adopt. The company consists of about six hundred stockholders, a large proportion of whom own but one or two shares, and whose loss on these will be more than compensated by the increased value of their property in real estate, and the increased facilities for doing business which the completion of the road will give. The whole amount of stock subscribed amounts to a little over \$50,000, and as the necessity existed of doubling this amount a very considerable majority preferred to give what they had already paid, rather than increase their liabilities. Of the preferred stock proposed at the last stockholders' meeting less than \$10,000 had been subscribed, and this amount principally by the largest stockholders. It now remains for the directors to find parties to complete the road to Livermore Falls, and of their ability to do this there can be no question, and we venture to predict that in three months from this time the wild neigh of the steam horse will join chorus with the roaring cataract at Livermore Falls.

—*Lewiston Journal.*

A very sensible move; the stockholders can well afford to lose what they have paid, for the sake of having a railroad; and they are much wiser in taking the above course than to embarrass themselves by borrowing money to complete the road.

Discovery of Silver Ore in Kentucky.

Something like sixty years ago, there was a story rife in Kentucky, of the existence of an extensive silver mine. It was said that a man named Swift had obtained a knowledge of the existence and locality of this mine from the Indians, and that it was carefully concealed until his death, when, as the report says, he left a confession describing the place where the mine was; the location, fabulous or real, was near a great waterfall, and on the

Cumberland or one of its largest tributaries. The story spread far and wide, and many a hunter tried different localities, and came back with bags full of shining metal, which the test of the furnace proved to be principally composed of sulphur.—After repeated disappointments of this kind, the story began to lose its credit, and little was heard about it until the discoveries of gold in California set everybody to think of getting rich by mining. Men skilled in mineralogy have recently visited the places described by the old tradition,—and at a locality near the falls of the Cumberland, in Whitby county, Kentucky, silver ore is found in promising abundance, yielding ten grains of silver to an ounce of ore, or an ounce of silver to fort-eight ounces of ore. If one hundred pounds of ore will produce two pounds of silver, or thirty-two dollars, the ore may be considered of fair quality. A large smelting furnace is being erected, and preparations are in progress for an extensive working of the mine.

American Railroad Journal.

Saturday, August 16, 1851.

Quebec and Richmond Railway.

The survey of the line of the Quebec and Richmond railway, from the city of Quebec to a point of intersection with the Portland and Montreal railway at Melbourne, has been finished, and the Engineers are now preparing their report. We see by the Quebec papers that Mr. R. T. Bailey, the engineer of the field service, and Mr. Morton left for Portland last week. We presume Mr. Morton will soon bring out his report of the survey.

We understand that the distance between Quebec and Montreal by the proposed line, and the Portland railway, will be 174 miles only, or less than the sailing distance by the St. Lawrence river.

Quebec to Melbourne..... 101 miles.
Melbourne to Montreal..... 73 "

174 "

The road from Montreal to Melbourne is nearly finished, and is to be opened the present summer or fall.

Ohio.

Bellefontaine and Indiana Railroad.—We learn that a successful effort has been made by the Bellefontaine and Indiana company, through which the amount of their stock subscriptions has been largely increased during this summer. The total amount of stock subscriptions is now \$840,000, and it requires but \$480,000 to grade and bridge the entire line from Galion to the Indiana State line—118 miles.

A contract has been made with Messrs. J. & S. Chamberlain, experienced and well known railroad contractors, to furnish the cross-ties, and lay, and gravel the entire track; and if the iron arrives as anticipated, to complete the 20½ miles from Galion to Marion this fall. The whole road is to be finished in October, 1852. Mr. Godman, president of the company, has purchased 2,000 tons of rails, to be delivered at New York at the earliest period practicable, to lay down the portion named.

The grading, &c., on the residue of the line is going forward steadily. The superstructure of all the principal bridges was let some time ago to Messrs. Thatcher, Burt & Co., well known builders.

Contracts have been made for the depot buildings, locomotives, passenger cars, freight cars, gra-

vel cars, &c., and the prospects of the company are cheering in every respect.

Railway Gauge of Canada.

The gauge of 5 feet 6 inches has been adopted for the trunk line of Canada, on the north shore of the St. Lawrence, by the railway committee. The passage of the bill through the Parliament is regarded as certain.

Maine.

Atlantic and St. Lawrence Railroad.—The following gentlemen have been chosen directors of this road for the present year:—Josiah S. Little, Eliphalet Greeley, St. John Smith, John B. Brown, A. W. H. Clapp, Thomas Hammond, Wm. P. Fessenden, James L. Farmer, Ezra F. Beal, Wm. W. Thomas, Samuel Jordan, Solomon H. Chandler and Thomas Crocker.

Ohio.

Cincinnati, Wilmington and Zanesville railroad.

—This road is in a fair way to be built. Sufficient stock is already subscribed to grade and bridge it. The engineer will put it under contract immediately. It runs through Muskingum, Perry, Fairfield, Pickaway, Clinton, Warren, &c., to Cincinnati. These counties are out of debt and very rich in resources.

Clinton county subscribed \$200,000, Fairfield, \$250,000, Pickaway \$200,000 and the other counties will soon do the same. The private subscriptions were large, making the whole amount about \$1,250,000.

The President of this road is Franklin Corwin, Esq., of Wilmington; Chief Engineer, Mr. McCracken.

Iron Railroad Car.

It is stated that some ingenious mechanic of New York has invented a railroad car made of wrought iron, said to be at least one fourth lighter than the ordinary modern carriage used upon railways—and capable, moreover, of resisting without being crushed, a shock of ten times its own weight. The latter advantage, if it can be substantiated, must constitute a most important recommendation to the adoption of these cars upon our railroads.

THE BOSTON IRON TUBE COMPANY was organized a few days since by the election of J. J. Walworth, Pliny Cutler, Aaron Baldwin, Gardiner G. Hubbard, Joseph Nason, Edward Crehore, and J. H. Blake, as directors; J. J. Walworth, President, and A. Charles Baldwin, Treasurer. The capital of two hundred thousand dollars has been paid in, and the works of Walworth & Nason, at Edgeworth and Boston, purchased by the new company.

Stock and Money Market.

The stock and money market presents the same features indicated at our last report. The downward tendency of securities is still unchecked. There is no sale for bonds of new works; and our friends will do well to keep out of the market till a change takes place, however great their necessities. Money commands high rates upon the best of paper. A feeling of uncertainty hangs over the market, and nothing can be predicated with any certainty of the future. The great cause of the distress is owing to our foreign indebtedness. The balance of trade is against us, which we have to pay in specie.

The foreign rail market continues dull. Our roads are all doing a remarkably fine business, indicating great activity in most of our departments of industry.

The following are the earnings of the Ogdensburg railroad in July, 1851:

Freight, through, going east.....	\$8,974 68
" " " west.....	1,477 24
" way " east.....	6,859 25
" " " west.....	1,194 93
Company's property in freight train....	786 50

	\$19,292 60
Passengers.....	9,659 50
Mail.....	425 00
Express.....	50 00
Storage.....	20 84
Rents collected.....	4 00

Total.....\$29,451 94

The income of the Cincinnati, Columbus and Cleveland railroad company, for the months of June and July, was as annexed:

	June.	July.	Total.
Receipts from passengers.....	\$30,229	\$35,827	\$66,056
" freight.....	14 092	13 523	27,615
Mail, etc.....	2,000	2,250	4,250

Totals.....	\$46,321	\$51,600	\$97,921
Number of passengers....	13,743	16,409	29,152

The earnings of the Rutland and Burlington railroad were in—

July, 1851.....	\$31,652 68
July, 1850.....	15,521 64

Increase—104 per cent..... 16,131 04

The July earnings of the Mississippi and Milwaukee railroad were \$2,692 67.

The coinage of the mints up to 30th June, has been as annexed:

Mint at Philadelphia.....	\$24,269 509
" New Orleans.....	6,551 500
" Charlotte.....	170,999
" Dahlonega.....	105,592

Add for the month of July—partly estimated..... 3,902,700

\$35,000,000

The exports in the same period have been but \$25,000,000, showing that we have increased our specie ten millions during that time, not taking into account the amount which comes into the country in the pockets of emigrants.

Erie Canal.—The amount received for tolls on all the New York State canals during the 1st week in August, is..... \$88,028 34
Same period in 1850..... 84,526 43

Increase in 1851..... \$3,501 91

The aggregate amount received for tolls from the commencement of navigation to the 7th of August, inclusive, is.....\$1,608,405 11
Same period in 1850..... 1,324,876 11

Increase in 1851.....\$283,529 00

The Evening Journal gives the annexed statement of the quantity of flour, wheat, corn and barley, left at tide water during the 1st week in August in the years 1850 and 1851, as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1850.....	65,251	40,052	155,628	1,665
1851.....	82,438	99,975	246,015	2,100

Increase.....17,187 59,923 90,387 435

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 7th August, inclusive, during the years 1850 and 1851, is as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1850....	924,925	398,489	2,027,845	131,577
1851....	1,571,826	1,018,115	4,493,696	114,385

Inc.... 646,901 619,626 2,465,851 dec.17,192

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 7th August, inclusive, during the years 1849 and 1851, is as follows:

	Flour. bbls.	Wheat. bush.	Corn. bush.	Barley. bush.
1849.....	1,167,689	732,666	3,394,045	99,880
1851.....	1,511,826	1,081,115	4,493,696	114,385
Increase.	404,137	348,449	1,099,651	14,505

By reducing the wheat to flour, the quantity of the latter left at tide water this year, compared with the corresponding period of last year, shows an increase of 770,826 bbls. of flour.

The condition of the New York State Banks, per the March and June Reports of the Superintendent of the Banking Department of the State, is exhibited in the following tables, which we copy from the Albany Evening Journal. The March report embraces returns from 212 banks, and one branch, and the June report 221 banks and one branch—an increase of nine since March:

RESOURCES.

	March 29.	June 21.
Loans and discounts, except to directors and brokers.....	\$101,203,401	\$106,584,891
Loans and discounts to directors.....	5,082,030	5,374,664
*All other liabilities, absolute or contingent, to directors.....	1,645,722	1,301,614
All sums due from brokers.....	3,876,118	3,643,641
Real estate.....	3,439,450	3,761,385
Bonds and mortgages.....	3,818,991	3,969,343
Stocks.....	14,342,689	15,049,031
Promissory notes, other than for loans and discounts.....	193,033	151,835
Loss and expense account.....	567,983	578,764
†Overdrafts.....	251,359	279,981
Specie.....	9,096,274	8,975,258
Cash items.....	11,336,297	13,515,751
Bills of solvent banks on hand.....	2,682,847	2,827,993
†Bills of suspended banks on hand.....	5,262	5,041
Estimated value of same.....	2,103	1,942
Due from solvent banks on demand.....	12,049,144	9,702,748
Due from solvent banks on credit.....	853,270	171,068
†Due from suspended b'ks on demand.....	56,703	120,905
†Estimated value of same.....	14,053	7,139
Add for cents.....	640	684
Total resources.....	\$168,827,490	\$174,616,704

* The whole of this item, and a portion of those marked †, form no part of the aggregate.

LIABILITIES.

Capital.....	\$51,022,829	\$55,464,031
Profits.....	8,727,893	9,223,933
Notes in circulation not registered.....	564,052	562,244
Registered notes in circulation.....	27,927,483	26,959,552
Due Treasurer of State of New York.....	915,744	1,225,127
Due depositors on demand.....	50,227,188	54,458,105
Due individuals, and corporations other than b'ks and depositors.....	2,694,568	1,163,916
Due to banks on demand.....	24,725,084	23,557,925
Due banks on credit.....	590,180	299,962
Due to others not included in either of the above heads.....	1,430,601	1,688,385
Add for cents.....	328	341
Total liabilities.....	\$168,825,893	\$174,573,521

These tables show a further increase of \$4,442,202 in the banking capital of the State. The amt is now larger than at any previous date within a year, and is chiefly made up by the Metropolitan

and two or three institutions in this city which have gone into operation.

There has been an increase in loans and discounts amounting to \$5,674,124, and a decrease of \$979,739 in circulation. The returns show that only a small amount of specie (\$221,016) has been disgorged from the vaults. The increase of stocks amounts to \$706,342; in cash items, \$2,179,454; bank notes, \$145,146, and in deposits, \$4,231,917.

In the March report there is a discrepancy between the total resources and total liabilities. This occurs from balances not being forced. No report was received from one associated and three individual banks in time for the June report. The figures for these banks are taken from the books of the department. For this reason, and because the reports from several banks do not balance, there is a discrepancy in the footings of the June statement.

	Dec. 21, '50.	Mar. 29, '51.	June 21.
Loans & disc.	\$104,294,082	106,285,431	111,959,555
Stocks.....	14,035,547	14,342,689	15,049,031
Specie.....	11,937,798	9,096,274	8,975,258
Cash items.....	11,345,041	11,336,297	13,515,751
Bank notes.....	2,849,972	2,682,847	2,827,993
Due fm banks.....	13,407,038	12,902,414	9,873,816
Capital.....	49,866,820	51,022,829	55,464,031
Circulation.....	27,926,263	28,491,535	27,521,796
Deposits.....	53,092,447	50,227,188	54,458,105
Due to banks.....	25,005,188	25,315,264	23,857,887

Railway Share & Stock List;

CORRECTED WEEKLY FOR THE

AMERICAN RAILROAD JOURNAL.

NEW YORK AUGUST 16, 1851.

GOVERNMENT AND STATE SECURITIES.

U. S. 5's, 1853.....	100½
U. S. 6's, 1856.....	105½
U. S. 6's, 1862.....	111
U. S. 6's, 1862—coupon.....	113a114
U. S. 6's, 1867.....	114½
U. S. 6's, 1868.....	116½
U. S. 6's, 1868—coupon.....	121½
Land Warrants.....	140a145
Arkansas 6's.....	52a53
Alabama 5's.....	91a92
Indiana 5's.....	82a83
Illinois 6's, 1870.....	65a68
Kentucky 6's, 1871.....	109a110
Massachusetts sterling 5's.....	105a106
Massachusetts 5's, 1859.....	100½
Maine 6's, 1855.....	103
Maryland 6's.....	102½
Michigan.....	—
Mississippi.....	—
New York 6's, 1865.....	117a118
Ohio 6's, 1860.....	108
Pennsylvania 5's.....	69

RAILROAD BONDS.

Atlantic and St. Lawrence, 6 per cent.....	85
Baltimore and Ohio, 1857.....	94½
Boston and Providence 6's, 1855.....	101
Boston and Worcester 6's, 1855, convertible.....	107½
Bost., Concord and Mont. 6's, 1860, mortgage.....	87½
Cheshire 6's, 1860.....	91½
Connecticut River 6's, convertible.....	98
Erie 7's, 1859.....	100
Erie 7's, 1863.....	107
Erie income 7's.....	91
Hudson River 7's, 1853.....	101½
Michigan Central, convertible, 8's, 1856.....	104½
New York and New Haven.....	100½
Norwich and Worcester, mortgage, 1860.....	80a85
Old Colony, 1854.....	97½
Ogdensburg 7's, 1859.....	96
Portsmouth and Concord.....	80a85
Passumpsic 6's, 1859.....	94½
Rutland 7's, 1863.....	97
Reading mortgage, 1860.....	80
“ “ 1870.....	75
Sullivan, mortgage 6's, 1855.....	80
Vermont Central 6's, 1852.....	96½
“ “ 6's, 1856.....	91½
Vermont and Massachusetts 6's, 1855.....	86½

RAILROAD STOCKS.

[CORRECTED FOR WEDNESDAY OF EACH WEEK.]

	Aug. 6.	Aug. 13.
Albany and Schenectady.....	96½	—
Atlantic and St. Lawrence.....	60a65	—
Androscoggin and Kennebec.....	30a35	—
Boston and Maine.....	103	103
Boston and Lowell.....	110½	109
Boston and Worcester.....	100½	101½
Boston and Providence.....	48	85½
Bost., Concord and Montreal.....	40	—
Baltimore and Ohio.....	70	—
Baltimore and Susquehanna.....	40	—
Cheshire.....	54½	—
Cleveland and Columbus.....	—	—
Columbus and Xenia.....	—	—
Camden and Amboy.....	—	—
Connecticut River.....	68a70	—
Delaware and Hudson (canal).....	113	—
Eastern.....	93½	96
Erie.....	72½	69
Fall River.....	95	91½
Fitchburgh.....	108½	109½
Georgia.....	—	—
Georgia Central.....	—	—
Harlem.....	67	68½
Hartford and New Haven.....	124	—
Housatonic (preferred).....	52	—
Hudson River.....	75	—
Kennebec and Portland.....	50a55	—
Little Miami.....	—	—
Long Island.....	16½	14½
Mad River.....	—	—
Madison and Indianapolis.....	96	—
Michigan Central.....	104	103½
Montgomery and West Point.....	—	—
Michigan Southern.....	—	—
Manchester and Lawrence.....	95½	89
Morris (canal).....	15½	15½
New York and New Haven.....	113	—
New Jersey.....	133	—
Northern.....	66	66½
Nashua and Lowell.....	107½	—
New Bedford and Taunton.....	111	—
Norwich and Worcester.....	53½	48
Norfolk County.....	18a20	—
Ogdensburg.....	35½	31½
Old Colony.....	65	66
Passumpsic.....	80	—
Pennsylvania.....	—	—
Pittsfield and North Adams.....	95	—
Philadelphia, Wilm'gton & Balt.....	29½	29
Petersburg.....	—	—
Richmond and Fredericksburg.....	—	—
Richmond and Petersburg.....	—	—
Reading.....	51	51
Rochester and Syracuse.....	105½	106
Rutland.....	53	47
Stonington.....	42	41
South Carolina.....	—	—
Syracuse and Utica.....	130	—
Sullivan.....	30	—
Taunton Branch.....	110	—
Troy and Greenbush.....	90	—
Tonawanda.....	—	—
Utica and Schenectady.....	130	—
Vermont and Canada.....	103	—
Vermont Central.....	30½	30
Vermont and Massachusetts.....	26½	25½
Virginia Central.....	—	—
Western.....	102½	103
Wilmington and Raleigh.....	—	—
York and Cumberland (Pa.).....	21	—

Baltimore and Ohio Railroad.

The Wheeling Gazette thus refers to the progress of the work on the western division of this great work:—"The work on the big tunnel of 2400 feet under Mr. Pettibone is progressing rapidly and with a characteristic system and foresight. Mr. P. has gone into the tunnel with a 90 foot cutting, and has already sunk one shaft to the depth of 160 feet.—This is an immense work, and must take him until the fall of 1852 to complete it, at which time all the sections on the line west of that will be finished. It is enough that the Baltimore and Ohio railroad is progressing fast as possible to this city, and in seventeen months will be open for travel."

Commerce of Philadelphia.

Few of our readers out of the state of Pennsylvania are aware of the efforts making by Philadelphia to constitute herself the commercial emporium of the United States, or of the full conviction which her citizens possess, of their ability to effect this object by the completion of the work now in progress, and connecting her with the western states. Our neighbors confidently anticipate that the great Pennsylvania railroad, with its connections, will turn the channel of trade to themselves, which now flows to New York. This idea is founded upon the fact that Philadelphia is nearer to the western states by railroad, than New York; that these works can successfully compete with our canals; and that trade and commerce always takes the shortest and cheapest route. Assuming these positions to be correct, the result would appear inevitable that Philadelphia will draw off a large portion of the trade now possessed by New York.

If the above premises are admitted, the result claimed by no means follows as a matter of necessity. New York may possess other advantages, more than compensatory for her inferiority of position in reference to distance. But we will waive this altogether, and take for granted that both are equally situated for foreign trade. Let us examine their relative position in reference to that of the west.

Individually, we believe we have the same partiality for Philadelphia as for New York. We are equally anxious to see her succeed in her projects. If she can, in the new race that is commencing, bear off the palm from New York, we bid her God speed. The whole country are interested in the opening of the *cheapest* channels of inter-communication—insignificant portions only in costly ones. If we come to the conclusion that the position assumed by our neighbor is an untenable one, it must be attributed to no ill will towards her, or favoritism towards New York. We shall only draw conclusions from well admitted facts. And it is just as important for Philadelphia, that she should know what her works will fail to accomplish, as to know what they will effect. It would be the height of folly to proceed to the construction of costly works, by way of preparation for a business that can never be realized. Pennsylvania has a pregnant example of this in her own history.

The Philadelphians reason in this way. They say it is 175 miles nearer from Cleveland to their city, and 249 miles nearer from Columbus, Ohio, than to New York; that these distances are the measure of their superiority of the former, that distance and cost of transportation are equivalent terms; consequently when the roads connecting her with these parts are completed, she will take their trade from New York, by virtue of offering the cheapest route.

Let us look at this question of transportation. From Philadelphia to Cleveland, by way of Pittsburgh, the only route that can be opened for years, the distance is not far from 500 miles, nearly 200 less than to New York by way of the Erie canal. To take the trade of that city, she must of course offer the cheapest, (and we include in that term, time as well as cost,) route. How much will it cost them to send forward goods between these parts?

The absolute cost of forwarding by railroad has in no case been ascertained with entire certainty. It of course varies with the characteristics of each road. In coming to a correct estimate, we must rely upon the experience of roads already in operation. We find from an examination of the returns of the New York railroads, for the year 1850, that

the average cost of moving one ton of freight per mile was \$2.91. That the average charge was \$5 13 per ton per mile. The cost of transportation on the Massachusetts roads for 1850, by similar returns, was \$2.43 per mile per ton, and the charge \$2.75. The higher rate charged on the New York roads was on account of the canal tolls upon the roads that constitute our Central line. Taking \$2.50 as the average cost per ton per mile, and one dollar for profit on capital of railroads in the United States, and this is under the present mark. It would cost \$17 50 per ton for the distance from Cleveland to Philadelphia, against \$4.50 the present rate of charge between Cleveland and New York. Upon the enlargement of the canal this charge will be reduced to \$3.50, if not to \$3 per ton. Iron can now be forwarded from New York to Cincinnati for \$7 per ton, which is much less than the cost of transportation by railroad from Philadelphia to Pittsburgh.

Now how can we get around this very strikingly apparent result in favor of New York? We see no way in which it can be done. It may be said that the cost of transportation by railroad will be greatly reduced. Admitting that it can be, to the low figure charged by the Reading road, which is about two cents per ton per mile (on a road where all the grades are in favor of the traffic and the business offering fully up to its capacity,) and even this estimate leaves the advantage entirely on the side of New York. If these things are as we have stated, and we wish to be corrected if they are not, can the Pennsylvania Central railroad change the current of Western trade from New York to Philadelphia? We should like to see the friends of that great work discuss this matter upon its merits, instead of claiming a result that remains to be proved. The subject is one of very general interest, and it is certainly of great importance that the relative merits of the two rival routes, the railroad and the canal, should be ascertained.

We think that Mr. Tyson, an extract of a letter from whom, addressed to the British Consul at Philadelphia, we give below, is entirely mistaken as to the cause of the loss, by that city, of her foreign trade. Why has Virginia lost her foreign commerce? Surely not for lack of means. The Virginians are not a maritime people—neither are the Pennsylvanians. Why do not the New Englanders mine coal and iron? Because they have none in their soil. In the same way, the people of the Southern states, and to a certain extent, of Pennsylvania, lack the element necessary to success in maritime pursuits. They cannot compete with those who have this element to a greater extent. Consequently they have withdrawn from the contest, and turned their attention to other pursuits. The change which has taken place, and to which Mr. Tyson refers, is not accidental. It is the natural expression of different characteristics and capacities. The people of Maine build three-fourths of our large ships, and they go to Virginia and Florida for the timber for them. They can import their timber and build their ships in Maine, cheaper than upon the soil where the timber grows.

Mr. Tyson complains of the New York and Erie gauge. He says it was dictated by a purely selfish policy—that it was the only exception to the uniform gauge throughout the United States. He certainly is very poorly informed upon these matters. The Ohio roads have a different gauge from Pennsylvania. The four feet eight and a half inch gauge extends only to Pittsburgh. There are a great variety of gauges in the different States.

Mr. Tyson urges that the New York and Erie road shall not be allowed to push its way through the north part of Pennsylvania. We are sorry to

see such a spirit. If his positions are correct there can be no danger from this. It certainly indicates a want of confidence in them. But we will let him speak for himself. He says:—

Pennsylvania possesses in her site, one element of intrinsic superiority over all her sisters. She is the only state in the union which has a navigable outlet to the Atlantic, a footing on the lakes, and a position on the western waters. Her controlling sceptre is admitted over the long line of the Ohio, by standing at its head, at Pittsburgh. But before I trace the advantages of this position in furnishing so many inlets to the reservoir of her external trade, as so many tributaries to the expansive sea of her foreign commerce, permit me to take a rapid view of what her own territory supplies.

The whole number of railways within the state of Pennsylvania, which exceed a mile in length, is 42, embracing together an aggregate extent of 1132 miles. Authentic data are before me, laboriously compiled by Col. Childs, which show that the cost of constructing much the greater portion of these 1132 miles of railway, amounts to the sum of \$48,236,431. If to this sum be added the cost of those which are not officially ascertained, and of those prolonged beyond our limits, but made with Pennsylvania capital, the estimate, upon reasonable presumptions, would swell the whole expenditure to above *sixty millions of dollars*. The length of the canals made within the borders of Pennsylvania, is about 1,000 miles, the construction of which may be estimated to have cost nearly *thirty millions of dollars*. The immense sums which have been employed in making tunnels and adits to coal, and subterranean and superficial structures, for mining; and in the disinterment of iron ore, and works connected with its manufacture; would more than double the expenditure for railways and canals.

No city in the Union has been so profuse as Philadelphia in the application of its capital, to develop the material wealth of the state in which she is situated; nor can any other state of the confederacy, exhibit such extensive lines of artificial conveyance.

As Pennsylvania is in the van among her sisters, in resources and improvements, so well be the destiny of her metropolis, in magnitude and trade. *SHE, and not New York, is the GREAT DISTRIBUTOR AND SELLER OF MERCHANDISE to a large portion of the western and southern country.* Not content with various railway connexions with many, the chief points of trade in her own state, she will soon hold in her iron embrace the cities of Columbus, Cincinnati, and St. Louis, by way of Pittsburgh, the great western emporium of Pennsylvania. To these granaries, the various avenues of western trade converge. At no distant day she will place her cars, by way of her own great entrepot, at Cleveland, in Ohio, and at the town of Erie, in her own state, on the lake. These connexions will secure a large portion of the trade of that grand highway of waters. At Wheeling, in the state of Virginia, she will participate with Baltimore in the southern trade. These points of junction give to Philadelphia the trade of that immense region west, north and south, whose luxuriant opulence would build into greatness, and sustain the propriety of many cities. Locally situated between New York and the fertile districts beyond, their trade is naturally hers, and she now is stretching out her iron arms to receive what nature so bountifully offers.

New York having no geographical connexion with the west, is limited by her natural boundary to the Lake trade, and encounters in her ambitious endeavours to clutch our western commerce, the enterprising barrier of the county of Erie, in Pennsylvania. If the existing legislation of the state is to be respected, and future legislatures prove faithful to their duty, the *Gate of the West* will never be opened to such an avenue as the New York and Erie railroad. The thoroughfare is constructed upon the *very narrow* principle of the *wide gate*, for the exclusive benefit of the city of New York; and to prevent any beneficial union with the works of Pennsylvania, the width of whose railways requires different engines and cars. Confining her to Dunkirk, until Philadelphia shall have reached the port of Erie, with a railway which she is resolved to construct, the western roads of the gauge common to the whole country, will converge at the same

terminus, and their cars, without the necessity of trans-shipment, will pass directly to Philadelphia; leaving to New York only that portion of trade which is specially destined for a northern mart. Such an arrangement secures to Philadelphia the commerce concentrated at Erie, as she has already secured that of the upper lakes at Cleveland. By her connexions with Cincinnati and Wheeling, she will appropriate much of that southern custom which is intended to enrich the metropolis of Maryland.

It is by means of the Pennsylvania railway to Pittsburg, prolonged westwardly to St. Louis, joining Cleveland on one side, and Wheeling and Cincinnati on the other, and stretching through Kentucky to Nashville and ulterior points, that Philadelphia will enjoy the immense trade of the upper lakes of the Ohio, of the upper Mississippi, and of their numerous, beautiful and teeming tributaries. The improvements of New York cannot offer a competition with Philadelphia, for the trade of that expansive region of which these cities and towns form the natural drains or the grand foci. Cleveland is 175 miles, and Cincinnati 249 miles nearer to Philadelphia than New York; and the remoter points of junction beyond, maintain these relative distances. The completion of the railway, now nearly finished, which is to connect these rich and wide domains to Philadelphia, will form a marked era in her history. It will be the epoch not merely of the commencement of an intimate intercourse with the west and its dependencies, but the time when our enterprises are to spring into life. No untoward accident has ever marred the prospects of the Pennsylvania railroad which has been blessed in an excellent engineer, by whom it has been capably located on the shortest line which nature permits, with light gradients, and built in the best manner, and at the least possible expense. This undertaking has been well sustained by popular appreciation, and by the liberality of public and private assistance. It will literally redeem the pledge of its original friends, that no debt should be incurred in its prosecution, and that the great work should be carried on and finished, by means alone of subscriptions to its capital stock. This policy which was declared to be fundamental, has been faithfully observed, and the capital of the company now nearly if not fully subscribed, must prove, so unlike all previous efforts in Pennsylvania, a *paying stock*, greatly beyond the legal interest of money, and of consequence, universally in demand.

The successful completion of this enterprise will create a motive or incitement to the construction of a great railway, which shall connect Sunbury with Erie. Such a work will control the destinies of that mighty commerce, with which Philadelphia will be enriched by the intermediate country and the north-west, concentrated at the lake, its northern terminus. Those disjointed links, which the continuity of the chain requires between the western side of the Susquehanna at Harrisburg and Sunbury, will be speedily undertaken so as to form an unbroken connexion with that interesting and fruitful region. No doubt can be entertained that Philadelphia will shake off all apathy and unconcern, and rouse herself to the magnitude of a present and impending danger. The cars of the New York and Erie railway, are now in the vicinity of the town of Erie in Pennsylvania, and menace Philadelphia with the abstraction of her trade in her own state, and at one of the most copious sources of its supply. The selfish and exclusive policy which suggested the six foot *gage* in opposition to (four foot eight inches) the universal *gage* of the country, will, in the presence of a rival produce the natural effect of illiberality, in cutting off a profitable union between that railway and the western roads. It indeed prevents the single evil which this short sighted policy proposed alone to redress,—the diversion of merchandise, once in its cars, from their destination in the city of New York. By forming a barrier, as it does, to the flow of all tributaries to its own stream, the invidious design will be thwarted or counteracted by turning these currents into the swelling channel of its rival leading to Philadelphia. But the relative distances from Erie to Philadelphia and New York, must determine the direction of the trade, whenever and as soon as the opportunity of a transit hither shall be presented.

With such means of intercourse, such of trade and travel to and with the west, north and south, no value can be set, no calculation made of their advantages, which would not be deemed vain or extravagant. The various treasures of the state will seek a market in her own metropolis, and the untold wealth of the fruitful regions beyond, surpassing in extent and fertility half the area of cultivated Europe, will be poured at her feet. With these aids and the facilities presented by her noble river, the commerce of Philadelphia requires but the sustaining hand of an earnest home-bred pride, it solicits but attention to the dictates of imperious duty, to be all that her local wants demand, all that honest ambition may covet, all that reasonable hope can justify.

The exports of Philadelphia which were less than eight millions of dollars in 1790, rose in 1796 to the sum of \$17,523,866. Chiefly with Philadelphia capital, Pennsylvania made the first turnpike road, excavated the first canal, and constructed the first railway of any magnitude in this country. The importance of internal improvements employed the tongues and pens of her best speakers and writers, at an early day. These sentiments concurring with the influence of her example and the experience of its effects, diffused a similar spirit through New York and New England. You will not accuse me of indulging in a boastful or vain-glorious spirit, in relating what history records. It is simply the truth, that Philadelphia, in all the duties of a large community,—in the construction of hydraulic works, for the introduction of pure water from without her municipal limits—in sanitary measures,—in a complete system of subterranean drainage—worthy of imperial Rome for solidity of structure—was equally in advance of her sister cities. Her progress required and sustained these improvements. The rich trade of the west seemed destined by nature, aided by the facilities of improved roads, to centre in Philadelphia. As the metropolis of the colonies, she became the capital of the United States, under the laws of the Federal union. Her China trade was large, and secured golden returns. The vessels of her merchants unfolded their canvass in almost every sea. Colossal fortunes were amassed by an expanded, intelligent and successful commerce. Under the genial influences of kindly wealth, heaven-blest charities were founded, and conveniences, arts and elegancies were multiplied. It forms a portion of the letter I inflict on you, to recount the means by which these advantages were lost, and how they can be restored, with those accretions which time has accumulated.

While thus prosperous, and her commercial progress eminently onward, Philadelphia became informed of the rich mineral wealth of the interior. The vast deposits of coal and iron were so alluring in their promises, that the public mind seized upon them with avidity. The first difficulty was to subdue those wild and magnificent fortresses of nature—those inaccessible walls of rock and mountain with which she delighted to guard her treasures. To penetrate their recesses, to scale their conglomerate ramparts, and convey the hidden mineral to market, over a country whose undulations of surface seemed to laugh at the effort, was ridiculed as the dream of fanaticism or the dictate of folly. But impediments seemed only to stimulate activity, to quicken the spirit of speculation, to open the purse of enterprise. Much of the capital which had been employed successfully in foreign commerce, was thus diverted from its accustomed channel, and taught to wander to the hills, the ravines and the rivers of the Lehigh, the Schuylkill and the Susquehanna.

Many millions of dollars were buried in the recesses of these mountains, or in attempts to wind round their valleys, or improve the navigation of their streams. Perhaps a *hundred millions*—and I do not lightly hazard this estimate—does not exceed the sum which was transferred from the concerns of mercantile activity, and absorbed in unproductive investments, made to develop the trade, the agriculture, and above all the mineral wealth of the interior. But prodigies were achieved in various parts of the state. The Schuylkill and Susquehanna rivers were first united by a canal, and both afterwards connected by the same kind of highway with Philadelphia. That vast arm of the Atlantic, the Chesapeake Bay, was joined by canal to the

Delaware, whose noble waters find a ready outlet to the sea. One of the great coal fields of the state was brought to the gates of Philadelphia by a fine canal and a noble railway, and innumerable other works of present expense and future utility were undertaken and completed. Fifty miles at least of under-ground railroad, are said to exist in Schuylkill county alone. The locks of the Lehigh canal are the deepest and finest in the world; and nothing can exceed in solidity and beauty, the inclined planes, and other artificial works of that opulent region. Of the coal mines and iron mines, of the canals and railways of the state, which were undertaken in that day of blind and wanton expenditure, how few have realised the dreams or the hopes of their ardent projectors. The geology of the state had not been explored, the art of mining was imperfectly understood, and the science of engineering, so crippled, was marked only by improvidence, by fraud, and by blunders. These gigantic efforts, like all premature and undigested schemes, were fruitful only of sad results to the undertakers. The coal trade was to be nurtured and matured by slow degrees; it is yet in its infancy, and only now beginning to reward its owners. The iron manufacture, which was called into existence by the *protective* system, must, in order to flourish, be sustained by the stability of genial legislation. Exposed to the caprices of fluctuating sentiment, and the evils of a step-dame policy, it continues to cripple or ruin the manufacturer.

While the commercial capital was thus wasting away, and the commercial spirit absorbed by momentous projects at a distance, the Erie canal was verging to completion. It was intended to conduct, by the way of the lakes to New York, that western trade which had been the exclusive property of Philadelphia. The object was fully attained. By this artificial highway, our natural heritage, the trade of the west, was transferred to a sagacious and vigilant rival. For a time, our shrewdest citizens were too much amused and delighted by their mountain treasures in the interior, to perceive the decline of their foreign commerce, and the adverse turn of the commercial tide in their domestic trade. The state, animated by a proper spirit towards her metropolis, determined not to submit, an unresisting victim, to an inversion of the natural laws of trade. She planned a grand scheme of internal improvements, which proposed, among its primary objects, the irrevocable appreciation to herself of the western produce and markets, and a part of the commerce of the lakes. This theory, if prosecuted with the intelligence and forecast which gave it birth, would have neutralized the effects of the Erie canal, and prevented the fame of Clinton, by undermining or removing the base of its monument. But owing to the irretrievable mistakes in the construction of the great highway, which was made to Pittsburgh, the western trade refused the conveyance—a conveyance which was, in truth, of such a nature as to confirm it inalienably to New York.

The chain which was to bind the east with the west, was not continuous and unbroken; composed of intermingled and welded links; but severed, disjointed, fragmentary. It was an amphibious connection of land and water, consisting of two railways separated by canal, and of two canals separated by railway, happily elucidating the defects peculiar to both modes of transit, with the advantages of neither. This improvement, being useless as a competitor of the Erie canal, and other projects being unfinished, the public works disappointed private hope in the benefits they promised, and public hope in the unprofitable burden they imposed. The Commonwealth oppressed by her debt, and the citizens impoverished by their losses, the western trade alienated and the foreign trade neglected and diminishing, Pennsylvania presented the reverse side of her early picture—one not pleasing to contemplate, but, I presume, less painful and humiliating in the remembrance and retrospect, than the experience and reality.

These misfortunes were accompanied or quickly followed by others. Severe losses in the China trade ruined some of our largest ship-owners, and unwisely led to the total abandonment, at our port, of this lucrative branch of commerce. In the gloom which pervaded the commercial ranks of society, some of the most astute and enterprising merchants removed to New York, and aided by their capital

and intelligence to build up that prosperity to which the acquisition of the western trade, and the foreign commerce of Philadelphia, had largely contributed. Other melancholy events succeeded. The bank of the United States, though situated in the city, did not render such accommodations to the business community here, as were favorable to the growth of the foreign, or the enlargement of the coasting trade. Still paper money was so abundant as to foster remote enterprises, and lead to many visionary and extravagant schemes. The bankruptcy of that great institution, so long the cherished object of our pride and confidence, was as sudden as the descent of an avalanche. Other financial disasters followed, in quick succession. These failures suddenly contracted, within the narrowest limits, a currency of unusual expansion, and threatened to involve our people in a general insolvency. Prices which had been unnaturally inflated, became so depressed as to be nearly nominal. All exchange of commodities was at an end, negotiations of sale and purchase stopped, and the payment of debts ceased. The banking capital of the city was reduced by the simple process of annihilation, from fifty-one millions to eleven millions of dollars! Where ruddy health, perhaps unnatural plethora, had appeared, all were paleness and dejection, wan extenuation and prostrate syncope. If a volcano had opened its fiery jaws in our midst, or an earthquake had shaken the firmest edifices to their foundations, the popular terror could not have been more painful or pervading. The multitudes over the state who had entered into engagements in a moment of universal confidence and upon the faith of fair but deceptive appearances, as they were unable to pay, were quickly required to make liquidation.

For the American Railroad Journal.
Mohawk Valley Railroad.

The report of the Directors and myself, on the proposed road has been before the public since the 15th day of May last; and, so far as my knowledge extends, not one word has appeared in print against it until the article which appeared in your Journal of the 2nd, in which the keen vision of "Herkimer" has enabled him to detect a "mare's nest" in the report.

Unfortunately for "Herkimer" he is most grossly in error in respect to his facts, which, I shall show, is followed up throughout his communication. He commences by saying that this "project has received its quietus from the deliberate judgment of men of sense and of capital." So far from this being the case, subscriptions are now being made daily to the stock of this company; and if "Herkimer" resides in the county of Herkimer this fact must be known to him; at all events, the subscription books can be produced if further evidence is required. Propositions are also being received for the construction of the work. Besides propositions have within a few days been made for the construction of the road from Utica to Syracuse, being the continuation of our line, which are considered very favorable indeed.

Now, I ask, if this looks like the abandonment of the work?

It is true, the Mohawk Valley road has not progressed as fast as its friends would have desired,—but this has not been owing to any want of confidence on the part of its proprietors; for this has increased as they have had time and the means of investigating it; but I can tell "Herkimer" it is owing to an entire different cause—to the unprecedented opposition which has been brought to bear by a company which has enjoyed one of the most profitable monopolies that has existed any where; and now, after they have grown rich and strong, "Herkimer" claims that this power should be used to perpetuate this monopoly to the exclusion of any other road, and thus prevent the public from

the benefit of competition. I would ask "Herkimer" whether the great reduction of fare, from three to two cents per mile, took place before or after the Mohawk Valley road was projected? The public know full well that it was made after, and they believe it would not have taken place otherwise.—Let me tell "Herkimer" that the exercise of this enormous power, to the exclusion of another road, will never be tolerated, and that the Mohawk Valley road is just as certain to be built and sustained as that the Valley remains where it now is.

"Herkimer" says, the "Utica and Schenectady road being paid for, and in *skillful hands*, it would soon *cool* the hopes of any adventurers who might embark their money in such a project." * Is not this "*cool*" indeed! This is certainly one of the boldest assertions of power from a creature of Legislature that I have ever heard put forth. It should be well pondered, and its effects traced to their legitimate results, which I have no desire to do, as the fact speaks for itself.

I will now proceed to notice some of the misstatements which "Herkimer" has made, which I think when pointed out, he will himself acknowledge is an unpardonable oversight in a critic; and must fully illustrate the fact, that *self-interest* blinds and benumbs all the keener sensibilities, and shuts out entirely the evidence of truth.

In order to prepare the way for the great discovery which he is about to make, "Herkimer" commences by proposing to examine the details "of the estimate," (it is unfortunate that he did not, as I shall show) "to see whether the misstatements and omissions may not lead to a doubt of their being entirely reliable."

Herkimer then alludes particularly to the Engineer's report, which he says "goes fairly into the project," (and then repeats what he has already said, as though he was determined to make his blunders still more apparent), "but it contains so many omissions in the estimates as to create a doubt whether it is not got up to order," &c. At this last remark I would be inclined to smile, did I not feel disposed to spare his feelings, when I came to expose, to say the least of it, the superficial manner in which he has examined the report.

"Herkimer" says he has examined the report, and has discovered that no provision is made for *graveling the road bed* from Schenectady to Canajoharie, a distance of 38 miles. I admit, if this were so, it would be truly quite a discovery. But let us see what the facts are. That there shall be no mistake about this grand omission, I refer "Herkimer" to page 36 and 37 of the report of the Mohawk Valley road; he will then find as follows:—

That section, No. 1, contains 85,470 cubic yards of road bed at 30c.....	\$25,641
That section, No. 2, contains 103,974 cubic yards of road bed at 30c.....	31,191
That section, No. 3, contains 120,150 cubic yards of road bed at 30c.....	36,045
That section, No. 4, contains 46,905 cubic yards of road bed at 30c.....	14,071

Total for graveling road bed from Schenectady to Canajoharie.....\$105,948

Now, I hope "Herkimer" will have the frankness to admit that this is an unpardonable oversight in him. After so plain and palpable an omission on the part of "Herkimer," I do not feel that I am called upon to follow him in his attempt to supply omissions in my report.

In speaking of the side hill excavation, he says, I have failed "to inform them (us) by what means

* The italicizing is my own.

this expense of 32 feet in width of excavation for his railroad is to be guarded against, when a ten feet beam for the canal has cost so much annually for the past 20 years." What nonsense! I would ask him if he supposes that the whole *prism* of the canal which is cut into the foot of the hill is composed of a ten feet beam?

He then says I have "omitted the usual ten per cent for contingencies." Now I submit whether the addition of so large a per centage is not evident that the person who makes it has not confidence in his own estimate. My rule and practice has been invariably to make my estimates with such care and so to average and classify the various items, and to put such a price as to render the addition of a per centage entirely unnecessary, and the result has verified them. I will simply further remark in respect to the estimates, that they will bear the closest scrutiny, and that they will be found ample to build a better road than the present.

The company have now two propositions from responsible parties, to build the road substantially at my estimate, and to take one \$350,000 of the stock of the company, and the other \$150,000, and 1,000,000 of 7 per cent bonds of the company.—These propositions should weigh at least as much as the assertions of Herkimer in regard to the insufficiency of the estimates.

As it regards the equipment, which I have estimated, it will be found abundantly ample to do the amount of business, which I have calculated will be done upon the road the first year; and it is vastly superior to that of the old company at the time it did the same amount of business. The 10 first class locomotive engines which I had estimated for, being all new, would be fully equal to 15 such as you would find on any railroad owning in all about 20 engines. If there should be a very large increase of business, beyond what I have estimated, an additional equipment might be required; in such an event, the company could well afford to supply it; and this I suppose to be the reasonable view of the subject.

"Herkimer" says—"some persons not over nice (he does not intend including himself as one of these) might not be able to see why the Utica and Schenectady railroad company should give up quietly (not they) 91,000 tons of their freight out of 98,000 tons which they have carried."

If we were not aware of the fact before, we certainly are now told by "Herkimer," that the "*skillful*" managers of this company would soon "*cool* the hopes" of any adventurers who might embark their money in this "project," with any such expectation.

We do not ask that the old company will give up one ton of freight, or one passenger which they have heretofore carried. All we ask is that we may have the increase which will take place by the time our road is completed, and has been one year in operation; and I am now well satisfied that I have very much under-estimated the increase of the freighting business, since the tolls have been taken off of the railroads.

In making my estimate of the probable amount of business which the Mohawk Valley road could safely calculate upon, I conceded the principle throughout, that there was an abundance of business for both companies, and that the old company were entitled to a business which would give them a clear net income of 10 per cent upon the capital actually expended in the construction of their road, which is the limit in their charter, and anything beyond that we had a right to claim. I know that

the old company has received much more than 10 per cent annually, and that its "skilful" managers will find various pretexts for not being satisfied with 10 per cent. As "Herkimer" says, "it is a kind of business that men who have nursed (and I admit the mother has been bountiful) will not surrender" readily.

"Herkimer" says quite too much for the interest of the old company, in respect to the means to which they will resort in order, if it were in their power, to destroy the new company, and thus perpetuate the monopoly of the greatest thoroughfare on this continent; they certainly do not want for the disposition, judging from the remarks of "Herkimer."

But let us see how this matter will stand. He says that they will reduce their prices, and many other things, but this seems to be the principal mode. The condition of the two companies to compete, will be something like this.

The old company has a capital of.....\$4,500,000
The new one will have a capital of.....2,700,000

The old company must divide on.....\$1,800,000 more capital, therefore, than the new company.— Besides the new company will have two thirds of the way business, and will have a better connection east, and equally as good a connection west; so that we shall fairly divide the through business. The explanation for all this will be found in the report. With this state of things, I can assure "Herkimer" that we have no fear of competition. The old company will be the last to commence it, by reducing their fares.

MR. EDITOR—I do not make it a practice to reply to anonymous communications, nor do I intend to, further. If "Herkimer" will come out manfully over his own name, that we may know who we have to deal with, (for he may chance to be a large stockholder, and perhaps a director, who has been "nursed" by this bountiful mother,) he will receive a candid and courteous reply to anything which he may be disposed to say in the same spirit.

There are merits in this project which only have been waiting for a candid discussion, to have the public seize upon them, and to carry the work into execution. The want of this discussion, I think, is the principal reason the work has not progressed more rapidly.

EDWARD H. BRODHEAD,
Civil Engineer.

Copper Mining in England.

The first account we find of the amount of copper ore sold in Cornwall, is in the year 1729, when the amount was 2,216 tons. For several years the product did not vary much from this amount. In the year 1764, the amount had reached 16,437 tons; in 1773 it was 27,654 tons. The increase was very gradual, the amount in 1800 being only 55,981 tons—an increase of about 100 per cent in twenty-seven years. The first year when it reached 100,000 tons was 1822, the amount being 100,364. The amount in 1832 was 136,719 tons, of which only 11,491 are pure copper. In all the above estimates, only from eight to ten per cent of the amount of ore is obtained in pure metal. The following is a tabular view of the sales of British copper ores in the district of Cornwall and Swansea, from the 30th June, 1832, to 30th June, 1850, showing the averages of the per centage of produce in metal, prices and computed quantities of fine copper, together with general averages, total produce in metal, and the money value of the whole. The value of ore computed to produce a ton of copper is also given:

CORNWALL.									
Year.	Tons.	Computed quantity of ore in tons of 21 cwt.	Average produce per cent.	Computed quantity of fine copper.	Average price of ore per ton of 21 cwt.	Total value in money.			
1833..	138,300	8		11,185	6 1 6	858,709			
1834..	143,296	7 1/2		11,225	6 4 0	887,902			
1835..	150,617	8 1/2		12,272	5 18 6	893,403			
1836..	140,981	8 1/2		11,640	6 17 0	957,752			
1837..	140,753	7 1/2		10,823	6 9 1	918,614			
1838..	145,688	7 1/2		11,527	5 17 6	857,780			
1839..	159,551	7 1/2		12,451	5 17 0	932,298			
1840..	147,266	7 1/2		11,038	5 7 6	792,758			
1841..	135,090	7 1/2		9,987	6 1 6	819,949			
1842..	135,581	7 5-16		9,896	6 1 6	822,871			
1843..	144,806	7 9-16		10,926	5 11 0	804,446			
1844..	152,667	7 1/2		11,247	5 6 10	815,246			
1845..	157,000	7 1/2		12,239	5 6 3	835,351			
1846..	158,913	7 13-16		12,448	5 11 7	886,785			
1847..	148,674	8 1-16		11,966	5 11 9	830,739			
1848..	155,616	8 1/2		12,870	5 6 0	825,080			
1849..	144,983	8 5-16		12,053	4 19 0	716,917			
1850..	150,890	7 13-16		11,824	5 8 0	814,037			
Tot.	2,650,672			207,617		15,270,637			
Av.	147,259		7.833	11,534	5 15 3	848,369			

SWANSEA.									
Year.	Tons.	Computed quantity of ore in tons of 21 cwt.	Average produce per cent.	Computed quantity of fine copper.	Average price of ore per ton of 21 cwt.	Total value in money.			
1833..	13,101	8 1/2		1,158	7 5 0	95,008			
1834..	18,112	8 1/2		1,580	7 7 6	133,821			
1835..	28,771	9 1/2		2,833	7 15 6	223,990			
1836..	34,366	11 1/2		3,849	9 17 6	340,025			
1837..	34,216	11 1/2		3,960	9 18 0	338,976			
1838..	42,931	13 1/2		5,906	11 4 6	481,323			
1839..	49,474	14 1/2		7,296	12 1 6	597,996			
1840..	56,279	15 1/2		8,473	11 19 6	671,012			
1841..	59,378	15 5-16		10,290	14 14 6	871,248			
1842..	56,821	16 1/2		9,378	14 5 0	808,182			
1843..	60,554	16 1/2		9,862	13 6 0	805,213			
1844..	65,520	16 15-16		11,108	13 9 4	882,568			
1845..	62,950	16 7-16		10,349	12 1 5	759,999			
1846..	64,987	15 1-16		9,788	11 10 6	748,915			
1847..	53,284	16 1/2		8,857	12 13 9	676,069			
1848..	50,731	17 1/2		8,645	12 8 2	629,660			
1849..	49,135	18 1/2		9,011	12 5 6	604,245			
1850..	40,755	16 3-16		6,603	12 14 6	518,265			
Total.	841,365			128,946		10,189,515			
Av.	46,742		15-325	7,164	12 2 3	566,084			

CORNWALL AND SWANSEA AVERAGE.									
Total produce of the whole in fine copper.	Total value of the whole in money.	Average value of the quantity of ore to make a ton of copper.	Average value of Cornish ore to make a ton of copper.	Average value of Swansea ore to make a ton of copper.					
Tons.	£	£. s. d.	£. s. d.	£. s. d.					
1833..	12,343	953,717	77 5	4 76 15	5 82 0	10			
1834..	12,805	1,021,723	79 15	9 72 2	0 84 14	0			
1835..	15,105	1,117,393	73 19	5 79 15	10 79 1	3			
1836..	15,489	1,297,777	83 15	8 82 5	7 88 6	9			
1837..	14,783	1,257,590	85 1	4 84 17	6 85 12	0			
1838..	17,433	1,339,103	76 16	3 74 8	3 81 9	11			
1839..	19,747	1,530,294	77 9	10 74 1	5 81 19	3			
1840..	19,511	1,466,770	75 3	6 71 16	5 79 10	11			
1841..	20,277	1,691,197	83 8	1 82 2	0 84 13	4			
1842..	19,274	1,631,053	84 12	5 83 3	0 86 3	7			
1843..	20,788	1,609,659	77 8	8 73 12	7 81 13	0			
1844..	22,355	1,697,814	75 18	9 72 12	3 79 9	0			
1845..	22,588	1,595,350	70 12	6 68 5	0 73 8	10			
1846..	22,236	1,635,700	73 11	2 71 6	4 76 10	3			
1847..	20,823	1,506,808	72 7	3 69 8	6 76 6	7			
1848..	21,514	1,454,741	67 12	4 64 2	2 72 16	8			
1849..	21,064	1,321,163	62 14	5 59 9	7 67 1	2			
1850..	18,427	1,332,302	72 6	0 68 16	11 78 9	9			
Tot.	336,562	25,460,154							
Av.	18,698	1,414,453	75 12 11	73 11	1 79 0	4			

Portage Lake Mining District.

Little has been heard from this section for some time, but most encouraging accounts are now beginning to come in. Masses of pure copper are said to stick out from well defined veins. A number of experienced miners are about commencing operations in that section, and we may soon expect to hear of new and interesting discoveries of native metal.

Great Discovery of Iron Ore on the Northern Shore of Lake Superior.

A mountain of iron ore has recently been discovered at Gros Cap, near Michipoten river, on the north shore of the Lake. Large quantities of iron are deposited in dikes, and situated so near the coast that the ore can be wheeled on board a vessel. The gentleman who made the discovery, says that thousands of tons can be extracted from the mountain, which is some three or four hundred feet in height. A company is being formed at Detroit to work the mine, and from the description there can be little doubt of their success.

To Chief Engineers, Directors of Railroads, Canals, etc.

A Civil Engineer and Surveyor, who has been professionally engaged under the British Government, East India Company, etc., is desirous of obtaining employment as an Assistant. No objection to the South or West. Address for one month to C. E. & S., American Railroad Journal office. August 16, 1851.

Railroad Iron.

THE Undersigned offer for sale 2,000 tons of Railroad Iron, to arrive at New York in the month of September next. It is of a most approved pattern and quality, and weighs about fifty-five pounds to the yard.

CHOUTEAU, MERLE & SANDFORD.

No. 51, New Street.

New York, August 9.

TO CONTRACTORS.

Delpre and Cincinnati Railroad.

Engineer's Office, }

Chillicothe, July 30, 1851. }

SEALED PROPOSALS will be received at the Engineer's Office, in Chillicothe, until the 18th day of September, 1851, for the Graduation, Masonry and Bridging of 42 miles more of their road;—25 miles being between Greenfield and Blanchester, and 17 miles east of the 11 miles now under contract east of Chillicothe.

Plans, Profiles and Specifications will be ready for examination, at the Engineer's Office, on and after the 10th day of August. Blank Proposals will be furnished to Contractors, and all necessary information given upon the line or at the office concerning the quality and quantity of work.

W. P. CUTLER, Pre't.

A. KENNEDY, Chief Engineer.

Virginia Locomotive and Car Works.

Wolfe Street and River Potomac, Alexandria, Va.
SMITH & PERKINS, Proprietors.

MANUFACTURE

Locomotive Engines and Tenders.

Marine and Stationary Engines and Boilers.

Chilled Car Wheels and Axles.

Patent Chilled and Wrought Slip-tire.

Machinery and Castings generally.

The undersigned having erected very extensive shops, and procured the most modern machinery and tools, are prepared to execute orders for Locomotive Engines, Cars, and Machinery of all kinds, with despatch, and on the most favorable terms.

R. C. SMITH,

Late of the Alexandria Iron Works.

THATCHER PERKINS,

Late Master of Machinery on the Balt. & O. R.R.
July 22, 1851.

Bridges & Brother, DEALERS IN RAILROAD AND CAR FINDINGS, 64 Courtlandt street, New York.

Having established a general Depot for the sale of articles used in the construction of Railroads, Locomotive Engines and Railroad Cars, we would invite your attention to our establishment. We have already in store a good assortment of CAR FINDINGS and other articles used in the trade, and feel justified in saying, that should you desire anything in our line, we can supply on terms perfectly satisfactory, and in the event of your desiring to order, you may feel assured that your terms will be as good as though you were here to make your own purchases.

Among our goods may be found Railroad Car Wheels, Axles, Jaws and Boxes, Nuts and Washers, Bolts, Brass Seat Hooks and Rivets, Window and Blind Springs, Lifters and Catchers, Door Locks, Knobs and Butts, Ventilators and Rings, Car Lamps, Coach and Wood Screws, Jack and Bed Screws and Babbitt's Metal; also Plushes, Damask, Enameled Head Linings, Cotton Duck for Top Covering in width sufficient without seams, Curled Hair and all other articles appertaining to cars.

Also a new and valuable CAR DOOR LOCK, well adapted to the Sliding Door. This is decidedly the best yet introduced.

LOCOMOTIVE ENGINE LANTERNS, the best article made in the country. Whistles, Gauge and Oil Cocks, Hemp Packing, American, Russian and Italian. We are also agents for Lightner's Patent Journal Box for Car Axles, that invaluable invention, for the economical use and preservation of Car Journals.

Coach VARNISH and Japan of the best quality. We would also offer our services for the purchase as well as for the sale of goods on commission.—Both members of our firm have had the experience of many years in the manufacture of Railroad Cars, and our Senior was a member of the well known house of DAVENPORT & BRIDGES, Car Manufacturers, Cambridgeport, Mass. With our knowledge of matters pertaining to Railroads, we feel quite confident in giving satisfaction to both buyer and seller, and hope that through assiduity and attention to any business entrusted to our care we shall merit a continuance of confidence and patronage.

BRIDGES & BROTHER.

July 22, 1851.

Lightner's Patent Axle Boxes.

THE Undersigned are Agents for, and offer for sale, *Lightner's Patent Axle Boxes*, for Railroad Cars and Tenders, which have, by thorough experience, been demonstrated to be one of the most valuable improvements ever introduced in Locomotion. The saving effected in oil alone, will in a few months pay the first cost of these boxes, independent of other advantages. They are now in use upon the following, among other roads, viz:

Boston and Worcester, Boston and Providence, Boston and Fitchburg, Nashua and Lowell, Providence and Worcester, Northern, N.H., Cheshire, Manchester and Lawrence, Concord, N.H., Concord and Claremont, Ogdensburg, (Northern, N.Y.) Stonington, New London Willimantic and Palmer, New Jersey Central, New Hampshire Central, Worcester and Nashua, Fitchburg and Worcester, Connecticut and Passumpsic, Lowell and Lawrence, Salem and Lowell, Wilton Branch, Newburyport.

Below will be found the certificates of a number of gentlemen, whose opinions will be good authority in every part of the country.

Office Boston and Prov. R. R., }
Boston, Dec. 28, 1849. }

MR. JOHN LIGHTNER,

Sir,—It affords me pleasure to say, that after two years' trial of your boxes, I am fully and entirely satisfied of their superiority over any other pattern we have used. This superiority consists in economy of oil and freedom from "heating." I have tried every pattern of box in use, of any note, and do not hesitate to say, that you have devised one which in every respect combines greater advantages than any other within my knowledge; these advantages are so manifest, that I am fitting up all

our cars with your boxes, as fast as practicable.

Annexed, is a statement of an experiment with your boxes, the result of which may be of use to your interests.

Ten passenger cars, running 72 wheels, fitted up with Lightner's boxes used 41½ pints of Patent Oil, at 50 cts. per gallon, ran 43,099 miles, equal to 51½ pints per wheel for 43,099 miles. Speed, 30 to 40 miles per hour.

Very respectfully yours,
W. RAYMOND LEE, Supt.

I have examined the above statement of Mr. Lee, and fully concur with him in his opinion of the superiority of Lightner's box.

GEORGE S. GRIGGS,
Supt. Machine Shop B. & P. R. R.

— Boston, July 26, 1849.

This is to certify that J. Lightner's axle boxes for railroad cars and locomotive tenders, have been in use on the Boston and Worcester railroad one year, and I unhesitatingly pronounce it, in my opinion, the best and most economical one in use, requiring less oil, of easy application, not susceptible of derangement, as in most kinds in use. When requiring repairs or renewal, the same may be done in one-fourth of the time usually occupied for that purpose. The box requires oiling not oftener than once a month—is kept quite free from dust, and consequently wears much longer than those generally in use.

D. N. PICKERING,
Supt. Motive Power, B. & W. R. R.

Office of Boston Locomotive Works, }
December 12th, 1849. }

The Boston Locomotive Company have been using J. Lightner's patent axle boxes under the tenders of their engines for several months, and find them more highly spoken of by the railroad companies that have used them in regard to economy in the use of oil, their durability and their ease of adjustment, than any other boxes which they have used. We therefore do not hesitate to recommend them to all railroad companies.

DANIEL F. CHILD,
Treas. Boston Locomotive Works.

Taunton Locomotive Works, }
Taunton, July 7, 1849. }

MR. H. F. ALEXANDER,

Dear Sir,—Your favor of yesterday came to hand in which you ask what success we have met with, in using Mr. Lightner's patent box for cars, engines, &c.

We have put it in use on the Boston and Providence railroad, New Bedford and Taunton Branch railroad, Central railroad, N. J., Norfolk County, Rutland and Burlington, and as yet we have not had one complaint from them; and from what we have used of it, and witnessed, we do not hesitate to say that it is superior to anything in use for that purpose. It is simple in its construction, and easy of access, and the reservoir is held close to the shaft, and the oil and journal is perfectly secure from dust; they will run from four to six weeks without replenishing the oil. The brass in the box is changed very much easier than by any other plan that we have seen.

Very resp. yours,
W. W. FAIRBANKS, Agent.

Office Providence & Worcester R. R. Co., }
Providence, Dec. 17th, 1850. }

H. F. ALEXANDER, Esq.,

Sir,—The "Lightner patent boxes" for cars and locomotives have been in use under a portion of the passenger cars and engines of this company for upwards of two years, and have given very great satisfaction.

Though combining many excellent qualities, their great superiority consists in the economy of oil.

The result of experiments upon this road shows the consumption of oil by the use of this box, to be not more than one sixth part the quantity consumed by the use of the common box.

With the common box, eight passenger cars, 64 wheels, running 90 miles per day, consumed in 12 months 520 gallons of oil, being an average of 8½ gallon per wheel per annum.

With the Lightner box the same cars running the same number of miles per day, during the same space of time consumed 73½ gallons of oil, being an average of 1½ gallon per wheel per annum.

So manifest are its advantages over any other box used by this company, it is intended to place it under all our cars as soon as practicable.

Besides the saving of oil, as they afford complete security from dust, we think them more durable than any other box in use.

Another advantage resulting from the use of this box is, cars run more easier than with the common box. The saving in fuel which it would effect, would of itself, we think be a sufficient inducement to use this box in preference to any other known to us.

Very respectfully,
ISAAC H. SOUTHWICK, Supt.
JOHN B. WINSLOW,
Supt. Machine Shop, P. & W. R. R.

Cambridgeport, April 5th, 1851.

H. F. ALEXANDER, Esq.

Sir,—This may certify that I have been engaged in the manufacture of railway cars since 1834, and have built for the different railroad companies cars of all descriptions to the amount of three millions of dollars, and have used on the above cars all kinds of journal boxes, and find that none give better satisfaction than the "Lightner patent box," both on account of the saving of oil and the arrangement for taking out and re-placing the composition by means of the sliding key, and other conveniences which no other box possesses.

Yours respectfully,
CHARLES DAVENPORT.

Worcester, March 17th, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—This is to certify that I have been for some years past engaged in building cars, and that I have tried most, if not all of the patent boxes, and have found Lightner's patent superior to all others as far as the saving of oil is concerned, also the ease with which they are fitted and exchanged in case they get out of order.

For the last three years, I have put them under all of the cars I have built, and in every instance they have given the most entire satisfaction.

Yours truly,
OSGOOD BRADLEY.

Office Union Works, So. Boston, }
May 23d, 1851. }

This certifies that I have applied Mr. J. Lightner's patent axle boxes to my locomotives and tenders for the past two years. I consider them superior to all others,—economical in their use, and possessing many important advantages not found in any other boxes.

SETH WILMARTH.

Office 15, R. R. Exchange, Boston, }
June 1, 1851. }

This is to certify, that we have known the success of Lightner's patent journal boxes upon various roads in New England the past three years, and have been led to examine their peculiar construction.—We are well satisfied of their merits, and have adopted them upon our small gravel cars, and take pleasure, as we ever have done, in recommending their use upon all roads where we are employed in the construction.

GILMORE & CARPENTER,
Contractors.

Amoskeag Manufacturing Co. Machine Shop, }
Manchester, May 31, 1851. }

H. F. ALEXANDER, Esq.

Dear Sir,—We are using the Lightner box on all the engines and tenders we build, and we are satisfied that it is the best box in use, and recommend the same to all those who purchase engines at our works.

Yours respectfully,
O. W. BAYLEY, Agt.

This is to certify that the Fitchburg railroad company having become satisfied of the superiority of J. Lightner's patent Axle Boxes for Railway Cars and Locomotive Tenders adopted the same,

and are bringing them into general use upon their road.

One year's experience with the above improvement, has fully convinced me that there has never been anything offered to the public for that purpose which possess such intrinsic value; in fact, this is an improvement which seems to overcome all the difficulties found in all the various kinds now in use. It possesses very many advantages over all others: Some of which are [first] the first cost is much less than that of most boxes in use. [Secondly] 75 per cent is saved in oil; one gill applied to each Journal once a month, or one quart to an eight wheel car, is all these boxes require per month [Thirdly] no dust can gain access to the Journal, which is constantly lubricated with clean oil; hence the saving in repairs of Journals and composition bearings, is a matter of importance. [Fourthly,] its construction is truly simple—not complicated, having nothing liable to become loose by constant and severe service. [Fifthly] for convenience there is nothing which approaches this improvement.—The composition bearings may be removed from the Journals of an eight wheel car, by one man, and returned, or duplicates, in twenty minutes, while under the car: the same would require two men, at least half a day with other boxes in use.—The trucks and wheels using these boxes, are free from oil and dirt, usually seen upon all railroad cars, at great expense to the corporation.

NATH'L JACKSON.

Supt. Car Building and Repairs, F.R.R. Co.

Boston, March 9, 1849.

I hereby certify, that I have examined a box for Car Journals, invented by Mr. Lightner of Roxbury, Mass, and I have thought so well of it that I have adopted it on our railroad, I have known of its success on other roads.

S. M. FELTON,
Supt. F. R. R.

Office of the Central R. R., N. J., }
Elizabethtown, May 1849. }

H. F. ALEXANDER, Esq.,

Dear Sir:—Your favor, [wishing to be informed how we liked Lightner's patent axle boxes for R.R. Journals,] has been duly received; in answer we would say, we have used the boxes on Locomotive tenders one year, more or less, and on our cars some six months. I consider them the best boxes in every respect, I have ever used, or even seen used on any other roads—for safety, durability and the economy pertaining to all the details connected with the boxes and Journals of R. R. Car wheels; and we shall adopt them upon this road.

Yours Respectfully,

JOHN O. STEARNS.

Supt. Central Railroad Co., N. J.

Manchester, N. H., Nov. }
1st, 1850. }

H. F. Alexander, Sir,

I have used "Lightner's Boxes" under all the Cars of the Manchester and Lawrence railroad, and feel no hesitation in saying that I think them to be the best boxes now in use.

Yours, &c.,

THEODORE ATKINSON, Agent.

Cheshire R. R. Office, Keene, }
March 5th, 1851. }

Mr. H. F. Alexander,

Sir,—Lightner's Patent Boxes have been used on the Cheshire R. R. about a year, and have given the highest degree of satisfaction.

All the Passenger Cars now in use, and a considerable number of Merchandize Cars are furnished with them, and they will take the place of the Common Boxes on all the cars as fast as circumstances will permit.

Very Resp't.

L. TILTON,

Supt. Cheshire R. R.

Boston and Worcester Railroad, }
Boston, April 1st, 1851. }

H. F. Alexander, Esq.,

Dear Sir,—Lightner's Patent oil saving box for railroad cars, has been adopted by this corporation; we are taking out the common and substituting the

Lightner's at the rate of fifty boxes per month; it will soon take the place of all others, as it is decidedly preferable to any heretofore used by this corporation.

G. TWITCHELL, Supt.

Statement of amount of oil used on 32 8-wheel freight cars, on the Boston and Providence Railroad (with Lightner's Boxes) from March 10, 1849, to February 27, 1851, and upon 12 8-wheeled passenger cars from September 8, 1849, to February 27, 1851.

FREIGHT CARS.

Amount Oil.	No. months.	Amount Oil.	No. months.
1.—21 pts.	10	17.—23½ pts.	14
2.—19 " "	6	18.—23½ " "	11
3.—25 " "	13	19.—36 " "	21
4.—18 " "	7	20.—22 " "	10
5.—22 " "	12	21.—38½ " "	24
6.—24 " "	13	22.—29 " "	23
7.—20 " "	11	23.—35½ " "	23
8.—21 " "	11	24.—37½ " "	23
9.—23½ " "	10	25.—51 " "	23
10.—21 " "	9	26.—31½ " "	24
11.—20 " "	9	27.—28½ " "	23
12.—21½ " "	11	28.—36 " "	23
13.—19 " "	8	29.—50½ " "	24
14.—25½ " "	17	30.—50 " "	23
15.—20½ " "	10	31.—41 " "	23
16.—31 " "	18	32.—39½ " "	23

Total, 925½ pts. 510

PASSENGER CARS.

1.—19½ pts.	18	7.—30 pts.	18
2.—25½ " "	18	8.—25½ " "	18
3.—33½ " "	16	9.—29 " "	18
4.—19 " "	15	10.—46½ " "	17
5.—15 " "	15	11.—9 " "	9
6.—22 " "	18	12.—65½ " "	17

Total, 340 pts. 197

Averaging 1 4-5 pints of oil for freight, and 1 7-10 for passenger cars per month only!

All orders and enquiries promptly attended to.

BRIDGES & BROTHER,

No. 64 Courtlandt st., New York.

July 25, 1851.

To Boiler Makers, Engineers, etc., etc.

PATENT LAP-WELDED IRON TUBES,
Manufactured by the

BIRMINGHAM PATENT IRON TUBE CO.
UNDER

PROSSER'S PATENT,

from one and a quarter to eight inches in diameter.

These tubes are well known for their superiority over all other descriptions for Locomotive, Marine and other Steam Engine purposes, for which they are used very extensively in Great Britain and on the Continent of Europe.

For sale in quantities to suit purchasers, by

WILLIAM BIRD & CO.,

44 Wall st., New York.

July 26, 1851.

To Railroad Companies.

THE undersigned has discovered and patented an imperishable, cheap, and sufficiently elastic substance, to be introduced between the sill and rail, so that the stone sill can be used in place of the wooden sill: entirely overcoming that rigidity where the rail is laid directly on stone. Address

J. B. GRAY, Philadelphia.

July 10, 1851.

To Contractors.

Peru and Indianapolis Railroad.

PROPOSALS will be received at the office of the Peru and Indianapolis Railroad, in Noblesville, until the evening of the 13th of August next, for the Grading of the line of the above road from Noblesville to Peru, a distance of fifty miles. Also the masonry for Bridges over the Wabash, Big Pipe and White Rivers.

The proposals are to be addressed to W. J. HOLMAN, Esq., Chief Engineer, at the Company's Office, where plans and specifications of the work may be seen. Payments will be made monthly in cash, reserving 15 per cent. till the contracts are completed.

Indianapolis, July 12, 1851.

European and North American Railway.

THE undersigned, the three persons first named in the first section of an act passed by the Legislature of Maine, and approved the twentieth day of August last past, entitled "An Act to incorporate the European and North American Railway Company," and being specially authorised therefor in and by said act, hereby give public notice that, for the purpose of receiving subscriptions to the stock of said company, as established by the act aforesaid, according to the provisions thereof, not exceeding forty thousand shares, books of subscription will be opened under the direction of the undersigned, according to the regulations prescribed, at the time and places following, viz:—On WEDNESDAY, the Twentieth day of August next, At Calais, Maine, with Noah Smith, Jr., Esq. Eastport, do. " Col. Bion Bradbury. Machias, do. " Walker & O'Brien, Ellsworth, do. " Seth Tisdale, Esq. Oldtown, do. " Geo. P. Sewall, Esq. Bangor, do. " Geo. W. Pickering, Esq. Orono, do. " Hon. Israel Washburn, Jr. Waterville, do. " Hon. Timothy Boutelle. Brunswick, do. " Prof. William Smyth. Augusta, do. " B. A. G. Fuller, Esq. Belfast, do. " John Y. McClintock, Esq. Portland, do. " John B. Brown, Esq. Portsmouth, N.H. " Hon. I. Goodwin. Salem, Mass. " Stephen A. Chase, Esq. Boston, do. " Francis Skinner & Co. Lowell, do. " John Wright, Esq. Worcester, do. " Charles Washburn, Esq. Providence, R.I., " Billings Brastow, Esq. Hartford, Conn., " Hon. C. F. Pond. New Haven, do. " Allen Prescott, Esq. New York, N.Y., " R. & G. L. Schuyler, No. 2 Hanover street.

Albany, do. " John V. L. Pruyn, Esq. Troy, do. " Hon. John D. Willard. Philadelphia, Pa. " Hon. Wm. C. Patterson. Montreal, Canada, " Hon. John Young. Quebec, do. " J. B. Forsyth, Esq.

Said books will remain open for ten successive days at the places and with the persons aforesaid. Dated at Portland, this sixteenth day of June, A. D. 1851.

ELIJAH L. HAMLIN,
ANSON G. CHANDLER,
JOHN A. POOR.

Trautwine on R. R. Curves.

By JOHN C. TRAUTWINE, Civil Engineer,
Philadelphia, Pa.

IN press, and will be published in a few days; accompanied by a Table of Natural Sines and Tangents to single minutes, by means of which all the necessary calculations may be performed in the field.

This little volume is intended as a field-book for assistants; and will be found extremely useful, as it contains full instructions, (with wood cuts) for laying out, and adjusting curves; with Tables of Angles, Ordinates, etc., for Curves varying from 13 miles, down to 146 feet Radius.

A portable Table of Natural Sines and Tangents to minutes, has for a long time been a desideratum among Engineers, independently of its use in laying out curves.

The volume is neatly got up in duodecimo; and handsomely bound in pocket-book form.

Sold by Wm. Hamilton, Actuary of the Franklin Institute, Philadelphia. Price \$1.

Also in press, and will be issued in a few weeks, "Trautwine's Method of Calculating Excavation and Embankment."

By this method, which is entirely new, (being now made known for the first time) the cubic contents are ascertained with great ease, and rapidly, by means of diagrams, and tables of level cuttings. Thin octavo; neatly half bound, \$1. For sale by Wm. Hamilton.

June 28, 1851.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff St.

Notice to Contractors.*Steubenville and Indiana Railroad.*

PROPOSALS will be received at the Office of the Steubenville and Indiana railroad company in Steubenville, until the first day of October next, for the Grading and Masonry of the first division of the road extending from Steubenville to the Connotten valley and also for the construction of the entire road between Steubenville and Coshocton; and also distinct proposals for the construction of that portion of the road extending from Coshocton to Newark.

The entire length of this line is about 110 miles, and it contains work of all descriptions, in great variety, some of which is quite heavy.

Proposals will be received for the Grading and Masonry of the first division entire or in sections of about a mile each, the Company reserving the privilege to make such disposition of the whole work, as may appear most conducive to its interests.

Plans, profiles and specifications can be seen at the office of the Company after the 15th of September, and further information may be obtained on application to J. Blickensderfer, jr., Chief Engineer, or to the undersigned,

D. KILGORE, President.

Notice to Contractors.*Engineers Office, E. T. & V. R. R. Company, Greenville, E. T., June 5th, 1851.*

PROPOSALS will be received until the 1st day of October next, for the Grading and Masonry of that part of the E. T. & V. Railroad between the Eastern terminus of said road at King's Meadow, and Rheatown, in Greene County, a distance of about forty seven miles. A large amount of very heavy work, both in Grading as well as Masonry, will be found on this division, offering strong inducements to able Contractors.

Maps, Profiles, and Specifications can be seen at this Office, on and after the 20th of July next.

The Company reserve the right to reject all, or any proposals that they deem unsatisfactory.

Proposals should be directed to the Treasurer and Secretary of the E. T. & V. Railroad Company, Jonesborough, E. T.

LLOYD TILGHMAN,
Chief Engineer.**Railroad Lanterns.**

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.

August, 16, 1849.

6m33

Railroad Iron.

THE Subscribers, Agents for the Manufacturers, are prepared to contract for the delivery of Railroad Iron at any port in the United States or Canada, or at a shipping port in Wales.

WAINWRIGHT & TAPPAN,
29 Central Wharf.

Boston, June 1, 1851.

Bowling Tire Bars.

40 Best Flange Bars	5½x2 inches,	11 feet long.
40 "	5½x2 "	7 feet 8 in. long.
40 " Flat "	6x2 "	11 feet long.
40 "	6x2 "	7 feet 8 in. long.

Now in store and for sale by

RAYMOND & FULLERTON,
45 Cliff street.**To Railroad Companies, Machinists, Car Manufacturers, etc., etc.**CHARLES T. GILBERT,
NO. 80 BROAD ST., NEW YORK.

IS prepared to contract for furnishing at manufacturer's prices—

Railroad iron,
Locomotive Engines,
Passenger and Freight Cars,
Car Wheels and Axles,
Chairs and Spikes.

Orders are invited; and all inquiries in relation to any of the above articles will receive immediate attention

THE Fourth Annual Exhibition of AMERICAN MANUFACTURES, by the MARYLAND INSTITUTE for the Promotion of the Mechanic Arts, will be opened in Baltimore on the 20th October, 1851.

The Exhibition will be held in the SPLENDID NEW HALL of the Institute, (fronting on Baltimore street) now being rapidly completed. Their edifice is centrally situated, chaste in its architecture, solid in its construction, and is by far the largest and most complete building in the United States, devoted to the Mechanic Arts. It may be added that this building is 355 feet long by 60 in breadth, with an average height of 68 feet, containing some twelve apartments, the largest of which is 255 feet by 60, and that the cost will be over \$70,000.

To this Exhibition, the Managers ask the attention of all engaged in industrial pursuits throughout the country, and cordially invite them to contribute specimens of their best productions for public inspection, and to compete for the prizes offered by the Institute. These prizes consist of Gold and SILVER MEDALS, DIPLOMAS, etc., which were last year distributed as follows:—Gold Medals, 16; Silver ditto, 90; Diplomas, 60; besides 85 articles of Jewelry, etc., to ladies. Fair play will be scrupulously observed towards all, and every facility of Steam power, shafting, fixture, labor, &c., &c., will be amply provided free of expense. The machinery will be under a special superintendent, and a fine display of it is looked for. The last exhibition of the Institute was visited by more than 40,000 persons, and with their vastly improved accommodations and alterations, this number will be doubled at the coming display, embracing many Virginians, Pennsylvanians, and other strangers from the South and West.

Joshua Vansant, President.
Ed. Needles, } Vice Presidents.
F. A. Fisher, }
Samuel Sands, Rec. Sec'y.
Wm. Prescott Smith, Cor. Sec.
F. J. Clare, Treasurer.

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(P) The last nine in Italics are the Committee on Exhibition.)

The Hall will be opened for the reception of goods on MONDAY, 13th October; on the next Monday, 20th, at 7 P. M., the Exhibition will be formally opened to the public, and will positively close on Wednesday, 19th November. Articles for competition must be in the Hall by Thursday night, Oct. 16, unless delayed in shipment after starting in ample time.

Those who intend depositing, will give the Committee or the Agent, notice as early as possible, stating the nature of the goods, and probable amount of room required, to exhibit them to advantage.

Circulars, containing a view of the new Hall and the full regulations of the Committee, with special information, if required, may be had promptly, by addressing the undersigned, or the Institute's Agent, J. S. Selby, Baltimore, post-paid.

ADAM DENMEAD,

Chairman Com. on Exhibition for 1851.

SUPERIOR BLACK WRITING & COPYING INK.**Jones' Empire Ink.**

87 Nassau st., Sun Building, New York city.

Net prices to the trade—		
Quarts, per dozen,	\$1 50	6 oz. per dozen, \$0 50
Pints, " "	1 00	4 " " " 0 37½
8 ounces, " "	0 62½	2 " " " 0 25

On draught per Gallon, 20 cents.

This is the best Ink manufactured. It flows freely, is a good copying ink, and will not mould, corrode, precipitate or decay. Orders for export, or home consumption, carefully and promptly attended to by

21tf THEODORE LENT.

To Railroad Companies, etc.

The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

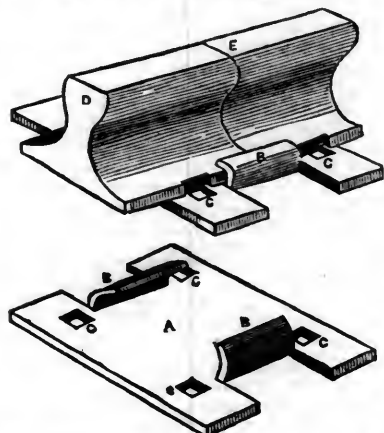
I also invite attention to an improved PATENT SPRING LOCK, for SLIDING Doors to Freight and Baggage Cars, now in use upon the Pennsylvania Central, Greenville and Columbia, S.C., Reading, Pa., and other Railroads.

Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH,

46 South 8th St. Philadelphia.

May 9, 1851.

The American Railroad Chair Manufacturing Co.

ARE prepared to make WROUGHT IRON RAIL ROAD CHAIRS, of various sizes, at short notice.

By use of the WROUGHT IRON CHAIRS, the necessity of the wedge is entirely done away—the lips of the chair being set, by means of a sledge or hammer, close and firmly to the flange of the rail.

The less thickness of metal necessary in the Wrought Iron Chair gives much greater power and force to the spikes when driven—and consequently a much less liability to the spreading of the rails by reason of the spikes drawing or becoming bent.

The less weight necessary in the Wrought Iron Chair, will enable us to furnish them at a cost much below that of CAST IRON CHAIRS.

DESCRIPTION OF THE ABOVE CUTS.

Figure 1 is a perspective view of the rail secured in the chair, and fig. 2 is a perspective view of the chair itself. D, E, are sections of two rails placed together, and secured at the joint on the chair by the jaws B, B. The chair is bolted down by spikes C, C. In fig. 2, the chair is represented as made of a single block or plate A of wrought iron.

The chair is set in its proper place on the track, spiked down, and the ends of the two rails brought together within the jaws as represented in fig. 1.

For further information address,

N. C. TROWBRIDGE, Secretary,
Poughkeepsie, N. Y.

June 1, 1851.

Railroad Commission Agency.

THE Subscriber offers his services to Railroad Co's and Car Makers for the purchase of equipment and furniture of roads and depots and all articles and materials required in the construction of cars, with cash or approved credit. No effort will be spared to select the best articles at the lowest market price.

He is sole Agent for the manufacture of the ENAMELED CAR LININGS, now in universal use. The best Artists are employed in designing new styles, and he will make to order pieces with appropriate designs for every part of the car, in all colors, or with silver grounds and bronzed or velvet figures.

He is also Agent for Page's Car Window Sash Fasteners, which is preferred by all who have used it to any other.

CHARLES STODDER,
75 Kilby st., Boston.

June 20, 1851.

3m.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 136 NASSAU ST., NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.
SECOND QUARTO SERIES, VOL. VII, No. 34! SATURDAY, AUGUST 23, 1851. [WHOLE No. 801, VOL. XXIV.]

ASSISTANT EDITORS,

J. T. HODGE, *For Mining and Metallurgy.*

GEN. CHAS. T. JAMES, *For Manufactures and the Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & Co., 136 NASSAU ST.

Saturday, August 23, 1851.

New York and Galway Steamship Co.

Now that electricity and steam have become the great instruments of commerce, and for the transmission of thought, the routes by which merchandise and intelligence can reach their points of destination in the shortest possible time, and with the greatest security to the latter, are sure to command the public patronage. The great idea of the age is *speed*; and we attach such an importance to superiority in this respect, that we are always eager to patronise the *fastest* lines, even at great inconvenience, if we gain nothing but the *clat* of having made "the shortest passage on record." But time in mercantile affairs has its value, as much as gold, silver, or corn; and that community is the richest, and bears off the palm of superiority, that has the command of the greatest amount of this commodity, or its equivalent, the power of abridging to the shortest limit, every business operation where *time* is an element. The great contests of the age are being waged, not in *wars*, but in the struggle for the *quickest* passage across the Atlantic. The sceptre of commercial greatness, and with

this, of intellectual and moral superiority, awaits the victor in this contest.

It is in strict obedience to this idea, universally recognised, that the line of steamers from New York to Galway has been projected. We have beaten the Cunarders upon the route common to both. We must now beat the Collins' line by the opening of a new and more expeditious route. We must adopt the shortest route *absolutely*, and cut ourselves away from the monopoly of Liverpool, which has nothing but custom, and its great trade, to recommend it as the European terminus of our steam ship lines. Commerce, left free, will in the end acknowledge no such claims. Sooner or later it always takes the *shortest* route. To reach Liverpool, we are compelled to make a circuit of more than one-half of Ireland, and sail up a long and dangerous channel, in which ships are constantly exposed to delays, and to the danger of being wrecked. When the port of Liverpool is reached, vessels are obliged to have the tide in their favor, before the bar at the entrance to the harbor can be passed. In reference to this, we copy the following extract from Wilmer & Smith's *European Times*, of the 2d inst. In speaking of the recent arrival of the *Baltic*, it says:

"THE *BALTIC*.—The American Mail Steamship *Baltic*, Capt. Comstock, arrived off the Bell Buoy at half-past four on Tuesday evening, the 29th ult., where she lay till the returned tide enabled her to cross the bar. A small steamer met her at that point, took her mails and passengers, which were landed at half-past six. The ship entered the river at half-past nine. Her letters were delivered in Liverpool, London, Manchester, Glasgow and Birmingham, on Wednesday morning, and those for the Continent at noon the same day."

On the other hand, Galway is the *nearest* European port to the United States. It is very accessible, having sufficient depth of water for the largest class ships at all times of tide. Had the *Baltic* arrived at Galway instead of Liverpool on the evening of the 29th ult., her mails and passengers would have reached London on the following morning; and had she sailed for Galway direct, she would have saved *two full days* on her passage—a saving of vast importance to the commercial interests of the world. From Galway to Dublin, the railroad is now in operation, and passengers can proceed all the way to London by this mode of conveyance, with the exception of a few hours spent in crossing the channel. This route will not

only be by far the most expeditious, but we believe it can be made the easiest and most agreeable one. There are few passengers, when the west coast of Ireland would be reached, that would not gladly leave the steam ship for a railroad. To passengers going to London, landing at Galway would simply prolong the distance to be travelled in this way.

While Galway is the *natural* transatlantic port for our ocean steamers, and must soon become the terminus of our passenger lines of steamships, the first efforts of the *New York and Galway* company will be directed to the formation of a line for the accommodation of the vast tide of emigration now pouring from Ireland to the United States. These emigrants now reach this country by way of Liverpool. The company propose to put the cost of passage at a low rate. In addition to this, taking passage at Galway will save a large portion of the present cost, and the impositions practiced, and hardships suffered, at Liverpool, and at other points, before embarkation. Instead of the long passages in sailing ships, so fruitful in disease and crime, only a few days will be occupied in the route by the steamers, and passengers can be landed without having their health impaired, as we find is too often the case in the present mode of transit. The steamers, properly managed, will achieve an act of *humanity*, as well as economy, and on this account deserve the encouragement of every friend of the emigrant. That the enterprise will be a most profitable one, we cannot doubt. Already, nearly 200,000 emigrants have arrived in this city alone during the present year; and before its close, the number will reach 300,000 or 350,000. A large portion of these come from Ireland, and would take passage in steamships in preference to sailing vessels.

This scheme, if properly carried out, will have results vastly more important than the mere carriage of passengers. It will let in a ray of light upon benighted Ireland. Men are trained and educated by being brought into contact with each other. A man isolated from all contact with his fellows, becomes an idiot. He retrogrades, instead of advancing. By association we borrow the ideas of others, and bring out and strengthen our own characteristics. The Irish are peculiar, not cosmopolitan, in their leading traits. Turn a stream of travel through that Island, and each traveller would, to a certain extent, leave behind him an impress of his own character, in the recollec-

tions of its people. All the fragments would gradually become incorporated into their national characteristics and ideas, and would, in the end, be the means of forming a new and better race. England is made what she is by the vast variety of elements which make up the aggregate of her national mind. Ireland has never been thoroughly subdued. England has been, a great many times; and the result is, that the most valuable qualities of all the races, or nations, that have there contended for the mastery, remain. Each different people obtained sufficient foothold to make themselves felt to the present time. The English national character, therefore, is broad and comprehensive, adapted to every emergency, and equal to every crisis. The Irish are still fragmentary. They are great only in particular directions. This explains the cause of their present condition, and accounts for their never being able to throw off the English rule. They need other qualities, and these can be introduced only by bringing other races among them.

We are glad to learn that there is every prospect that the above scheme will be well carried into effect. A meeting of its friends was recently held in this city, at the office of H. B. Tebbetts, No. 40, Wall Street, at which Dudley Persec, Esq. acted as chairman, and Joseph Stuart, T. A. Emmitt, John B. Dillon, Robert E. Kelly and S. Draper, acted as secretaries, which resolved, that in view of the large and increasing emigration from Europe, especially from the British Islands, to this port, it is due to humanity that steps should be taken to lessen the hardships now endured by the less wealthy classes of Emigrants, by placing within their reach the means of cheap and rapid passage across the Atlantic, thus saving them the privations and sufferings attendant on a long voyage; that the formation of a line of first class steamers between the port of New York and Galway cannot fail to promote the lasting interests of commerce, and that it would greatly facilitate the transmission of correspondence between this country and Ireland.

At a meeting of the Board of Aldermen of this city, held on the 13th inst., a resolution was adopted strongly recommending this enterprise to the support and encouragement of the community, as being a means of cheapening and expediting communication between the United States and Europe, and being eminently calculated to promote the interests of commerce between New York and Great Britain.

For the American Railroad Journal.

Marietta and Philadelphia, vs. the Parkersburg and Baltimore Railroads.

H. V. Poor, Esq.

From several articles in your valuable Journal, in regard to the above projected railroads, I notice much interest has been excited, which is no matter of surprise, when the importance of the enterprise to the various interests involved is considered, and the effects especially upon the two cities named are fully ascertained and understood. The truth is sought, not mere speculations; and I presume your columns are open to a fair discussion of the subject upon its merits. I propose, therefore, to give my views upon the question.

Not having observed the article commented upon by "Baltimore," I must confine my remarks to a review of that of the reviewer, re-published in the Patriot of the 5th inst.

The first and main point in the controversy, and the one upon which the merits of the case chiefly turn, is that of the relative distances (or time), say from Athens, Ohio, the first point in the west, com-

mon to both routes, to the city of Philadelphia. I say Philadelphia, for this may be fairly taken as the eastern point to be reached; and, in a business point of view, this seems to be conceded by "Baltimore," inasmuch as no effort is made to show that any great importance should be attached to the city of the same name, as a point to which any considerable portion of the trade and travel of southern Ohio, Kentucky and Tennessee is destined. This inconsiderable fraction, moreover, is likely to be diminished, by equal facilities for trade and travel direct to Philadelphia by the proposed road—a large portion having hitherto been compelled to pass through Baltimore to the cities of the south.

In discussing the matter of distances, I dissent entirely from the *very convenient method* adopted by "Baltimore," of measuring distances on the map, and adopting a *sliding scale* in adding $\frac{1}{4}$, $\frac{1}{2}$, or any sum he may find necessary, to produce a desired result, or distance; as, for example, he says from Marietta to Athens, 31 miles, add $\frac{1}{4}$, making 42 miles; whereas, this line has been surveyed under the direction of the chief engineer of the Belpre company, and ascertained to be 38 miles, and it may yet be diminished; or upon his favorite route from Parkersburg to Three Forks Creek, he seems to be very liberal in adding $\frac{1}{4}$ to the air-line, producing 115 miles as the result, whereas 140 miles will be ascertained to be nearer the true distance.

I shall adopt, in my table of distances, what I believe in each case the best and most reliable authority will warrant. The precise distance has been ascertained on the Parkersburg route, except from Parkersburg to Three Forks creek, which I place at 120 miles, believing at the same time that 130 miles will be ascertained to be nearer the truth. Such is also the fact upon the Marietta route, except from Greensburg to Marietta, which I assume to be 150 miles, with more than equal chances that it will be diminished.

1st. Philadelphia, via Baltimore, to Athens—
Philadelphia to Baltimore..... 98 miles.
Baltimore to Cumberland..... 179
Cumberland to Tygart's Valley bridge.. 101
Tygart's Valley bridge to Parkersburg.. 120
Parkersburg to Athens..... 36

534 miles.

2d. Philadelphia, via Hempfield and Marietta, to Athens—
Philadelphia to Greensburg..... 323
Greensburg to Wheeling..... 75
Wheeling to Marietta..... 75
Marietta to Athens..... 38

511 miles.

Lineal difference in favor of Marietta route..... 23 miles.

I will apply a test more satisfactory to the traveller. Measuring railroads by miles is an "obsolete idea." It must be done by hours.

1st. Philadelphia, via Parkersburg—
Philadelphia to Baltimore by the Wilmington railroad, their *express mail time*..... 6 hours.
Baltimore to Parkersburg, 25 miles per hour..... 17½
Add for loss of time by high gradients.. 2
Average delay crossing the Ohio at Parkersburg, for want of a bridge, which cannot be supplied..... 0½
Belpre to Athens..... 1½

27½ hours.

2d. Athens to Wheeling, 25 miles per hour..... 4½ hours.
Wheeling to Philadelphia..... 16

20½ hours,

bringing Athens actually one hour nearer to Phil-

adelphia than to Baltimore. The reader may ask—why 6 hours from Baltimore to Philadelphia? The experienced traveller needs no explanation.—It is occasioned by the loss of time in crossing the Susquehanna river in boats; the Gunpowder, and various streams and indentations of the Chesapeake, by long trestle bridges, at very slow speed, which probably will never be remedied. There is little doubt that the same locomotive will start west from the junction of the two roads (if both be constructed), with the passenger trains from Philadelphia and Baltimore, which leave those cities at the same hours. Passengers and trade going east, will also arrive at Philadelphia and Baltimore at the same hours. Hence travel, etc., destined to Philadelphia, and north of that city, will take the Marietta and Hempfield route; that going to Baltimore and Washington will prefer the Parkersburg route. Those familiar with the business of the great west and southwest, agree that fully seven-eighths of this trade and travel are destined to Philadelphia, and north of that city; hence it becomes the managers of the Pennsylvania railroad to take early measures to compete with the Baltimore movements, by leading off in securing the extension of the Marietta road to Wheeling, thereby speedily bringing this vast trade and travel to their line.

I am aware that 83 miles is claimed as the distance from Wheeling to Greensburg; this I do not concede. A controversy on this point, however, will avail nothing; besides the precise distance will soon be ascertained. I have good authority for believing it will be less than 75 miles. The route from Marietta to Wheeling, via the Little Muskingum river, to a point near the mouth of Sunfish creek, thence to Wheeling, has not been surveyed. Those most familiar with the route are of opinion it will be less than 70 miles, if favorably constructed; and no grade exceeding 10 feet.

The actual difference in the length of these two great lines will be accurately determined only by instrumental survey; until then it must remain a matter of opinion. I concede to others the full enjoyment of theirs, and claim the right to my own; and shall not concede, until it is proved by actual survey to the contrary, that the lineal difference in favor of the Marietta route to Philadelphia, is less than 30 miles. I believe it will be nearer 40.

In regard to grades, I am unable to institute a full comparison, for the want of a profile of the Baltimore and Ohio railroad. I proceed with a comparison, however, so far as data within my reach will allow. 1st, "Upon each side of the ridge, between the Potomac and Patapsco, the Baltimore and Ohio railroad has gradients of 82 feet per mile on curves of short radii; and in overcoming the Alleghenies, they ascend for 11½ miles at 116 feet per mile, and 105 feet for 3½ miles, thence following for 12 miles the *summit of the mountain*, it descends at 116 feet per mile for 8½ miles, to the valley of the Cheat river, from whence they ascend Laurel Hill at 105 feet per mile for 5 miles, and descend on the other side at the same rate for a like distance;" 2d, "The Pennsylvania railroad has no westward gradient exceeding 21 feet per mile, or eastern greater than 10½ feet, until it reaches the base of the Alleghenies, 130 miles; and this barrier is overcome by a maximum gradient of 84½ feet on straight lines for 12½ miles. Thence to Pittsburgh, the maximum gradient is but 50 feet per mile, and upon more than one-third of this distance continuously the gradients do not exceed 26½ feet per mile."

The extent of the gradients between the Potomac

and Patapsco, when considered in connection with the short curves, are probably equal to the mountain gradients of the Pennsylvania railroad; and conceding, for comparison, the residue of the Baltimore road to be equal to the Pennsylvania road, it will leave the high gradients of the Baltimore road detailed above, as the excess to be equated, and their final effects ascertained and determined upon time or distance [being the same in effect] and the cost of transportation. I suppose this cannot be done by any arbitrary rule, as various circumstances enter into the calculation. Conflicting theories are held among railroad engineers of equal talent and experience upon this subject. The aggregate of ascents and descents of the Baltimore road, in overcoming the Alleghenies alone, is as follows:

ASCENTS.		
11½ miles, at 116 feet.....	2,334	
8½ " " 105 "	892½	
		3,226½
DESCENTS.		
8½ miles, at 116 feet.....	986	
5 " " 105 "	525	
		1,511
33½ miles.		4,737½ ft.

Showing a total of ascents and descents of 4,737 feet in the mountain range—being to that extent an excess over the Pennsylvania road. Adopt 66 feet of ascents and descents as equivalent to one mile, and the loss to the Baltimore road in the difference in gradients is about 72 miles, which added to the lineal difference of 23 miles, practically makes it 95 miles nearer to Philadelphia, through Marietta and Wheeling, than through Parkersburg and Baltimore from Athens or Chillicothe, Ohio. I hazard the opinion that there is not an experienced and disinterested railroad engineer in the United States, who would not in locating a railroad, concede a mile in distance in preference to incurring a gradient of 66 feet. For authority to sustain a high gradient as equivalent to a mile, reference is had to the Report of B. H. Latrobe, Esq., Chief Engineer of the Baltimore and Ohio railroad company, in the controversy between said company and the city of Wheeling, in comparing the relative merits of the Grave and Fish creek routes.

To those who may be curious to probe this subject still further, it will be interesting to refer to a Report of Col. Childs to the Mobile railroad company, in which this distinguished engineer publishes a table showing the comparative gradients, and other distinctive features, of the Baltimore and Ohio, the Pennsylvania, and the New York and Erie railroads. If this disinterested and high authority will not fully warrant the opinion, that a passenger or a barrel of flour can be transported as quickly and as cheaply from Chillicothe to Philadelphia as to Baltimore, then further speculations on this subject will be useless. In regard to the Central Ohio railroad, or the proposed Lancaster, Wilmington and Zanesville road, it is claimed by Philadelphia, and conceded by "Baltimore," that those will bring direct to the lap of Philadelphia the trade and travel of Cincinnati—and for this purpose I concede the Marietta road is unnecessary and own it for this trade we are seeking, Philadelphia would content herself to abide the kind counsel of "Baltimore," and "help the substantial Central Ohio, and not the chimerical Marietta scheme." The Marietta road is nevertheless important to Philadelphia, in view of the large local trade which will find its way from the country it traverses, and the rich valley of the Scioto, to this city, as well as its full share of through business from Cincinnati.

But, Mr. "Baltimore," there are southern branches

and connections to this great south Ohio line, which are peculiarly attractive to Philadelphia; these, added to the vast local trade of this south Ohio line, and you have one of the most important railroad thoroughfares in America. These lines running from the Marietta road west of Athens, [through one of the richest mineral fields in the world] to Portsmouth, then crossing the Ohio river, 210 miles [by the river, and 122 miles only by the railroad,] below Marietta, thence following the river to Maysville; there intersecting the great Kentucky line of railway, stretching through Lexington, Louisville, Danville, etc., to Nashville in Tennessee, at which point railroads are centering from South Carolina, Georgia, Alabama, Mississippi, Louisiana, West Tennessee, etc., forming a grand reservoir of trade and travel, from which an immense stream of southern business must flow northward through Kentucky to the great Atlantic cities of the north and east—a trade and travel which will far exceed in amount that which can ever be commanded by any one or even two of the roads stretching directly westward to St. Louis from the Atlantic cities. The vast trade of Kentucky and Tennessee has been enjoyed by Philadelphia almost without a rival since the settlement of the country. She regards it as the "apple of her eye;" she will never relinquish it voluntarily; no sum will purchase a quit claim to it; but as Mr. "Baltimore" seems to be particularly interested in our welfare, very fearful we shall squander our money—if he will point out a better or more direct route by which to bring this vast Philadelphia trade direct to her lap, than through Marietta to our own Pennsylvania railroad, and one which will cost less money, we will consider the propriety of adopting it; and if on investigation it is found a better project, we will give the "go by" to the "chimerical Marietta scheme."

The last paragraph of your article, Mr. "Baltimore," seems to be somewhat minatory in its tone. This results from two causes: disappointed hopes, and erroneous views as to your remedy. Let me correct the error into which you have been betrayed in your intercourse with unscrupulous parties, whom you have mistaken for friends. You warn Chillicothe to be careful lest they provoke the construction of a road from Parkersburg to Cincinnati (for which you say there is an independent charter) by a more southern line across Ohio, leaving Chillicothe several miles to the north. You have been duped, Mr. "Baltimore." There is no such charter. The Hillsboro' company are authorized to extend their road to Marietta, or to any point on the Ohio north of Marietta; they are prohibited from going to Parkersburg. Under the present constitution of Ohio, a practicable railroad charter cannot be obtained; aid from towns, cities and counties is prohibited; above and beyond all this, you cannot obtain a shorter and a practicable route as you propose, even if you possessed all the other requisites, unless your fancy for high grades should lead you to devise a few more of 116 feet.

Mr. "Baltimore," why this threat? Whence all this alarm and feverish excitement, if the Marietta scheme be "chimerical?" Why concern yourself so much for Philadelphia interests? Your counsels have not been sought. The answer is but too apparent. It is your own interests, and not those of Philadelphia, for which you are concerned; this Philadelphia scheme to intercept the trade of the southwest on the banks of the Ohio river, and bring it direct to our city over our Pennsylvania

road, is competition from an unexpected source.—The success of the enterprise is too easily seen; it is beyond a doubt; it cannot fail; Philadelphia is only aiming to bring a trade which is hers by pre-emption, by the most direct, and by her own thoroughfares, into her lap. She does not seek to rob Baltimore, for Baltimore has comparatively no trade from Kentucky and Tennessee of which to be robbed. She must, however, submit to lose the business of furnishing a supper and breakfast to the western traveller destined to Philadelphia—a loss she will deeply feel; as to her it has been an important item, inasmuch as the National road and other improvements have made the Baltimore route hitherto the desirable one to this city, even for the Pittsburgh, as well as the western and southwestern traveller. But this "chimerical Marietta scheme," added to our Pennsylvania road, and its other connections, will bring direct to Philadelphia nearly all the trade and travel which has hitherto passed through Baltimore to the north, except so much as is direct from the south and from the east slope of the Alleghenies. Within two or three years, all this trade and travel will find its way to its proper destination by the Pennsylvania routes, if Philadelphia affords at an early day the small aid required, when it will be inevitably and forever lost to Baltimore, without hope or chance of recovery.

PHILADELPHIA.

On the Gauge of Railroads.

ENGINEER'S OFFICE, PACIFIC RAILROAD,
St. Louis, 27th June, 1851.

THOMAS ALLEN, Esq., President:

Sir,—In compliance with a resolution of the board in regard to the width of gauge for the Pacific railroad, I have to submit the following observations:—

What is termed now the "narrow gauge," is the prevailing gauge of the majority of the English railroads, and of the majority of the railroads in the New England states, and the states of New York and Pennsylvania.

This gauge gives a width between the rails of 4 feet 8½ inches.

The "narrow gauge" was adopted in England at a time when horses were used upon railroads, and before locomotive power was introduced. The Stockton and Darlington railroad followed the gauge of the railroads connected with the extensive collieries of that neighborhood, which had been found sufficient for the purposes of freight, and for the light passenger business which the indifferent accommodations of that day created. The Liverpool and Manchester railroad followed the same gauge, although locomotives were in use on the Stockton and Darlington road at the time of its construction, but these were so imperfect in their results, and so incapable of rapid motion, that it was a question then whether fixed engines or locomotive engines should be adopted for motive power on the Liverpool and Manchester road. The introduction of the "narrow gauge" was not the result of an experience of what was best suited to locomotive power. Its adoption had no reference to that power, and was in a great measure accidental.

The railroads which followed the "Liverpool and Manchester," after its successful accomplishment, copied that road as their model. The engines first used on the Liverpool road, and on all roads built within ten years of its date, were very much smaller in capacity than those which are used now, and no inconvenience was complained of then in regard to the width of gauge being insufficient to admit of a convenient and economical plan

of locomotion. When a different gauge began to be seriously thought of, the extent of railroads in existence, all after the same model, rendered it very questionable whether the inconvenience attending the introduction *then* of a different and wider gauge, would not exceed any advantage which theoretically might be demonstrated of it. This was the state of the case in England at the time that the seven foot gauge was introduced on the Great Western railroad, and it is the state of the case in the New England states now, (Maine excepted) where a road of wider gauge than 4 feet 8½ inches, if constructed now, would be cut off at great inconvenience, from communication with the numerous railroads in operation there.

The immense freight and passenger business which has gradually accumulated in the neighborhoods of railroads, has led, step by step, to the introduction of very large and powerful machines, requiring, it is contended by many, for their economical and stable arrangement, a greater width of track than that originally adopted when horse power was applied to railroads, and when machines of one fourth the size of those now used were competent to do the business which then presented itself.

The application of as large engines as the strength of the road would admit of, to the freight business, enabled that business to be done more economically, promptly and safely. It could be done more economically (within limits governed by the strength of the road), because the engine drawing 100 tons of freight, required the same attendance as the engine drawing 200 tons of freight, and the fuel consumed was greater in proportion for the small engine, than for the larger one. It could be done more safely, because the fewer trains there are on a road, the less risk there is of accidents and collisions, and for similar reasons it could be done more promptly, because with the fewer trains, there is less loss of time by delays at passing places, waiting for opposite trains.

There are exceptions to condensing the passenger business in this way. Where the country is densely populated as in the neighborhood of large cities, the population is best accommodated by frequent trains carrying a limited number of passengers and light locomotives can be used with great advantage. But where the country is thinly populated, the passenger business to be done with profit to the company, must be done by large trains running once or twice a day either way, and filled up, (as on your road, for instance,) from a great number of stations, on a distance, in this case of 300 miles of railroad. This kind of business to be done promptly, requires large and powerful engines, because the passenger locomotive must have enough of surplus power to enable her to make time under all the irregularities due to occasional crowded trains, and to that moist state of the rails which reduces so importantly the adhesion of the driving wheels.

When the public was satisfied with 15 and 20 miles an hour for passenger traffic, a smaller class of locomotives could do the business, than is necessary now when a rate of 25 to 35 miles an hour on the road must be kept up ordinarily, to make the time, which, including all stops, gives the average of 20 miles an hour of "accommodation trains." Experiments show that the traction on a level is, at 20 miles an hour, from 12 to 14 lbs. per gross ton, while at 30 miles an hour the traction is from 17 to 22 lbs. per gross ton; requiring at 30 miles an hour, the application of nearly double the power required for 20 miles an hour.

Experience supplies ample proofs of the value of powerful engines for a heavy freight business, and for a long passenger business. The desire to economise in this direction, has indeed been carried further than the present strength of our roads justifies, and it has become a question whether the damage done to the track in consequence, has not in many instances exceeded the advantage done to heavy engines and large trains.

I have called your attention to the powerful engines which have gradually come into general use, and the reasons for their introduction, because, if our practice in that particular has been erroneous in principle, and light engines for all the business of the road are to be preferred, one of the prominent reasons advanced in favor of an increased width of gauge, falls to the ground.

The reasons advanced in favor of a greater width of track, are mainly the following:—

1st.—As regards the locomotive—

That a greater width admits of a better proportioned boiler, better arranged, and therefore more economical as regards the heating surface in the fire box, compared with the tub surface.

That it admits of a lower position of the boiler, and consequently of a more stable machine on the road.

That it admits of the application of larger driving wheels, which reduce importantly the velocity of the pistons, and of all the gearing connected with them, and hence the general wear and tear of the engine.

That for the maximum velocity of the piston rod, (there being a limit to that velocity) if the wider gauge admits of the use of larger driving wheels, it admits proportionally of a greater maximum rate of speed.

All these advantages are more or less attainable, and the testimony of engine builders generally, is in favor of a greater width of gauge to secure one or other of them; but opinions are very various in regard to the precise width which should be adopted.

2d.—In regard to the cars—

The passenger car on the narrow gauge is not of sufficient width to give comfortable sitting room for the passengers. The space allotted to each passenger is too confined, and does not admit of that change of position so essential to comfort on a long journey.

The cars of the New York and Erie road, which has a wide gauge, are in this respect very sensibly superior to those of the narrow gauge roads, and the additional comfort is very generally acknowledged.

This is a matter of a good deal of importance, when we consider that the larger half of the profit of the road, will by-and-by be derived from its passenger business. For freight cars an increase of width is of less consequence, though for bulky articles, whose weight will not make up a carload, it becomes very convenient, and economises the number of cars necessary to be used.

The lengths of the cars in either case do not differ essentially.

The difference is mainly in the width, whether of passenger cars or freight cars. The number of passengers carried is not increased,—the number of tons carried in each freight car is increased in the present practice in the ratio of about 1-10 of the load.

The dead weight carried is a little greater for the passenger cars per passenger, but for the freight cars per ton, it is not quite so great. In these comparisons I am thinking of the gauge of the New York and Erie railroad. The cars are believed to be more steady on a road under a greater width of

gauge, and the engines also, in consequence of the greater base on which they operate.

The objections to any increase in the width of gauge are mainly as follows:

The cost of the graduation and masonry of the road is increased.

This increase is in proportion to the addition made to the width of gauge.

If we take as an example a width of five feet six inches, and compare it with the width of the narrow gauge, 4 feet 8½ inches, the increase would be 9½ inches.

If we assume the excavations on a mile of road to average 15 feet in depth, which for your road will be a liberal average, and take five per cent of this as rock, we shall have 1,218 cubic yards of earth as, say 18 cents, plus 61 cubic yards of rock at 60 cents, equal to.....\$255 30
Add for masonry, &c..... 200 00

\$455 30

Say \$460 per mile for graduation and masonry.

For 100 miles this would give \$46,000, and for 300 miles of \$138,000, say \$150,000 as the increase of cost on your road due to a width of gauge of 5 feet 6 inches, as compared with the narrow gauge.

The amount of land occupied would not be increased, and we have not found in practice that the cost of the superstructure is increased, although the cross ties are necessarily longer for the wide gauge than for the narrow one.

The weight of the axles of the cars is increased—for a gauge of 3½ feet the additional weight per axle would be 19 lbs; per car it would be 76 lbs, which at 5 cents per lb would amount to \$3 80 per car. The addition would be a little greater in the axle of locomotives.

The friction in passing round curves in the slip of the outer wheel will be a little greater as the gauge increased. If we take 1,000 feet of a three degree curve, (1910 feet radius,) the outer wheels of the cars would have to travel 2 4-10 inches further on a 5½ foot gauge than on the narrow gauge. On a 5 degree curve (1,146 feet radius) for the same distance, the outer wheels would have to travel 4 1-10 inches further on a 5½ gauge than on the narrow gauge.

It is objected to any change of gauge—that it interferes with a connection with other roads, and with the interchange of cars on other roads, and the passage of new cars and locomotives from one section of the country to another. The first part of the objection is not applicable to your road. The Mississippi river cuts this road off from all direct connection with the Illinois roads,—and the lines or branches to be built hereafter in connection with your roads will in all probability, follow the gauge of the trunk line. The transfer of cars and engines, built in another State need hardly be considered, inasmuch as all these will eventually be built in St. Louis. Here, the Mississippi bridged, it would doubtless be convenient to be able to transfer cars from one road to another.

The variations from the narrow gauge throughout the United States, are to the best of my knowledge as follows:

The Sandusky and Cincinnati railroad, the Xenia railroad, the Columbus and Cleveland railroad, and generally the Ohio railroads have a width of 4 feet 10 inches.

The Sandusky, Mansfield, and Newark railroad 5 feet 4 inches.

The Georgia railroads, 5 feet.

The South Carolina railroads, 5 feet.

The Mobile and Ohio railroad, 5 feet.

The New York and Erie railroad and its branches, 6 feet.

The St. Lawrence and Atlantic railroad in Maine and Canada, 5 feet 6 inches.

Mr. C. W. Whistler, the late engineer of the Boston and Albany railroad, after his transference to Russia as engineer of the Moscow and St. Petersburg railroad, recommended for that road a width of 5 feet, which was adopted. I mention his name in connection with this question, because as an engineer he was more highly esteemed than any other man in this country.

In fixing upon a gauge for your road you are not tramelled by considerations of convenience, affecting your connections with other roads. You are so situated as to be able to choose the gauge best adapted without much increase of expense to the requirements of a railroad so far as we understand them now. Unfortunately, our experience of the different made guages which have been tried is not so precise as to indicate which is the best, nor can we foresee what form any future improvements in locomotive power will take.

We have the general testimony of engineers and engine builders in favor of a greater width of gauge than the narrow gauge for the convenient arrangement of the locomotive machine; and we know that the passenger business is much more comfortably accommodated by an additional width of gauge.—But these two general truths cannot be put into the shape of a problem capable of defining, after allowing all objections full weight, the exact width to be applied.

My own opinion is in favor of a gauge 5 feet 6 inches.

The New York and Erie gauge of which I have had some experience, is 6 feet.

With a gauge of 5 feet 6 inches we can obtain a sufficiently commodious car for passengers, and we can secure a very commodious and stable engine.

The engine builders with whom I have talked on the subject are satisfied with this gauge. The testimony of English engineers and machine builders taken before the English gauge commission in 1846, leans to a gauge of 5 feet 3 inches, and the gauge recommended for all railroads in Ireland, and I believe adopted by the British government, was 5 feet 3 inches. In England, however, there was and is now a strong party feeling against any increase of gauge, formed on the great inconvenience attending any break of gauge there, where the majority of the railroads in existence have the narrow gauge. I should therefore consider the opinion expressed there that 5 feet 3 inches, was a proper gauge for a new country, as equivalent to an admission of the value of a still greater width. It is proper to bear in mind that the arguments in favor of an increased width of gauge on English roads do not apply to with the same force at present to American railroads, inasmuch as they are formed mainly on the requirements of engines for very high velocities, such as do not prevail at present with us. A rate of 50 miles an hour is frequent in England, while a rate of 30 miles an hour is the maximum here.—But our present position in that respect should be viewed as a temporary one.

Although my own opinion is in favor of a gauge of 5 feet 6 inches, the road can be worked as well as other roads are worked with a gauge of 5 feet or 4 feet 8½ inches as the Board may deem most advisable under all the circumstances.

Respectfully submitted by

JAMES P. KIRKWOOD.

NOTE 1ST. Memoranda in regard to the driving wheels of Locomotives:—

Diameters of driving wheels.....	3ft.	4ft.	5ft.	6ft.	7ft.
Circumference of do.	9-5	12-7	15-8½	18-9	22
Revolutions per mile	560	420	336	280	240
Revolutions per minute, or double strokes of piston, at 12 miles an hour..	116	87	70	58	49
Do at 15 do ..	140	105	84	70	60
Do at 20 do ..	186	140	112	93	80
Do at 25 do ..	232	175	140	116	100
Do at 30 do ..	280	210	168	140	120
Do at 35 do ..	326	245	196	163	140
Do at 40 do ..	374	280	224	187	160

NOTE 2ND. Memorandum of evidence on the subject of gauge, before the English Gauge Commission, 1845:—

J. Locke, Civil Engineer—Would have "wider than 4 feet 8½ inches—less than 7 feet.

G. W. Viquotes, Civil Engineer—"Prefers 6 feet gauge."

Col. George Landman, Civil Engineer—"Prefers increase on narrow gauge, decidedly."

Edward Bury, Manufacturer of Locomotives—"Prefers an extension of 6 or 8 inches for the machinery." (5 feet 2 inches, or 5 feet 4 inches.)

Benjamin Cubitt, Locomotive Engineer—"considers 5 feet 3 inches, ample, and wanted for more effective locomotives."

W. Cubitt, Civil Engineer—"A gauge of 6 feet the best that can be adopted."

Capt. J. M. Lears, Manager of Manchester and Leeds Railway—"A gauge of 5 feet, or 5 feet 6 inches would be an excellent gauge."

John Gray, Locomotive Superintendent—"Prefers a wider gauge than that of 4 feet 8½ inches—would recommend 5 or 6 feet in a new country."

Daniel Gooch, Superintendent Locomotives Great Western Railway—"Prefers 7 feet gauge."

S. Clarke, Manager of Brighton railroad—"Prefers 7 feet to 6 feet 6 inches."

J. R. Brunell, Civil Engineer—"7 foot gauge."

George Bodmer, Manufacturer of Locomotive Engines—"Prefers as an Engine maker, an addition of 6 or 8 inches to the narrow gauge."

M. Fernihough, Locomotive Superintendent Eastern Counties railway—"Would recommend 5 feet."

Mark Huish, Manager of Grand Junction railroad—"Prefers narrow gauge. In a new country would recommend 5½ feet.

R. Roberts, Locomotive manufacturer—"Considers 5 feet to 5 feet 4 inches sufficient for the machinery."

Nicholas Wood, Civil Engineer—"Would have been advisable in the early stages of the railways, to have increased the narrow gauge a few inches.

Major General Pasley of Royal Engineers—"the most eminent engine makers and engineers, in reply to circular letters from the Board of Trade, stated that they considered 5 feet to be the narrowest and 5 feet 6 inches the widest gauge required."

George and Robert Stephenson, Civil Engineers &c.—"Narrow gauge sufficient. For Ireland considers the gauge of 5 feet 3 inches recommended the best."

New York.

Erie and North East Railroad.—The question as to the width of the gauge on this road, has been settled by the adoption of the sixth foot track, the same width as the New York and Erie road. The rails are now being rapidly put down, the ceremony of driving the first spike having been performed on the 30th ult.

Illinois.

Alton and Sangamon Railroad.—This is one of the most promising of our railroad projects. When completed, it will connect the capital of the state with the Mississippi river, at its nearest practicable point, by a line of about 70 miles. The road is to be an exceedingly important one, both from its local business, and from its connection with other roads. As a local road, it must always constitute the outlet for the Central portions of Illinois, to the Mississippi river. The great fertility of this portion of the state is well known; and though Illinois, as a whole, is very sparsely populated, the portions traversed by the above line will compare favorably with the best settled parts of Indiana and Ohio, and are not excelled, if equalled by either, in extent of natural resources. It is to accommodate this portion of Illinois that the above road is to be constructed, and upon it will be thrown the immense products of that rich and populous portion of the state.

In looking at the prospective business of Western roads, we believe a much more correct estimate can be found of its extent, from a general view of the productiveness and course of trade in that section, than from the most elaborate compilation of statistics drawn from existing data. The amount of production, and extent of movement of property, is now subordinate to the means of transportation. Some of the most fertile populations of Illinois are valueless, simply for the want of a suitable outlet to a market. Many sections, that are destined to be the most flourishing, are still covered with forests. In many portions of the state the surplus of grains raised will not bear the cost of carriage to navigable waters. The rivers of Illinois, the present route of commerce, though invaluable in the absence of railroads, are for a considerable portion of each year not available for transportation. From the commerce that has already been developed, we can form but a faint idea of what is to come, when the suitable avenues and instruments shall have been provided. The great amount sent to market under all the difficulties that now stand in the way, will bear no relation whatever to the vast volume when all these shall be removed.

But waiving generalities, and adopting the ordinary mode of reasoning pursued in similar cases, and taking the *post* as the exact measure of the future, we believe that the above company makes out a case as strong as that of any other road whose claims have been presented to the public. That it may be seen what these claims are, tested by the above standard, we have prepared some statistics to which we desire to call the attention of our readers.

1st.—By the census of 1850 the amount of corn, wheat, oats, barley, wool, hay and potatoes, produced within 15 miles of the line of the railroad, exceeded 300,000 tons. Estimating ¼ to be carried to market, (leaving ¾ to be consumed or changed in character at home), and taking 38 miles as the average distance carried, and 4 cents per ton per mile as freight, and we have 75,000 tons; which at \$1 52 per ton, would yield a revenue of \$114,500.00.

2d.—There have been for the past few years, over 30,000 hogs killed and packed at Alton, and over 100,000 hogs killed and packed at St. Louis, annually; a very large portion of these were raised in the counties along, and adjoining the road, and were driven to Alton and sold, or shipped thence to St. Louis. It will be safe to say at least ¼ of the whole number would be conveyed over the road at

an average of 25 cents per head, which would give \$10,833.

3d.—There is an average of over 20,000 beef cattle per year driven down to St. Louis and Alton along, and within 15 miles of the line of the road. At least $\frac{1}{3}$ of these would be forwarded by railroad, at an average cost of \$1.50, which would give a revenue of \$10,000.

4th.—We estimate the returning freight of salt, iron, machinery, merchandize and groceries, at $\frac{1}{3}$ the down freights specified in the first item. This will equal 25,000 tons; which at 5 cents per ton per mile, over one-half the road (38 miles) will give \$1.90 per ton, equal to \$47,500.

5th.—It is thus estimated by those connected with the coal and lumber business at Alton, that there will be sent up the line at least 30,000 tons, and when it is understood that this is the only road by which the supply can be had, that there are inexhaustible beds of superior coal within half a mile of the road, and within eight miles of Alton, and that there is no pine lumber nor good coal along the line in the interior, it is undoubtedly safe to take one-half this amount as a correct estimate, which at 4 cents per mile per ton, (averaging 38 miles) would give a revenue of \$22,800.

6th.—Taking the hotel registers of St. Louis, Alton and Springfield as a basis, it is proved that there are over thirty through passengers per day, between Springfield and the above cities; the completion of the road will certainly double this number. But taking the first estimate, 30 per day, at 3 cents per mile, will give an income of \$53,466.

7th.—The way travel we estimate at the same amount, \$53,440.

8th.—Mail, \$100 per mile, \$7,600.

RECAPITULATION.

Income from transportation of produce...	\$114,500
" " " " hogs.....	10,833
" " " " cattle.....	10,000
" " " " returning freight..	47,500
" " " " coal and lumber...	22,800
Through passengers.....	53,640
Way do.....	53,640
Mail.....	7,600

Making the gross receipts.....\$320,513
Estimated cost of operating the road, one-half proceeds..... 160,386

160,386

Over 16 per cent. on cost of road.

So much for an estimate of income from an actually existing business.

We find our own views of the extent and nature of the business on Western roads, and the estimates which we have given above, strikingly confirmed in a recent pamphlet, put forth by D. A. Neal, Esq., one of the corporators of the Illinois Central railroad, upon the prospective business and income from that great work. As Mr. Neal is admitted to be the very highest authority in reference to all matters touching said roads, we propose to compare, as far as may be done, his estimates, with those which we have prepared in reference to the Alton and Sangamon railroad, as far as a parallel between the two holds good.

The first item in Mr. Neal's estimate of the business of the Central railroad, embraces the articles of wood and coal. As our estimates fall below his, we keep our figures of revenue from these sources, viz., \$22,800.

2nd. The second item in his estimate is "the produce of the soil." Upon this he says:

"The second source indicated, from which the roads to be sustained is 'the produce of the soil.'

The transportation of Indian corn and other grain will be the important business of the road. Their production will in time be limited by the capacity of the road to carry it off. In an estimate of this sort then, it may be safe to neglect all other kinds of produce, or rather consider them as merged into the one article of maize or Indian corn. We have already restricted ourselves to a population in the district of country lying within fifteen miles of the railroad to the density of the whole State by the census of 1850, or fifteen to the square mile. There will be, as before stated, 20,000 of such miles, and the number will of course be 300,000. A large portion of these will be male adults; but taking the usual calculation of five to a family, we have 60,000 families. Deducting again one sixth for other employments, we have then 50,000 families presumed to be in the cultivation of the soil. Now it cannot be doubted, I think, that ten families can easily till and take care of 1000 acres of Indian corn in Illinois by an interchange of labor. It is as certain that the land will give 50, 60 or 70 bushels to the acre. This gives an average of 100 acres of cultivated ground, and 6,000 bushels of corn to each family. But to be sure not to overtask the powers of the people, or of the soil, we reduce both one-half, 50 acres and 30 bushels per acre, giving to each family 1,500 bushels. Of this suppose one-third to be used in the family and on the farm and wasted. There remains 1,000 bushels. As a portion of this may be represented by less bulky and more valuable articles, we again reduce it one-third, to get at the weight that will require transportation to a market. This leaves us 666 $\frac{2}{3}$ bushels of corn, or an equivalent in other things, and which multiplied by the number of families gives equal to 33,333,000 bushels of Indian corn. The usual mode is to estimate 33 bushels to the ton. At 33 $\frac{1}{3}$ it gives 1,000,000 tons. The distance which it would have to be transported to market could not be less than 100 miles, and the price would be low at five cents per ton per mile. This would give \$4,000,000."

Making the application with the substitution of 22 inhabitants to the square mile, instead of 15, (which under the census of 1850 we find to the square mile along the line of the Alton and Springfield railroad) and we have the following result.—Length of road 76 miles. Number of square miles within 15 miles of the road, 2280; population 50,160,—farmers engaged in cultivation of the soil, 8,360; corn produced, 12,540,000 bushels; estimated amount of corn, or its equivalent to pass on the road, 5,573,333 bushels;—or, 666 $\frac{2}{3}$ to the family, and amounting to 167,535 tons, which at four cents per ton per mile, averaging the transportation at one half the length of the road, 38 miles, at \$1 52 per ton, will yield a revenue of \$254,653 20, more than double our estimate.

3d. The third item is the return of freight exclusive of coal and lumber, in relation to which Mr. Neal remarks:

"The returns that will be made to the producer of this large amount of property must bear some proportion to it in value and in bulk. If the corn nets but fifteen cents per bushel, it will give to each family \$100, and to the 30,000 families \$5,000,000. To keep within bounds we will suppose that exclusive of the lumber by the coal and other trains, only one-eighth of the outward tonnage is returned in supplies. This would give the road at the enhanced rate which such goods would bear, (say five cents per ton per mile) or \$5 per ton, \$625,000. Applying a similar estimate to the Alton and San-

gamon railroad, and we should have 20,941 tons, at five cents per mile per ton, averaging to be carried 38 miles, which at \$1 90 per ton, would give a revenue of \$39,787 90."

4th. The fourth item is local travel, concerning which the following language is used:

"The local travel of the same population will be an item of some importance. They must be considerably scattered, and if they associate at all, they will use the road. Each head of a family averages five journeys of 60 miles each, or 300 miles per annum for the whole household. It will cause the road to carry one passenger 18,000,000 miles, which at three cents per mile is \$540,000. This would amount to nine dollars for each family per annum. If we reduce it one-half, there can be little doubt of the other half being made up and more than made up by the other local passenger and freight business, such as those living without the line of twelve miles, of citizens of other States visiting the stations, and the thousand occasions for trips from the termini to the interior." It seems safe then to let this item stand; applying this estimate to the 8,360 families on the line of Sangamon and Morgan railroad, and we have a revenue of \$75,240 from this source.

5th. The fifth item has reference to the through travel which must depend upon so many conditions differing from those which belong to the Central road, that we have thought it best to retain our own estimates of 30 through passengers each way per day, which at three cents per mile will give \$53,640.

Mail 76 miles \$7,600, and we have the following recapitulation:

Freight of coal and lumber.....	22,800 00
Freight of produce of the soil.....	254,653 20
Freight returning....	39,787 90
Local travel..	75,240 00
Through do..	53,640 00
Mail.....	7,600 00
	\$453,721 10
Less expenses 50 per cent.....	226,860 55
	\$226,860 55

—over 22 per cent on the cost of the road.

Or if we take the above..... 453,721 10
And deduct all the items not strictly calculated according to Mr. Neal's basis, to wit, items 1 and 5..... 76,440 00

We have still left..... 377,281 10
Less expenses 50 per cent..... 188,640 55

Leaving over 18 per cent profit..... 188,640 55

We have been particular to give Mr. Neal's estimates, for the reason that he is connected with the greatest railroad project now occupying the attention of our people, and exerts a strong influence in the direction of its affairs. His estimates are undoubtedly prepared with the greatest caution, and upon the most careful investigation, and deserve additional consideration from his justly celebrated reputation, of being one of our ablest and most successful railroad men. He gives them as his own conviction, of what will be the results of the Central railroad, upon a given state of facts. If they will prove true of the Central, they will equally so, of most of our western roads. They are certainly applicable in their fullest extent to the Alton and Sangamon railroad, as the country traversed by this is richer, more densely populated, produces more to the acre, and is probably more fertile than the country traversed by the Central road.

We have thus far spoken only of the local business of the Alton and Sangamon railroad. We may here add one or two general remarks in reference to the comparative amount of freights upon eastern and western roads:—1st. That all articles of western export are of a bulky kind, and pay a large profit in proportion to their value; and, 2nd, that agriculture being the leading pursuit in that quarter, all surplus raised is exported to distant markets, and must pass over railroads when constructed; that for the want of manufacturing establishments, nearly every article of consumption that the farm does not produce, is imported from abroad, or from the other States. This state of things necessarily causes a much larger amount of transportation, than in the older States, where the greater variety of pursuits enables every person to supply most of his wants from the industry of his own neighborhood. The necessary interchange here is effected without going beyond the circuit of a few miles.

What will be the through travel and business of this road? We may set it down as a fixed fact that the Central road will be completed at an early day. Bloomington, a town about sixty miles northwest from Springfield, is to be a point in this road. From the latter place, active measures are in progress for the construction of a railroad to the former. This road will undoubtedly be in readiness as soon as the Central road is opened to the lake. A line drawn from Chicago to St. Louis would very nearly pass through the three towns of Alton, Springfield and Bloomington. A road through these intermediate places will constitute the shortest practicable line between the two great cities of Illinois and Missouri. Travellers from the north wishing to reach St. Louis on the Mississippi, would leave the Central road at Bloomington.—The Alton and Sangamon railroad must, therefore, for aught we can see, forever constitute the lower and most profitable part of the main trunk line, between Lake Michigan and Springfield, Alton and St. Louis. The latter, we believe, is the great city of the west. In a commercial point of view, the south shore of Lake Michigan is one of the most important points in the United States. It is the ultimate of Lake navigation, and around it sweep all our northern lines of railroad, running east and west. The through travel must equal, if it does not greatly exceed the local. We think that no one who will examine a map of Illinois, with the line of railroad in progress, can fail to come to similar conclusions.

The same general conclusions apply with equal force to the transportation of freight. In a good stage of water, the majority of the heavy freight will follow the canal and the Illinois river. But even at such periods the more valuable and perishable articles will go by railroad. The same causes which constitute the above the route of travel, will make it the route for freight. When the river is not navigable, from low water or ice, the amount of freight thrown upon this road must be very large. A great part of the West will receive their foreign supplies through Chicago from the low cost of carriage between that city and New York. These goods will be distributed over the country chiefly through railroad, and from the certainty and speed of transportation, St. Louis and Alton will at all times receive no small portion of their merchandise over the above road. We think that no person, carefully examining this subject can come to any other conclusion.

We have thus at some length pointed out the

claims of the above road to the public consideration. As far as our remarks have a general character, they are applicable to all western projects.—Nearly all western roads promise to pay very liberally on their cost.

But there, as at the East, there is of course great difference as to the capacity of different lines for business. Those that are identical with the great routes of travel must pay much better than those which are thrown entirely upon local traffic for support.

We are glad to learn that the above road is making good progress towards Springfield. Already the rails have been laid upon eleven miles of the track. Twenty-eight miles additional are already graded and ready to receive the superstructure, and the iron and ties for the distance to Carlinville, are already delivered at Alton. The whole road to Springfield is to be completed during the ensuing year.

Copper Harbor Mines.

About sixty miles to the northwest of the Iron Mountains of Carp river, lies the great range of copper mines for which the shore of Lake Superior is so distinguished. About sixteen miles westerly from Keweenaw Point, lies Copper Harbor, a beautiful bay cut out of the dark, rock-bound coast, and forming one of the most secure and commodious harbors on the Lake. This was the point where the first commencement of copper mining was made in 1843 or '44; things went on well for two or three years, when from some unknown cause, the mines, one after another, dropped off work; stores and public houses had to close for want of customers; and finally, from the fall of 1847 to the spring of 1850, Copper Harbor was literally a "deserted village."

Last season, however, explorations were again commenced, new mines were discovered and opened in the neighborhood, a few interested persons returned to their old homes, and the place began to revive as from a deep slumber. At the present time, the place has resumed quite an active, business like appearance.

The present miners have entered on their labors under far more favorable circumstances than those under which these mines were originally commenced, having had the advantage of years of study and experience, and aided by the discoveries in practical mining in various parts of the world. We will give a slight sketch of the various works now in progress in the vicinity of Copper Harbor.

The New York and Michigan mining company have recently commenced work on the location, six miles from the Harbor, formerly worked by the same company. The superintendence of the mining business has been given to Mr. Sampson Vivian, a gentleman of experience from Cornwall. At present ten miners and surface men are employed. The old work consists of a shaft sunk about sixty feet; this has been drained and ventilated, and a few feet further sunk. The vein is described as well defined, and about two feet thick in the drift at the bottom of the shaft, composed of phrenite and calcareous spar, and dipping to the west one foot in six.

A short distance to the west of the last named company, a new company called the Star Mining company have just commenced work under the charge of Mr. John Stearns. They are making preparations, in hopes to be able to commence mining early in the fall.

Two miles further westward, being three and a

half from Copper Harbor, are the works of the Cape Mining Association. Operations were commenced here about a year ago, under the superintendence of D. D. Brockway, Esq. Mr. B. is sinking two shafts, one hundred and sixty-one feet apart, on a remarkably wide and beautiful vein, and has run an adit level one hundred and ninety feet in length.

Half a mile further to the westward is the Avery mines, the working of which will probably be commenced early in the fall. An acre or two of ground has been cleared and planted with potatoes.

A mile further west is the Iron City Mine, under the superintendence of Simon Mendlebaum, Esq. This mine is about five miles from Copper Harbor, to which place there is a passable road. Operations were commenced here about a year ago, during which time rapid progress has been made.—Two shafts have been sunk, one to the depth of one hundred and thirty-three feet, the other eighty-two feet. A ten fathom level has been driven two hundred and seventy-five feet between the shafts, extending north one hundred and ninety-five feet, and south sixty-three feet. A second level has been commenced and extended some fifteen or twenty feet. The product of ore is very gratifying. At present sixteen miners and six surface men are employed; they have five comfortable houses, and six or eight acres of good land cleared, and will raise a large quantity of potatoes this season.

A short distance from the last mentioned mine, a new company called the Bluff, have just commenced operations; T. P. Harrington is agent of the company, and there appears to be a flattering prospect of a good vein.

Two and a half miles westward of the Bluff, operations have been recently commenced at what is called the Medora Mine. Robert Reed, Esq., has the superintendence of the works, and is sinking two shafts on a well defined vein, one hundred and ninety feet apart. The first is down over eighty feet, and the other forty-five feet. Eight miners and nine surface men are here employed; two acres of land are cleared and planted to potatoes.

The above we believe, are all the principal works in progress in Copper Harbor district; and from the enterprise and energy of the gentlemen engaged, we may confidently expect some rich developments in this interesting region very soon.

Virginia.

The Northwestern Virginia railroad company was organized at Parkersburg on the 2d instant, by the election of James Cook, President; and George Neal, Jr., Joseph Spencer, J. M. Bennett, Wm. Logan and Jefferson Gibbons, Directors. Mr. Latrobe, it is understood, will be appointed Chief Engineer of the company and undertake the location immediately. The Parkersburg, Va., Gazette of Saturday last, says:—

Great unanimity characterized these elections, the above named gentlemen receiving the votes of full four-fifths of the stock. We congratulate the company and the community upon this choice. Mr. Cook possesses sterling business qualifications and will prove a prompt and energetic, yet prudent President; while those associated with him as directors, are thorough-going and practical men, whose advice and counsel would be safe guides to any officer.

We learn that the president and directors have appointed Benj. H. Latrobe, Esq., of Baltimore, Chief Engineer of the company, and P. G. Van Winkle, Esq., Secretary to the board, requesting the first to commence his surveys forthwith. Better appointments could not have been made, and, in

this first step, the board gives earnest of its most able and direct management. Mr. Van Winkle we are told, has accepted his appointment—at least for the present.

Indiana.

Bellefontaine and Indiana Railroad.—From a recent exhibit of the affairs of this company, we learn that the whole line of 118 1-5 miles is now in the hands of contractors. The grading and masonry on the first 20 miles, from Galion to Marion, is now about completed; the grading and masonry on the 33 miles between Bellefontaine and Laramie Creek, at the crossing of the Miami Extension canal, will be finished by the first day of October next. More than half the work on the line is now done. The intention is to prepare the 20 miles from Galion to Marion for use the ensuing fall.—The 33 miles from Bellefontaine to Sidney about the same time, or early in the spring; and the remainder of the line by the fall of 1852.

The road is to be laid with T rail, weighing 60 pounds to the yard, laid on cross ties set two feet from centre to centre. Mr. Roberts, the chief engineer, estimates the cost of the road, including engineering and contingencies, as follows:

Graduation and masonry, 118 1-5 miles, at \$4,000	\$472,800
Graduation and masonry 5 miles double track, at \$2,000	10,000
Railway superstructure 118 1-5 miles, at \$7,900	933,780
Railway superstructure 5 miles sidings, at \$7,900	39,500
Right of way	12,600
	\$1,468,680

Equal to \$11,721 10 per mile.

Add estimated cost of water stations, shelter for passengers, etc.	30,000
Add estimated cost of locomotives and cars for the probable business of the road.	150,000
	\$1,648,680

Equal to about \$13,400 per mile.

The resources of the company are as follows:	
Subscriptions of capital stock in Ohio.	\$850,000
To be raised by sale of bonds, secured by mortgage of the road, fixtures, depot grounds and equipments.	800,000
	\$1,650,000

These mortgage bonds are now for sale in this city by Messrs. Winslow, Lanier & Co., No. 52 Wall street.

The following is the minimum business of the road, as estimated by W. Milnor Roberts, chief engineer.

75 through passengers per day each way at \$3. \$450	
100 way passengers per day each way, calculating half the distance, at \$1 50	300
100 tons through freight each way per day, at \$3 60	720
100 tons way freight each way half the distance, at \$1 80	360
Transportation of mails and sundries.	50

Total per day	1,880
Deduct 40 per cent for repairs and expenses.	752

Leaves net daily profits

The last sum multiplied by 313, the number of working days in a year, makes \$353,064—being about 20 per cent on \$1,648,680, the estimated cost of the road with equipments ample for such a business.

Of the situation of this road, on a direct line between the city of St. Louis and Dunkirk, the western terminus of the Erie road, and being one link of the great chain of railway communication between the valley of the Mississippi and the Atlantic coast, we have spoken heretofore. We have

often spoken of the importance of this road, both in reference to its local trade, and in its connection with other lines. It will be constructed at the minimum cost of western roads, and offers a most profitable investment for capital, not only in its bonds, but its stock.

American Railroad Journal.

Saturday, August 23, 1851.

The Gauge.

We give in another column the report of Jas. P. Kirkwood, Esq., Chief Engineer of the Pacific railroad, upon the gauge of that road. As this is the first project of the kind of any magnitude, west of the Mississippi, and as that river is a bar to a continuity of track with the eastern roads, the question of gauge was entirely an open one, and could there be treated upon its abstract merits.—Mr. Kirkwood favors the 5½ gauge. We are happy to place before his professional brethren the reasons that led him to this conclusion, as we feel sure they merit careful attention.

Philadelphia and Baltimore.

We give this week the Philadelphia side of the argument in reference to western connections, in reply to "Baltimore," which appeared in our paper of the 2d inst.

Corporate Subscriptions to Railroads.

The city of Alton, Illinois, has voted to subscribe \$100,000 to the capital stock of the Alton and Terre Haute railroad.

The town of Somerset, Perry county, Ohio, has subscribed \$23,000 to the Cincinnati and Zanesville railroad, and the township in which it is situated voted \$20,000 more.

The counties of Buchanan and Marion, Missouri, have each subscribed \$100,000 to the Hannibal and St. Joseph's railroad.

The city of Middletown, Conn., has subscribed \$200,000 to the Air-line railroad.

The county of Summit, Ohio, has subscribed \$75,000 toward aiding to complete the Akron branch railroad to Millersburgh, and from thence south to intersect the Indiana and Ohio railroad at Coshocton.

Indiana.

Lawrenceburgh and Upper Mississippi Railroad.—A meeting of the citizens of Indianapolis friendly to the construction of this road, was held on the 9th inst. W. Sullivan presided, and the meeting was addressed by Hon. G. H. Dunn, president of the road. He stated that the road from Indianapolis by way of Shelbyville, Greensburgh and Lawrenceburgh, was the nearest, the cheapest and the best route direct to Cincinnati, and he thought the road was in a fair way of completion to Shelbyville by the fall of 1852.

The iron for the first division of the road was expected to arrive in a few weeks, and would be immediately laid down. 1,700 tons heavy T patent, weighing 60 pounds to the yard, had been purchased, and was on its way. The work was all let to Shelbyville, 63 miles, and was to be completed so as to receive the superstructure next season.

The distance from Lawrenceburgh to Indianapolis is 90 miles, and the entire cost, including debts, engines and rolling stock sufficient to work it, \$1,050,000. The amount of stock already taken is over \$400,000, and \$100,000 additional stock would enable the company to complete the grade to Indianapolis. Mr. D. believed that Cincinnati would

help if it became necessary. Cincinnati, he said, was not ignorant of the efforts making by Louisville to draw to her the trade of Indiana by means of the Jeffersonville and New Albany railroad, and she would be ready to meet the work at Lawrenceburgh by the time it reached there.

The Indiana State Journal expresses the opinion that from the spirit manifested at the meeting, the nature of the resolutions adopted, and the ability of the men who have so earnestly taken hold of the matter, the pecuniary aid desired will be given by Indianapolis in behalf of this enterprise.

New York.

A railway has been projected from Watertown to Potsdam in St. Lawrence county. The distance is about 63 miles, through a fine country.

There is some talk about a railroad to connect Syracuse with the Rome and Watertown railroad in Pulaski. The distance is about 30 miles, and the route is said to be favorable.

It is asserted with much confidence that the Rome and Watertown railroad will be extended to Cape Vincent. At that point it will form a connection by a ferry across the St. Lawrence, with the great Nova Scotia and Canada railroad, extending from Halifax to Detroit. This continuation renders it a matter of some importance to Syracuse to secure a direct railway communication with Watertown and the St. Lawrence, and we presume their enterprising citizens will not suffer this opportunity to go unimproved.

New York.

Buffalo and Conhocton Railroad.—This enterprise is making rapid progress. The first 45 miles is ready for the superstructure, and will probably be in running order this fall. The directors have purchased four first class locomotives, four first class passenger cars and one hundred freight cars. They are now receiving proposals for the work and materials upon fifty-five miles more of the road, extending from the north line of Steuben county to the village of Batavia. Proposals will be received until the 26th of this month at the office of the engineer, at Avon.

This road starts at Corning, and passes through Bath, Springwater, Conesus, Livonia, Avon, Caledonia, and Le Roy, and connects with the Central line at Batavia.

The citizens of Rochester, foreseeing how much of their trade is likely to be diverted into this new channel, are taking strenuous measures of self-preservation by urging forward the Genesee Valley railroad. Thus one enterprise stimulates another, and the competition excited communicates a healthful activity to all branches of industry and commerce.

Stock and Money Market.

The money market remains without much alteration. Money continues scarce, and commands high rates, but indications favor the idea that we have seen the worst, and that there will be a gradual amelioration, till the market is easy again.—Conjecture, however, is worth nothing; the fact only concerns our readers.

Bonds of new works sell with difficulty. Companies will do well to keep out of the market. Offering their securities at the present time only increases the evil. Quotations of bonds of roads in progress are merely nominal.

The new canal certificates have been taken at a premium, which ensures the immediate commencement of the work of enlargement.

Advices from Panama are favorable. Our great hopes at the present time are in remittances of gold from California. It is stated that there are \$2,250,000 at Panama, and it is also stated that the receipts at the United States Mint for the present month will exceed \$4,000,000.

The foreign rail market rules low. The present stringency will probably have the effect to check sellers.

The Evening Journal gives the annexed statement of the quantity of flour, wheat, corn and barley, left at tide water during the 2d week in August in the years 1850 and 1851, as follows:

	Flour. bbls.	Wheat. bush.	Corn. bush.	Barley. bush.
1850....	55,461	42,412	175,881	5,376
1851....	76,357	87,650	321,848	.....
Increase.	20,896	45,238	145,967	5,376

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 14th August, inclusive, during the years 1850 and 1851, is as follows:

	Flour. bbls.	Wheat. bush.	Corn. bush.	Barley. bush.
1850....	980,386	440,901	2,203,726	136,953
1851....	1,648,183	1,105,765	4,815,544	114,385
Inc....	667,797	664,864	2,611,818	dec.22,568

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 14th August, inclusive, during the years 1849 and 1851, is as follows:

	Flour. bbls.	Wheat. bush.	Corn. bush.	Barley. bush.
1849....	1,217,871	761,008	3,436,948	100,430
1851....	1,648,183	1,105,765	4,815,544	114,385
Increase.	430,312	344,757	1,378,596	13,955

By reducing the wheat to flour, the quantity of the latter left at tide water this year, compared with the corresponding period of last year, shows an increase of 800,769 bbls. of flour.

The amount received for tolls on all the New York state canals during the second week in August is.....\$93,804 18
Same period in 1850.....83,485 20

Increase in 1851.....\$10 318 98

The aggregate amount received for tolls from the commencement of navigation to the 14th of August, inclusive, is.....\$1,702,222 34
Same period in 1850.....1,408,361 31

Increase in 1851.....\$293,861 03

The following is a statement of the amount of duties collected at the principal ports for the year ending June 30, 1851:—

New York	\$31,756,199	St. Louis.....	\$213,832
Boston	6,577,540	Cincinnati.....	105,191
Philadelphia..	3,667,838	New Haven.....	102,130
Baltimore....	1,047,278	Mobile.....	76,184
New Orleans..	2,296,636	Louisville.....	66,572
Charleston ..	600,712	Oswego.....	91,557
Portland	209,030	Richmond.....	70,235
Savannah....	208,994		

Baltimore and Ohio Railroad.—The following are memoranda of the business of the Baltimore and Ohio railroad for the month of July, 1851:—

	Passengers.	Freight.
Main stem.....	\$29,036 10	\$65,912 07
Washington branch....	20,737 52	3,777 67
	\$49,773 62	\$69,289 74

Making an aggregate of \$94,948 17 on the main stem, and \$24,115 19 on the Washington branch—the total being \$119,063 36.

The above, compared with the corresponding month of last year, shows an increase of \$712 82 on the main stem, and a decrease of \$3,113 90 on the Washington branch.

The receipts of the Vermont and Massachusetts railroad for the month of July, were...\$18,645 30
Same month last year.....16,006 27

The freight connection of the Valley road with the Northern line being incomplete, very little benefit has been derived from that line as yet, which was opened for travel on the last of June.

The receipts on the Norwich and Worcester railroad for July, were.....\$24,908 10
For July, 1850, they were.....23,922 83

Increase.....\$985 27

The earnings of the Michigan Southern railroad for July, were.....\$20,712 40
For July, 1850, they were.....7,667 69
Increase.....\$13,044 71

The total earnings from January 1st, to 31st July of the present year, have been.....\$133,486 86
For the same period last year they were, 43,375 24

Increase.....\$90,111 62

The business of the Galena and Chicago railroad is in a flourishing condition. The receipts for the last three months are as follows:—

	1851.	1850.	Increase.
May	\$14,338 23	\$10,644 06	\$3,724 17
June	16,627 68	9,748 93	6,874 75
July	16,650 67	9,335 25	7,315 42
Total....	\$47,616 58	\$20,798 24	\$17,918 34

Railway Share & Stock List;

CORRECTED WEEKLY FOR THE

AMERICAN RAILROAD JOURNAL.

NEW YORK AUGUST 23, 1851.

GOVERNMENT AND STATE SECURITIES.

U. S. 5's, 1853.....	100½
U. S. 6's, 1856.....	105½
U. S. 6's, 1862.....	110
U. S. 6's, 1862—coupon.....	113a114
U. S. 6's, 1867.....	114½
U. S. 6's, 1868.....	116½
U. S. 6's, 1868—coupon.....	121½
Land Warrants.....	140a145
Arkansas 6's.....	52a53
Alabama 5's.....	91a92
Indiana 5's.....	79a80
Illinois 6's, 1870.....	65a68
Kentucky 6's, 1871.....	105a106
Massachusetts sterling 5's.....	105a106
Massachusetts 5's, 1859.....	100½
Maine 6's, 1855.....	103
Maryland 6's.....	102½
Michigan.....	—
Mississippi.....	—
New York 6's, 1865.....	117a118
Ohio 6's, 1860.....	108
Pennsylvania 5's.....	89

RAILROAD BONDS.

Atlantic and St. Lawrence, 6 percent.....	85
Baltimore and Ohio, 1867.....	94½
Boston and Providence 6's, 1855.....	101
Boston and Worcester 6's, 1855, convertible.....	107½
Bost., Concord and Mont. 6's, 1860, mortgage.....	87½
Cheshire 6's, 1860.....	91½
Connecticut River 6's, convertible.....	98
Erie 7's, 1859.....	101
Erie 7's, 1868.....	107½
Erie income 7's.....	91
Hudson River 7's, 1853.....	101½
Michigan Central, convertible, 8's, 1856.....	104½
New York and New Haven.....	100½
Norwich and Worcester, mortgage, 1860.....	80a85
Old Colony, 1854.....	97½
Ogdensburg 7's, 1859.....	94a95
Portsmouth and Concord.....	80a85
Passumpsic 6's, 1859.....	94½
Rutland 7's, 1863.....	97
Reading mortgage, 1860.....	80
" " 1870.....	75
Sullivan, mortgage 6's, 1855.....	80
Vermont Central 6's, 1852.....	96½
" " 6's, 1856.....	91½
Vermont and Massachusetts 6's, 1855.....	86½

RAILROAD STOCKS.

[CORRECTED FOR WEDNESDAY OF EACH WEEK.]

	Aug. 20.	Aug. 13.
Albany and Schenectady.....	96½	—
Atlantic and St. Lawrence.....	60a65	—
Androscoggin and Kennebec.....	30a35	—
Boston and Maine.....	103	103
Boston and Lowell.....	108½	109
Boston and Worcester.....	100½	101½
Boston and Providence.....	84½	85½
Bost., Concord and Montreal.....	40	—
Baltimore and Ohio.....	71½	—
Baltimore and Susquehanna.....	36	—
Cheshire.....	53	—
Cleveland and Columbus.....	—	—
Columbus and Xenia.....	—	—
Camden and Amboy.....	—	—
Connecticut River.....	60	—
Delaware and Hudson (canal).....	—	—
Eastern.....	95	96
Erie.....	70½	69
Fall River.....	92½	91½
Fitchburgh.....	108½	109½
Georgia.....	—	—
Georgia Central.....	—	—
Harlem.....	68	68½
Hartford and New Haven.....	124	—
Housatonic (preferred).....	52	—
Hudson River.....	70	—
Kennebec and Portland.....	50a55	—
Little Miami.....	—	—
Long Island.....	15	14½
Mad River.....	—	—
Madison and Indianapolis.....	96	—
Michigan Central.....	104	103½
Montgomery and West Point.....	—	—
Michigan Southern.....	—	—
Manchester and Lawrence.....	97	89
Morris (canal).....	14½	15½
New York and New Haven.....	101	—
New Jersey.....	133	—
Northern.....	66	66½
Nashua and Lowell.....	107½	—
New Bedford and Taunton.....	111	—
Norwich and Worcester.....	50	48
Norfolk County.....	22a23	—
Ogdensburg.....	30	31½
Old Colony.....	65	66
Passumpsic.....	80	—
Pennsylvania.....	—	—
Pittsfield and North Adams.....	95	—
Philadelphia, Wilm'gton & Balt.....	28	29
Petersburg.....	—	—
Richmond and Fredericksburg.....	—	—
Richmond and Petersburg.....	—	—
Reading.....	52	51
Rochester and Syracuse.....	105	106
Rutland.....	53	47
Stonington.....	43½	41
South Carolina.....	—	—
Syracuse and Utica.....	130	—
Sullivan.....	25	—
Taunton Branch.....	108	—
Troy and Greenbush.....	90	—
Tonawanda.....	—	—
Utica and Schenectady.....	130	—
Vermont and Canada.....	103	—
Vermont Central.....	30	30
Vermont and Massachusetts.....	25½	25½
Virginia Central.....	—	—
Western.....	102½	103
Wilmington and Raleigh.....	—	—
York and Cumberland (Pa.).....	20	—

Memphis and Charleston Railroad.

Gov. Jones will start on in a few days to purchase the iron for the first fifty miles of the road.

The contracts for the cross-ties as far as La Grange, have been already let out, and the President of the board of directors expects to complete those for the grading in a few days.

With everything in so promising a condition; with a president and board of directors who display so much energy, ability, and unflagging industry; with a wealthy and powerful company of stockholders, ready, willing, and even anxious, to pay up the calls as they fall due, is it too much to expect that the road as far as La Grange will be ready for the transportation of the crop of 1852, and that the whole road will be completed and the cars running through to Charleston in 1854?—*Memphis Eagle.*

Connecticut.

Connecticut and Passumpsic Railroad.—From the sixth annual report of the operations of this company, we gather the following facts:—

The balance of last year's surplus was. \$3,556 31
Receipts of year ending May 31, 1851.

Passengers.....	\$61,101 67
Freight.....	80,374 69
Other sources.....	5,106 75
	<u>149,583 11</u>

	\$153,139 42
Expenses.....	<u>65,458 19</u>

Nett earnings.....	\$87,681 23
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From this deduct 2 divid-	
ends 3 per cent each....	65,541 00
Interest on Bonds.....	<u>13,860 00</u>
	<u>79,401 00</u>

	\$8,280 23
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Appropriated for special damages by	
freshet.....	<u>6,420 99</u>

Balance of Contingent fund.....	\$1,859 24
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The Treasurer's Trial Balance, which is published with the report, shows assets as follows:

Construction or amount expended for	
the road.....	\$1,670,113 29

New cars and engines.....	31,573 20
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Cash on hand.....	20,322 88
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Materials on hand, and balances due	
from Station Agents.....	<u>26,281 72</u>

	<u>\$1,748,191 09</u>
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The Liabilities are—

Capital Stock paid in.....	\$1,094,670 55
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Bonds negotiated at par, (amount re-	
ceived for).....	501,115 00

Contingent fund.....	1,858 24
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Dividend payable July 1.....	32,832 00
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Notes payable.....	<u>117,715 30</u>
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	<u>\$1,748,191 09</u>
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The construction of the road to Wells	
River cost.....	\$1,149,626 77

The construction from Wells River	
to St. Johnsbury.....	518,262 73

New cars and engines.....	<u>31,573 20</u>
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	<u>\$1,699,462 70</u>
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Less 15 shares to be credited when	
sold.....	<u>1,500 00</u>

	<u>\$1,697,962 70</u>
--	-----------------------

The construction funds	
are 10,944 shares fully	
paid.....	\$1,094,400 00

Amount paid on 47	
shares.....	270 55

Amount due on 47	
shares.....	4,429 45

Bonds.....	<u>550,000 00</u>
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	<u>\$1,649,100 00</u>
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Balance to be provided for after col-	
lecting of delinquent Stockholders.	\$48,862 70

The 47 delinquent shares are mostly	
set to single share subscribers, who	
have paid but \$5. The delinquen-	
cy.....	<u>4,439 45</u>

Added, shows a liability or floating	
debt unprovided for of.....	<u>\$53,292 15</u>

	<u>\$53,292 15</u>
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The report states that the road has been thor-

oughly built, and the embankments are believed to

be well protected against the action of the river

freshets. But a further expenditure should be

made of some \$10,000 to \$15,000 for covering the

bridges across the Passumpsic, rubbing around

their abutments, finishing the slopes and ditches in

deep cuts, enlarging the engine house, &c.

The opening of the Vermont Valley railroad

from Bellows Falls to Brattleboro', completes the

last link in the valley of Connecticut river, and

opens a direct railway communication from St.

Johnsbury to Springfield, New Haven and New

York, and joint arrangements have been made for

ticketing through passengers.

The Passumpsic railroad, while it always affords

the best avenue from north-eastern Vermont to

Boston and the towns on the Merrimac, constitutes

the only route which can ever exist connecting

with the lower valley of the Connecticut, and the

city of New York. This last consideration alone

ensures the future prosperity of the road.

The annual meeting of the company, at which this report was presented, was held at St. Johnsbury, Vt., on the 29th ult. A resolution was adopted to extend the road north to Barton or Derby as soon as the amount of stock necessary should be subscribed for at par, payable in cash. This action is in accordance with the fixed policy of the company which has never issued stock or bonds at less than their face, and never paid a dollar of extra interest.

The net earnings of this road for the month of June last, were \$11,722, against \$7,449 of same month last year, and the earnings for July, up to 26th inclusive, were \$14,431, against \$9,639 last year. The earnings for the whole month of July would reach \$16,000. The increase in the expenses bears no sort of comparison with the above.

Indiana.

Indiana Central Railroad.—The location of this

road has been completed, the line to begin at that

point of the state line between Indiana and Ohio,

where the Dayton and Western railroad (of which

it is a continuation) terminates. That road is ex-

pected to be in operation by April next. From that

point the line runs very nearly straight the whole

distance to Indianapolis, passing through Rich-

mond, Centreville, Dublin, Knightstown, Greenfield,

&c., being one of the most densely populated sec-

tions of Indiana. The whole length of the road is

about 72 miles, of which less than four miles are

curves. The highest grade at any one point is 58

feet to the mile. The engineer, H. C. Moore, Esq.,

estimates the whole cost of the road, with the neces-

sary equipments for running the same, "constructed

in the most substantial manner, so as to make

it a first class road in every respect," with a T rail

weighing 60 lbs. to the yard, laid upon white or

burr cross-ties, ballasted with gravel a foot deep

and ten feet wide, at \$1,002,893.90, or at the aver-

age of \$13,993.22 per mile. This includes depots,

shops, water-stations, one fourth cost of Union track

and passenger depot in Indianapolis, and 4½ miles of

side tracks.

The division of the road between Greenfield and

Knightstown, at the latter of which places it inter-

sects the Knightstown and Shelbyville railroad, is

in the hands of contractors, and will be graded this

fall.

The engineer estimates that the probable business

of the road will pay 15 per cent. dividends upon its

cost, as soon as the work shall be in operation.

The officers for the present year are:—John S.

Newman, Esq., President; John M. Commons,

Secretary; Norris Jones, Treasurer; Henry C.

Moore, Engineer; A. C. Blanchard, Jas. R. Men-

denhall, John S. Newman, Norris Jones, David

Commons, Thos. Tyner, William Petty, William

Butler, John T. White, James P. Foley, Nathan

Crawford, Orlando Crane, and Samuel Hannah,

directors.

Pacific Railroad.

We gave not long since an abstract of the late report of the directors of this road. We now give an abstract of some portions of the report of the Chief Engineer, reserving the balance of it for our next paper. From St. Louis to the west line of the state reconnoissances have been made of five routes, three of which make Jefferson city and Georgetown a common point, and two by way of Versailles. The three routes to Jefferson city are distinguished as the Merrimac, the Union ridge, and the Missouri river route. The two routes by way of Versailles adopt the Merrimac and Union routes from St. Louis.

The comparative length and cost of these different routes, are as follows:—

	Length.	Total cost.
Merrimac route via Jefferson &		
Georgetown.....	317.68	\$6,743,181
Union Ridge route, do. do.....	311.62	6,169,515
Missouri River route, do. do.....	240.52	5,980,084
Merrimac route, do. Versailles, 317.86		6,785,007
Union Ridge, do. do.....	312.11	6,626,101

From the surveys it appears that not only is the mechanical advantage entirely in favor of the Missouri river route, when compared with the other routes, but the aggregate of cost is also in favor of that route.

But the choice of a route must in a great measure be influenced by another consideration, viz., the character of the traffic which it can command; and that route which will create the largest percentage of receipts in tonnage and travel, as compared with its cost, and which will develop to the greatest extent new resources, must prove on the whole the most valuable.

Between St. Louis and Jefferson city, two of the three routes surveyed, call for a comparison of this kind, to be properly understood. The Missouri river route passes, except in St. Louis county, through a more thickly settled country than the other, as the accommodation afforded by the river has concentrated the population there, and the bottom lands are very productive. The railroad would add much to the accommodation of this valley; and because it would form a better connection with St. Louis every day of the year, than the river does at any time, an impulse would be given to production which is but imperfectly felt now, and the river valley would undoubtedly fill up rapidly. The effect would also be felt in a less degree on the opposite side of the river from the railroad. The river being in many places a difficult stream to ferry, and during the winter months and the months of low water, the transmission of freight across it being scarcely possible, the railroad would have to depend for one third of the year on the bottom land on its own side of the river, and during the remainder, it must compete with the river transportation. Hereafter, when the country shall be more densely settled with an active and business population, the competition may be a more safe one. The Hudson river railroad competes encouragingly now, when but partly in operation, with the Hudson river, and is doing a large business. The New York and New Haven railroad competes successfully with the east river or Long Island Sound, which stands to it in the same relation as a navigable river. The railroads along the lake shores, now making, will not suffer very materially by the competition of the lakes. The rapidity of the transit on a railroad, and above all, the perfect regularity of its operations, renders its accommodations immeasurably superior to those of steamboats.

The competition of the Missouri river would be much less irksome than that of the Hudson. The navigation of the latter is remarkably safe and easy; that of the Missouri is at all times tedious, and for one third of the year intricate and dangerous.

The Merrimac river route, although longer, more costly, and less valuable, mechanically, than the Missouri river route, offers advantages in other respects which neutralize to a large extent its mechanical disadvantages. This route touches the Missouri river at the mouth of the Osage, and thence follows the Missouri valley to Jefferson city. Between St. Louis and the Osage river, a distance of 140 miles, it is inland, and independent of the competition of the Missouri river. Hence the country tributary to it would be much wider than that which could be made tributary to the Missouri river route, and its freight charges would yield a fairer return, and produce a safer and more regular income. The land, wherever improved, shows a capability of producing good crops, and its convenient position to St. Louis would render it valuable, and would cause it to be rapidly occupied were a railroad present to carry off its surplus produce.

This route would pass through a portion of the Merrimac valley, which abounds in ores of iron, and it would pass sufficiently near to the lead mines on the Bourbeuse ridge, and to many of those in Washington county, to render their working very profitable. The cost of transportation of pig metal to St. Louis, when the roads are in good order, is about \$5 87 per ton; when the roads are in bad order the cost is generally increased to \$8 per ton. The cost of transportation by railroad, at fair rates, would be about \$1 50 per ton.

This great saving in the carriage of materials, and the further advantage of being able to forward them to market, at all times of the season, with equal facility, would form inducements, it is believed, sufficient to lead to the erection of many new furnaces, both of lead and iron, and to bring into use much of the deposits of iron, hitherto unopened, which now form so much dead capital there.

The pig iron, used at the different iron works in the city of St. Louis, is estimated to amount to 15,000 tons during the year. This has heretofore been obtained principally from Ohio furnaces.

All the bar iron sold now in St. Louis is obtained from other States and from abroad. The amount of iron which will find sale by and bye, in St. Louis, for the supply of the surrounding country, will prove of itself a very considerable market.—The distance of St. Louis from the seaboard acts as a tariff of protection in its favor against foreign iron, to the extent of the cost of transportation from the coast. The iron furnaces in Ohio were mainly brought into existence by the facilities of canal transportation, created for their benefit and for the development of the other resources of that State. The same causes, viz: an easily accessible market and a fair profit, in great part due to that accessibility, will produce similar results for similar facilities, in the Merrimac valley. The lead mines, which are now worked in many places but superficially, will, under greater encouragements, be worked more carefully, and produce more abundantly. The establishments which grow up around iron furnaces and manufacturing, employ a great number of persons, and afford a home market for all the farm produce of their neighborhood. They create a great deal of passenger travel for a railroad, and besides the

tonnage which they send off, they receive considerable in merchandise for their own consumption. We can hardly overrate the importance to St. Louis and to the State, of affording the mineral region of the Merrimac such railroad facilities, as will place its extensive deposits of iron ores in a position to be available to capitalists.

The survey made by Major Morrell, in 1840, for a railroad to the Iron Mountain, passed through a country very rich in lead ores, and where numerous furnaces are now at work on a small scale; the expense and difficulty of transportation, here, as in the Merrimac valley, cramping their operations. The length of road to be made from St. Louis to accommodate the above district of country, would be reduced upward of thirty miles by the construction of the Merrimac route. Such a road would connect with the Merrimac line opposite the mouth of Big River, and its entire tonnage would pass over that road for a distance of at least thirty miles.

A railroad from Springfield and the southwestern counties would, if it pursued the most direct course to St. Louis, connect probably with this route on the Merrimac ridge. Such a road would pass near the Merrimac iron works, and would accommodate the metallic deposits of lead, iron and copper on the Bourbeuse ridge and in the upper valley of the Merrimac.

At the Gasconade river, the Merrimac route would intercept a large part of the pine lumber which is now floating down the Gasconade and Missouri rivers to St. Louis. It would take all that was required for the upper country, and it would take much of what was intended for St. Louis, because the rafting of it on the Missouri river is attended with considerable loss. The Missouri river route would also take a portion of it at the mouth of the Gasconade: but a greater portion of the lumber intended for St. Louis, having got so far, would continue down the Missouri, than when intercepted higher up the Gasconade.

It seems plain, says the report, that although the Merrimac river route does not present the shortest and best route for a railroad from St. Louis to Jefferson City, the interests which it assists and develops are so important, and promise such results, as to make it questionable whether, compared with the Missouri river route, it would not afford the safest return as an investment in the event of Jefferson City continuing to be a point on the road.

The lower part of the Versailles route will accommodate and develop the same interests as the Merrimac river route. At the crossing of the Gasconade, it will intercept the lumber business of the yellow pine country to better advantage than either of the Jefferson city routes which cross that river lower down. At this point, or in this neighborhood, it will receive the iron tonnage of the Merrimac iron works. At the crossing of the Osage river, the freight floated down that stream would be received; and also a certain tonnage of coal, from the coal mine now working there. From the crossing of the Osage to the state line, the route passes over a rich and fertile prairie country. The whole of the upper portion of the state through which the railroad passes, is so far distant from the river as to render the transportation of any surplus produce there unprofitable, unless when prices are very high. As a consequence, but a small fraction of these lands is improved, and the raising of stock forms the chief resource of the farmer. The importance and advantage of a railroad to that section of country, must be instantly apparent to every one.

Railway furniture and Locomotives in the World's Fair.

The July number of the Westminster Review contains a very full and minute description of the railway furniture, locomotives, &c. in the Industrial Exhibition at the Crystal Palace. The following extract, will be of interest to our readers:—

In looking through this large sample of the work wrought by man in the process of winning the world from the wilderness—this emblem of growth since the time that aboriginal Britons painted their skins with "the juice of wood," the imagination is at first bewildered, and most persons find it needful to let many days elapse, wandering as through a newly discovered country, absorbing matters in thought. Nature, Art, and Utility all seem to struggle for notice and claim the first attention.—We commence with the utility as the basis of man's existence; and with that especial portion of utility without which this huge compendium of human civilization had not been possible. We allude to the means of transit on the large scale—railways and their appliances.

For, without railways, the uses of iron and glass in buildings had not been in such a state of progress; their manufacturers, without the large demand, could not have constructed the means of supply. Without railways, the mass of objects would scarcely have been transported to the scene of exhibition; and without railways, the mass of the world's denizens could not have been collected together to commence the era of human brotherhood, to show practically that God hath made all men of one blood,—to show the remarkable fact, that while almost all Europe is ruled, and kings and princes protected by soldiery, here in England the love of order practically suffices.

A long double line of rails, and engines and vehicles thereon, exhibit some of the old and many of the new arrangements.

The "permanent way" is of many kinds. There is the common cross sleeper road, with double T rails and cast iron chairs and wood keys and compressed trenails, on Ransome and May's plan; and here is the Great Western plan of the comparatively shallow, bridge rail, laid on a small balk of deal, seven inches deep, by fourteen inches wide, and solidly bolted to it with plates at the joints.—This mode of laying "permanent way" has enabled the huge machinery of the Great Western to travel with comparative safety. It is really an elastic railway, and the elasticity is continuous; but the waste of power must be very considerable, and the expense of maintenance is great. That the joints are not satisfactory may be gathered from a late experiment of welding or rivetting a rail together, a quarter of a mile in length, to get rid of the jolt in travelling. It is said that expansion and contraction produce no effect on this, but that the iron compresses,—a statement we incline to doubt. It is obvious that the uneven and loose joints of rails are a source of great destruction, expense of maintenance, expense in traction, and also a great source of risk; and the common plan of fastening on the Great Western has been far superior to the common plan of the narrow gauge. But the ordinary double T rail of the narrow gauge is very far superior to the bridge-rail of the Great Western, by its process of manufacture, and also by its better form for resisting vertical deflection. Adam's fish-joint, now used on many lines, and of which samples taken up from actual use are exhibited, was the first mode of remedying this evil. A pair of "finishing" plates, similar to the plan used by seamen for joining a broken yard or mast, are applied on each side of the rail, neatly fitting the side channel.

Four bolts pass through the whole from side to side. The holes in the rails being of larger diameter, the expansion and contraction are free, and the fishes fitting the rails only against the upper and lower lip, and having a hollow space where the bolts pass through, they are always on elastic tension, and never work loose. This plan has been found in practice to convert the rails into a continuous bar. In the use of these fishes, the joints of the rails are not made to bear on supports, but are suspended between them, being amply strong and all vibration is thus avoided. A small model shows a mode of combining this fished rail of the

narrow gauge with the longitudinal baulk-sleeper of the broad gauge. The timber is cut in two vertically, and the rail being grooved into it, the two timbers are bolted together by bolts from side to side beneath the rails, which are bedded to the upper lip. This fish joint has hitherto withstood the test of heavy traffic better than any other plan tried, and reduces the expense of "maintenance of way" to a mere fraction of what it was before the plan was tried.

Subsequently to the introduction of this fish-joint which was patented in 1847, Mr. Barlow of the South Eastern patented a system of cast iron-sleepers, on the alleged ground of advantage, that cast iron was not subject to decay like timber. These sleepers are longitudinal, but not continuous. They are cast in two halves, with three grooved heads to clip the lower lip of the rail, and being bolted together hold it like a vice. These cast sleepers being three feet in length, it is obvious that the two rail ends abutted together and thus bolted, would make a good joint, provided the iron fitted, and were sufficiently strong. A sample of this is shown.

Apparently doubtful of this, Mr. Barlow of Derby patented a similar plan of cast-iron sleepers, but in one piece, with three chair-heads, and wooden keys to keep the rails fast. A sample of this is also shown.

A third competitor then came into the field. Mr. Samuel of the Eastern Counties, planned and patented a kind of cast-iron trough, into which the rail was wedged between two pieces of timber, grooved as first described. These cast-iron troughs thus formed a combination of Barlow's cast-iron sleeper and Adam's timber bending. But they are not continuous, and the fish joint is used with them instead of Barlow's cast-iron sleepers, making a combination of all three. This sample also may be seen as a specimen of two years' actual use. It is mechanically the best arrangement, where cast-iron is used, providing a timber cushion for the rail, which cannot be crushed away any more than the water can be crushed in a hydraulic press. But it would be a far better plan to make the troughs the whole length of the rail to prevent deflection at the intermediate spaces. Close beside these appears another sample of cast-iron sleepers, patented by Mr. Hoby. They are iron troughs, similar to those of Mr. Samuel, with the difference that the rails are retained in them, not by a wood bedding, but by folding wooden wedges.

The object sought by the Messrs. Barlow and Mr. Hoby is twofold: First, to obtain good connection of the two rail-ends by an elongated metal fastening, which is a practical variation of the plan of fishing patented by Mr. Adams. Secondly, to obtain durable sleepers. But whether the rigid cast-iron structure will be mechanically so advantageous as the combination of iron and timber, is problematic. So important is it now considered to obtain good joints, that Mr. Norris, of the North Western, has patented a plan to carry a moving furnace along the rails for casting a mass of iron round the joints, just as a plumber makes a lead-joint to a pipe.

Close by is a sample of the cast-iron sleepers patented by Mr. Greaves, called the dish-cover sleeper, from being of a hollow conical shape. They are simply a chair cast on a truncated cone, and were merely intended, not to remedy a defective joint, but to attain chemical durability. They were produced at an earlier period than Mr. Barlow's, and too save cost in iron, were made to thin. A peculiarity about them is a hole in the top, through which to ram down the earth with a mallet or rammer, to raise them when driven down with the working of the trains.

None of these cast iron plans are original. Some years previous, a Mr. Reynolds patented cast iron sleepers with wood linings, called, from their angular shape, the hog trough metals. They were tried on the Great Western and abandoned, but whether from inherent defects or from injudicious detail, we are not sure.

The last novelty in rails exhibited, was patented by Mr. Barlow of Derby, and is called the saddle-back rail. It is a variation of the form of rail used by the Great Western, and resembles the pommel and two side-flaps of a riding-saddle, hollow beneath. The peculiarity of this rail is, that it is wholly independent of sleepers, and is supposed to

be of sufficient surface, strength and weight, to maintain its position on the ground by the mere addition of tie-rods, connecting the two opposite rails together. The points of the rails are riveted to a single fishing-plate, connecting each pair of rails together. This kind of rail is still in course of probation on the Midland line, and on the Great Western. It is described as being more noisy than the rails laid in cast iron; and we incline to think that vibration may produce some unexpected effects from it, from which the combination of wood and iron is free, of precisely the same kind that led to the abandonment of stone sleepers.

Let us consider the principles that are essential to the durability of "permanent way:" first, that the rail surface be not crushed by too great a weight on the peripheries of the wheels. If the rail be quite rigid, four tons per wheel is the limit which ordinary iron will bear. Now it is very difficult to make a rail rigid, unless the bar be sufficiently strong in itself to bear the maximum weight without deflection. If it be so strong, and be sufficiently upheld below, it is manifest that the weights of the heavy engines used must laminate and destroy it.

Secondly. The bearing surface of the chair or other material on which the rail lies, must be sufficient to prevent the crushing either of the one or the other.

Thirdly. The bearing surface of the rails and sleepers on the ballast, must be sufficient to prevent sinking and displacement by reason of the rolling loads.

Fourthly. If there be deflection, as there is on the Great Western plan, and in the cast-iron plans in short lengths, there will be a waste of steam-power.

The saddle-back rails are about five inches in depth, and about eleven inches wide. It is said they do not deflect. If so, they will be found to wear. If they do deflect, they will bend and widen, as the surface bearing appears insufficient.

Beyond the principles before laid down there is yet another. A ship requires ballast to hold her steady in the water, and the railway requires ballast to hold the rails steady. To this end the rails should get hold of the ballast; should be anchored to it.—This can only be by weight, or some kind of holding down. Teeth are held in the jaws by snags—trees in the ground by roots clogged in the earth—buildings stand on heavy foundations. Saw-cut sleepers are far inferior to rough log-sleepers or old ship timber, both in weight and adhesion. And we think that both in the saddle-back rail and the cast-iron sleeper plans, the desire to save weight and keep down cost will be fatal to durability, unless some plan be resorted to of securing these light superstructures to an efficient quantity of ballast. A mere light surface must be constantly in process of displacement by rapidly passing trains.

We have dwelt specifically on this subject, because cheap, rapid and certain transit mainly depends on the excellence of roadway, and cheap and rapid transit is the main element in civilization.—We now approach the machinery.

Foremost in the rank on the broad gauge, and in close proximity behind it on the narrow gauge, stand samples of the largest and smallest class of locomotive engines. The former is named the "Lord of the Isles," and is said to weigh fifty-three tons with coke and water. In old classic phraseology, we might call it the tyrant of rails. It is a specimen of very beautiful workmanship, from the Great Western factory at Swindon. The parts are well proportioned; so well, that if viewed from a distance the machine does not look large. The engine is on eight wheels, the tender on six, altogether fourteen. The cylinder inside, the axle cranked, as are all broad gauge engines, save one, and the driving wheels are eight feet in diameter.—It is said that it will take one thousand passengers at great speed. But the question of economy, and convenience is, whether a fourth part of the number at four different intervals would not better subserve the wants and wishes of the public.

We have sometimes watched these engines when starting from the shed. They are supported on the four leading and two trailing wheels, and with a pressure of from thirteen to fourteen tons on the two driving-wheels. The driving-wheels commonly

turn round and round without moving the machine forwards, which is a clear proof that the rails are deflecting beneath them, while the weight of the machine is upborne at the extremities. In this dilemma sharp gravel is thrown before the wheels and an interlocking surface is obtained, when with a violent impulse that shakes the ground, the machine starts forward like a tiger at the sudden aspect of raw meat. The impetus thus obtained, the machine moves on; but if the rails were inflexible it is obvious that a smaller amount of power would suffice. But if inflexible, they would tread out more rapidly. It might not be of importance to wear out rails—it might answer to replace them every week if the traffic were plentiful in proportion; but it can only be with a waste of steam that the present system can be worked. We have heard that one of these large engines is called by the drivers the "Emperor of Russia," consuming much oil and tallow.

Close behind this "tyrant of the rails," stands a small engine of first rate workmanship, called the "Ariel's Girdle," arranged upon the light system of Mr. Adams, who has long and perseveringly worked to reduce the surplus weight on railways, and proportion the weight to the load, seeking to obtain the greatest power with the smallest bulk and weight, and the minimum of friction. As usual in all cases of running counter to an established practice, he was strongly opposed; but, as usual in all true things, the truth prevailed, and many now seek not merely to travel in the same path, but to claim the precedence. The "Ariel's Girdle" is on four wheels, the driving-wheels being five feet in diameter, the leading wheels, three feet. The cylinders are outside, and nine inches in diameter. There is a tank below the engine, carrying the water for twenty-five miles, and the coke is all arranged under cover round the fire-box. All the working parts are under the direct control of the driver, close at hand, and the foot plate may be kept clean, and all as neat as a kitchen range. The engine is coupled to a four-wheeled tender carriage in a peculiar manner, so that the two together form one eight-wheeled machine, capable of flexure laterally but not vertically, and with an arrangement for the driver to tighten or loosen as the engine runs, to obtain rapidly on straight lines, or flexibility on curves. The tender carriage has a tank of water in the floor, sufficient for twenty-five miles, so that altogether the machine may travel fifty to sixty miles without stopping. The body of the tender-carriage is adapted to carry forty, first, second, and third class passengers, and the guard, who may serve as stoker also, if for cheap branch lines. The seats of the second class compartment fold down so that it will serve for mails or for luggage. It will travel as an express, at fifty to sixty miles per hour. The engine has a common break, the tender-carriage has a sledge-break, pressing on the rails and saving the wheels, all under the control of the driver. The whole would form a convenient private carriage for a family. Uncoupled from the tender-carriage the engine is a simple tank engine, and will draw 100 tons gross of waggons, at fifteen miles per hour; and it is adapted to couple to the second engine, forming one machine, with one driver, for increased loads. Or coupled to the tender and other carriages, it will serve to take 200 to 250 passengers at thirty-five to forty miles per hour. Or, with the eight-wheel carriage, forty-four feet in length, near it, which is adapted to run with the most perfect freedom from oscillation, and with the minimum of friction, by the reason that the wheels are all free to follow their own courses, it might travel from London to Liverpool in from four to five hours, without any damage to the road, and with a small consumption of coke. The boiler and fire box being small, will admit of considerable pressure, and by the lightness of the engine, under nine tons without water, together with its free running, it will consume very little of its own power. The patentee considers that a line worked wholly with these engines and carriages, would require scarcely any repair, while the speed might be equal to any other line; and the principle of frequent light trains instead of infrequent heavy ones, might be thus put in practice, with a steadiness of movement enabling the passenger to read and write. Thus a narrow gauge carriage gives a floor area of nearly forty seven feet per wheel, while the max-

imum broad gauge gives very little more than thirty-nine. The carriage we are speaking of will take eighty passengers, exclusive of a guard's compartment, and it is provided with a rail-break; so obvious a mode of saving wheels and rails from damage, that we marvel that it should have been so long delayed from use. To Mr. Waddington and Mr. Macgregor, the respective chairmen of the Eastern counties and the Southeastern, the public are indebted for the introduction of this improvement.

Close to the "Ariel's Girdle" stands a "South-eastern engine," on "Crampton's patent," with the driving-wheels eight feet in diameter, placed behind the fire box. The engine has six other wheels, and an independent crank shaft to communicate the motion of the pistons of inside cylinders to the driving-wheels, which have a straight axle. The tender is on six wheels, and the machine is as powerful as those on the broad gauge. It is from the factory of the railway chieftain, Robert Stephenson, and, therefore, to commend the workmanship would be superfluous. This is one of the engines which have grown up under the contest of the gauges for superiority. In some points we differ from Mr. Crampton in opinion, as to this engine, unless for a straight line. As to the advantage of getting the centre of gravity low, for which purpose he first adopted the driving-wheels behind the piston, there cannot be two opinions; but we think that the size of the engine and its great length involves some disadvantages. But the weight being within the wheels, and not overhanging, is a manifest advantage, when obtained without making the engine too long. The driving-wheels will not slip as they do when placed centrally, and when the weight is balanced by the wheels fore and aft. We have no doubt that these engines will tell as good a tale of speed on the Southeastern as those on the Great Western; and we are glad to see the position Mr. Crampton is gradually rising to in public estimation. He has manfully fought an up-hill fight, in which he has forced powerful opponents to acknowledge his skill and merit. An Englishman, in the best meaning of the word with good perception, untiring industry, unshrinking courage, and incessant desire for advancing attainment, we may easily apprehend how he acquires and retains the respect of all manly-minded men.

In the rear of Mr. Crampton's engine, stands the "Little England," a small six-wheeled tank engine, the driving-wheels four feet six inches in diameter, with inside cylinders and a crank axle. We do not like crank axles, for they are never sure against breakage, and it is a common remark that they do not last above three years. The "Little England" is one of the results following the lead of Mr. Adams's light system; and as the owner professes to have attained great results, of which we have no means of judging, we leave our readers to satisfy themselves. The "Express" was the first built by Mr. Adams, for Samuel's Eastern counties' work, and was followed up by many others—as the Fairfield, the Enfield, the Cambridge, the Whirlwind, the Running Fire, the Enniskillen, the Resurgam, the Speranza, the Ariel's Girdle, and others, the working drawings of which are chiefly made by Mr. Edward Reynolds, a pupil of Adams and Co., and one of the most rising of our practical locomotivists. The cylinders of these engines vary from 3½ inches up to 9 inches. It is since the commencement of these engines that the tank engines have grown to be a fashion, i. e., the tender has in many cases been dispensed with, and the water and fuel have been added to the load of a six-wheeled engine, frequently adding to its destructive powers. The tender was originally a contrivance to remove weight from the engine, but tank engines of large size are very unprofitable servants.

The next in order is the six wheeled tank engine, by Hawthorn. There is a peculiarity of construction in this. The wheels are connected by iron bearers supporting the springs, apparently for the purpose of getting only four bearing points on six wheels, for the boiler and machinery to rest on. This diminishes the base of the spring bearing, and we think it has a tendency to rock the engine when running.

A six-wheel tank engine by Wilson, of Leeds, offers another peculiarity of construction. It has two fire boxes, and two boilers, side by side, like a doubled-barreled gun, and a single chimney. We

do not see any advantages in it. There is more weight with less steam and water-space.

A large engine and tender, with driving-wheels 8 feet in diameter, stands next, chiefly remarkable for size. It belongs to the London and North-western, but we have no information as to its qualities.

A six-wheeled tank engine, by Kitson, Thompson and Hewitson, follows next, a specimen of very excellent workmanship from the Airedale foundry of Leeds. The finish is very high.

Close behind it is a six-wheeled tank engine of Fairbairn's. In this class the builder has gone to the opposite extreme; apparently satisfied with his workmanship, he has paid no attention whatever to finish.

Last comes the engine named the "Liverpool," built on Mr. Crampton's principle, by Bury, of Liverpool, for the London and North-western company. We do not know what the weight of the engine and tender is, but it must be considerable. It is a most perfect piece of workmanship. The portions that strike the observer are, the large driving-wheels placed behind the fire-box and combined with a low centre of gravity. The fire-box is enormous, to obtain which object the eccentrics are placed outside the driving-wheels very conspicuously.

In the foreign department there are two Belgian engines—one is called a Bogey engine, being on eight wheels, four drivers being coupled together behind, and four others applied to a swivelling truck. The friction of the peripheries of the wheels of this engine, tending to retard its progress, must be very great. The fire-box is uncommonly high, looking top heavy. In the French department there is an engine of the latter kind, the workmanship of which is as good as the principle—copied from the English engines—appears to us to be bad.

There are numerous models of engines in various places, but we have not remarked anything especially worthy of notice, save as samples of workmanship. Amongst the essentials of railways the most important are bridges, and the exhibition affords samples of many varieties. The most remarkable are the metallic structures. The only model of a cast-iron bridge that we remember is the "high level" of Mr. Stephenson, at Newcastle. In wrought iron the principle of the arch has not, that we are aware, ever been adopted, cast iron having so much more compressive power of resistance. Wrought iron has only been applied in the girder form, the principle of which is tension of the lower surface and compression of the upper. A model of the Britannia bridge shows this, as well as an American and Prussian structure, the former full size, the latter a model. A bridge, also, by Dr. Spurgin, proposed to cross the Thames at Westminster, is of the same class, though appearing almost like a simple chain, but we believe the first chain ever contrived to be rigid, which it is in one direction, though capable of bending in the opposite direction.

Amongst the collection is a very simple girder, analogous to the chain described, save that the tensile portion is a round iron bar, and the upper or compressive portion is a series of short cast-iron vertebrae threaded upon it. It forms a considerable arch, and resembles a spine of some long vertebrate animal. The whole of its strength resolves itself into the power of a screw thread on each end of the bar to resist breaking off. If the weight were to slip these threads, or the bar to break, the whole would tumble down. Yet the planner proposes to build a bridge on that scheme upwards of a thousand feet span.

Amongst all these models we miss a sample of Captain Warren's open girder bridge, the lower part of which is a chain to which is attached by their lower angles a series of triangles, the upper angles of which abut together. In that mode, by simply putting wedges between the upper angles, the girder may be made to assume any amount of curvature that may be desired, so as to form an arch not requiring external abutments. This simple bridge, now generally recognised as one of the best forms of structure, met with much opposition when first introduced. One that was erected at the London terminus of the Southeastern railway, to carry an ordinary roadway, was broken by the over-piling of a large mass of bricks. The parish authorities, with Dogberry wisdom, resolved that it was unsafe. The company refused to waste their money in removing it, engineers were called in on both sides,

with the usual result of conflicting opinions. The final result has been, that after a series of experiments, the objectors and their supporters have been vanquished, and the bridge is now acknowledged to be one of the strongest, lightest and cheapest that mechanical art has yet produced. Yet it was by the merest chance that the bridge escaped condemnation. Professionally jealousy would have excluded it because the inventor was "not one of us," but professional rivalry stepped in and neutralized the jealousy of clique, saving for public use an invention useful to the public. One great advantage of this kind of bridge is its facility of erection, as simple as that of any ordinary suspension bridge, without a scaffold. Another is, that though not wholly constructed of wrought iron, all parts are easily visible and accessible, to guard against oxydation. But we do not consider it adapted for very large spans, for which we would resort to a different mode of construction.

The model of the bridge over the Chepstowe river appears to combine several principles of structure, and differs widely from those before described. It would be difficult to pronounce an opinion from the imperfect workmanship, or to judge of the real structure therefrom. The whole roadway appears to depend on six screw-bolts connected with tension chains, serving to elevate and depress it.

To Chief Engineers, Directors of Railroads, Canals, etc.

A Civil Engineer and Surveyor, who has been professionally engaged under the British Government, East India Company, etc., is desirous of obtaining employment as an Assistant. No objection to the South or West. Address for one month to C. E. & S., American Railroad Journal office. August 16, 1851.

Railroad Iron.

THE Undersigned offer for sale 2,000 tons of Railroad Iron, to arrive at New York in the month of September next. It is of a most approved pattern and quality, and weighs about fifty-five pounds to the yard.

CHOUTEAU, MERLE & SANDFORD.
No. 51, New Street.

New York, August 9.

TO CONTRACTORS.

Belpre and Cincinnati Railroad.

Engineer's Office, }
Chillicothe, July 30, 1851. }

SEALED PROPOSALS will be received at the Engineer's Office, in Chillicothe, until the 18th day of September, 1851, for the Graduation, Masonry and Bridging of 42 miles more of their road;—25 miles being between Greenfield and Blanchester, and 17 miles east of the 11 miles now under contract east of Chillicothe.

Plans, Profiles and Specifications will be ready for examination, at the Engineer's Office, on and after the 10th day of August. Blank Proposals will be furnished to Contractors, and all necessary information given upon the line or at the office concerning the quality and quantity of work.

W. P. CUTLER, Pre'st.
A. KENNEDY, Chief Engineer.

Virginia Locomotive and Car Works.

Wolfe Street and River Potomac, Alexandria, Va.
SMITH & PERKINS, Proprietors.

MANUFACTURE

Locomotive Engines and Tenders.
Marine and Stationary Engines and Boilers.
Chilled Car Wheels and Axles.
Patent Chilled and Wrought Slip-tire.
Machinery and Castings generally.

The undersigned having erected very extensive shops, and procured the most modern machinery and tools, are prepared to execute orders for Locomotive Engines, Cars, and Machinery of all kinds, with despatch, and on the most favorable terms.

R. C. SMITH,
Late of the Alexandria Iron Works.
THATCHER PERKINS,
Late Master of Machinery on the Balt. & O. R.R.
July 22, 1851;

Bridges & Brother, DEALERS IN RAILROAD AND CAR FINDINGS, 64 Courtlandt street, New York.

Having established a general Depot for the sale of articles used in the construction of Railroads, Locomotive Engines and Railroad Cars, we would invite your attention to our establishment. We have already in store a good assortment of CAR FINDINGS and other articles used in the trade, and feel justified in saying, that should you desire anything in our line, we can supply on terms perfectly satisfactory, and in the event of your desiring to order, you may feel assured that your terms will be as good as though you were here to make your own purchases.

Among our goods may be found Railroad Car Wheels, Axles, Jaws and Boxes, Nuts and Washers, Bolts, Brass Seat Hooks and Rivets, Window and Blind Springs, Lifters and Catchers, Door Locks, Knobs and Butts, Ventilators and Rings, Car Lamps, Coach and Wood Screws, Jack and Bed Screws and Babbitt's Metal; also Plushes, Damask, Enamelled Head Linings, Cotton Duck for Top Covering in width sufficient without seams, Curled Hair and all other articles appertaining to cars.

Also a new and valuable CAR DOOR LOCK, well adapted to the Sliding Door. This is decidedly the best yet introduced.

LOCOMOTIVE ENGINE LANTERNS, the best article made in the country. Whistles, Gauge and Oil Cocks, Hemp Packing, American, Russian and Italian. We are also agents for Lightner's Patent Journal Box for Car Axles, that invaluable invention, for the economical use and preservation of Car Journals.

Coach VARNISH and Japan of the best quality. We would also offer our services for the purchase as well as for the sale of goods on commission.—Both members of our firm have had the experience of many years in the manufacture of Railroad Cars, and our Senior was a member of the well known house of DAVENPORT & BRIDGES, Car Manufacturers, Cambridgeport, Mass. With our knowledge of matters pertaining to Railroads, we feel quite confident in giving satisfaction to both buyer and seller, and hope that through assiduity and attention to any business entrusted to our care we shall merit a continuance of confidence and patronage.

BRIDGES & BROTHER.

July 22, 1851.

Lightner's Patent Axle Boxes.

THE Undersigned are Agents for, and offer for sale, *Lightner's Patent Axle Boxes*, for Railroad Cars and Tenders, which have, by thorough experience, been demonstrated to be one of the most valuable improvements ever introduced in Locomotion. The saving effected in oil alone, will in a few months pay the first cost of these boxes, independent of other advantages. They are now in use upon the following, among other roads, viz:

Boston and Worcester, Boston and Providence, Boston and Fitchburgh, Nashua and Lowell, Providence and Worcester, Northern, N.H., Cheshire, Manchester and Lawrence, Concord, N.H., Concord and Claremont, Ogdensburg, (Northern, N.Y.) Stonington, New London Willimantic and Palmer, New Jersey Central, New Hampshire Central, Worcester and Nashua, Fitchburg and Worcester, Connecticut and Passumpsic, Lowell and Lawrence, Salem and Lowell, Wilton Branch, Newburyport.

Below will be found the certificates of a number of gentlemen, whose opinions will be good authority in every part of the country.

Office Boston and Prov. R. R.,
Boston, Dec. 23, 1849.

Mr. JOHN LIGHTNER,

Sir,—It affords me pleasure to say, that after two years' trial of your boxes, I am fully and entirely satisfied of their superiority over any other pattern we have used. This superiority consists in economy of oil and freedom from "heating." I have tried every pattern of box in use, of any note, and do not hesitate to say, that you have devised one which in every respect combines greater advantages than any other within my knowledge; these advantages are so manifest, that I am fitting up all

our cars with your boxes, as fast as practicable.

Annexed, is a statement of an experiment with your boxes, the result of which may be of use to your interests.

Ten passenger cars, running 72 wheels, fitted up with Lightner's boxes used 41½ pints of Patent Oil, at 50 cts. per gallon, ran 43,099 miles, equal to 5.18 pints per wheel for 43,099 miles. Speed, 30 to 40 miles per hour.

Very respectfully yours,
W. RAYMOND LEE, Supt.

I have examined the above statement of Mr. Lee, and fully concur with him in his opinion of the superiority of Lightner's box.

GEORGE S. GRIGGS,
Supt. Machine Shop B. & P. R. R.

Boston, July 26, 1849.

This is to certify that J. Lightner's axle boxes for railroad cars and locomotive tenders, have been in use on the Boston and Worcester railroad one year, and I unhesitatingly pronounce it, in my opinion, the best and most economical one in use, requiring less oil, of easy application, not susceptible of derangement, as in most kinds in use. When requiring repairs or renewal, the same may be done in one-fourth of the time usually occupied for that purpose. The box requires oiling not oftener than once a month—is kept quite free from dust, and consequently wears much longer than those generally in use.

D. N. PICKERING,
Supt. Motive Power, B. & W. R. R.

Office of Boston Locomotive Works,
December 12th, 1849.

The Boston Locomotive Company have been using J. Lightner's patent axle boxes under the tenders of their engines for several months, and find them more highly spoken of by the railroad companies that have used them in regard to economy in the use of oil, their durability and their ease of adjustment, than any other boxes which they have used. We therefore do not hesitate to recommend them to all railroad companies.

DANIEL F. CHILD,
Treas. Boston Locomotive Works.

Taunton Locomotive Works,
Taunton, July 7, 1849.

Mr. H. F. ALEXANDER,

Dear Sir,—Your favor of yesterday came to hand in which you ask what success we have met with, in using Mr. Lightner's patent box for cars, engines, &c.

We have put it in use on the Boston and Providence railroad, New Bedford and Taunton Branch railroad, Central railroad, N. J., Norfolk County, Rutland and Burlington, and as yet we have not had one complaint from them; and from what we have used of it, and witnessed, we do not hesitate to say that it is superior to anything in use for that purpose. It is simple in its construction, and easy of access, and the reservoir is held close to the shaft, and the oil and journal is perfectly secure from dust; they will run from four to six weeks without replenishing the oil. The brass in the box is changed very much easier than by any other plan that we have seen.

Very resp. yours,
W. W. FAIRBANKS, Agent.

Office Providence & Worcester R. R. Co.,
Providence, Dec. 17th, 1850.

H. F. ALEXANDER, Esq.,

Sir,—The "Lightner patent boxes" for cars and locomotives have been in use under a portion of the passenger cars and engines of this company for upwards of two years, and have given very great satisfaction.

Though combining many excellent qualities, their great superiority consists in the economy of oil.

The result of experiments upon this road shows the consumption of oil by the use of this box, to be not more than one sixth part the quantity consumed by the use of the common box.

With the common box, eight passenger cars, 64 wheels, running 90 miles per day, consumed in 12 months 520 gallons of oil, being an average of 8½ gallon per wheel per annum.

With the Lightner box the same cars running the same number of miles per day, during the same space of time consumed 73½ gallons of oil, being an average of 1½ gallon per wheel per annum.

So manifest are its advantages over any other box used by this company, it is intended to place it under all our cars as soon as practicable.

Besides the saving of oil, as they afford complete security from dust, we think them more durable than any other box in use.

Another advantage resulting from the use of this box is, cars run more easier than with the common box. The saving in fuel which it would effect, would of itself, we think be a sufficient inducement to use this box in preference to any other known to us.

Very respectfully,
ISAAC H. SOUTHWICK, Supt.
JOHN B. WINSLOW,
Supt. Machine Shop, P. & W. R. R.

Cambridgeport, April 5th, 1851.

H. F. ALEXANDER, Esq.

Sir,—This may certify that I have been engaged in the manufacture of railway cars since 1834, and have built for the different railroad companies cars of all descriptions to the amount of three millions of dollars, and have used on the above cars all kinds of journal boxes, and find that none give better satisfaction than the "Lightner patent box," both on account of the saving of oil and the arrangement for taking out and re-placing the composition by means of the sliding key, and other conveniences which no other box possesses.

Yours respectfully,
CHARLES DAVENPORT.

Worcester, March 17th, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—This is to certify that I have been for some years past engaged in building cars, and that I have tried most, if not all of the patent boxes, and have found Lightner's patent superior to all others as far as the saving of oil is concerned, also the ease with which they are fitted and exchanged in case they get out of order.

For the last three years, I have put them under all of the cars I have built, and in every instance they have given the most entire satisfaction.

Yours truly,
OSGOOD BRADLEY.

Office Union Works, So. Boston,
May 23d, 1851.

This certifies that I have applied Mr. J. Lightner's patent axle boxes to my locomotives and tenders for the past two years. I consider them superior to all others,—economical in their use, and possessing many important advantages not found in any other boxes.

SETH WILMARTH.

Office 15, R. R. Exchange, Boston,
June 1, 1851.

This is to certify, that we have known the success of Lightner's patent journal boxes upon various roads in New England the past three years, and have been led to examine their peculiar construction.—We are well satisfied of their merits, and have adopted them upon our small gravel cars, and take pleasure, as we ever have done, in recommending their use upon all roads where we are employed in the construction.

GILMORE & CARPENTER,
Contractors.

Amoskeag Manufacturing Co. Machine Shop,
Manchester, May 31, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—We are using the Lightner box on all the engines and tenders we build, and we are satisfied that it is the best box in use, and recommend the same to all those who purchase engines at our works.

Yours respectfully,
O. W. BAYLEY, Agt.

This is to certify that the Fitchburg railroad company having become satisfied of the superiority of J. Lightner's patent Axle Boxes for Railway Cars and Locomotive Tenders adopted the same,

and are bringing them into general use upon their road.

One year's experience with the above improvement, has fully convinced me that there has never been anything offered to the public for that purpose which possess such intrinsic value; in fact, this is an improvement which seems to overcome all the difficulties found in all the various kinds now in use. It possesses very many advantages over all others: Some of which are [first] the first cost is much less than that of most boxes in use. [Secondly] 75 per cent is saved in oil; one gill applied to each Journal once a month, or one quart to an eight wheel car, is all these boxes require per month [Thirdly] no dust can gain access to the Journal, which is constantly lubricated with clean oil; hence the saving in repairs of Journals and composition bearings, is a matter of importance. [Fourthly,] its construction is truly simple—not complicated, having nothing liable to become loose by constant and severe service. [Fifthly] for convenience there is nothing which approaches this improvement.—The composition bearings may be removed from the Journals of an eight wheel car, by one man, and returned, or duplicates, in twenty minutes, while under the car: the same would require two men, at least half a day with other boxes in use.—The trucks and wheels using these boxes, are free from oil and dirt, usually seen upon all railroad cars, at great expense to the corporation.

NATH'L JACKSON.

Supt. Car Building and Repairs, F.R.R. Co.

Boston, March 9, 1849.

I hereby certify, that I have examined a box for Car Journals, invented by Mr. Lightner of Roxbury, Mass, and I have thought so well of it that I have adopted it on our railroad, I have known of its success on other roads.

S. M. FELTON,

Supt. F. R. R.

Office of the Central R. R., N. J., }
Elizabethtown, May 1849. }

H. F. ALEXANDER, Esq.,

Dear Sir:—Your favor, [wishing to be informed how we liked Lightner's patent axle boxes for R.R. Journals,] has been duly received; in answer we would say, we have used the boxes on Locomotive tenders one year, more or less, and on our cars some six months. I consider them the best boxes in every respect, I have ever used, or even seen used on any other roads—for safety, durability and the economy pertaining to all the details connected with the boxes and Journals of R. R. Car wheels; and we shall adopt them upon this road.

Yours Respectfully,

JOHN O. STEARNS.

Supt. Central Railroad Co., N. J.

Manchester, N. H., Nov. }
1st, 1850. }

H. F. Alexander, Sir,

I have used "Lightner's Boxes" under all the Cars of the Manchester and Lawrence railroad, and feel no hesitation in saying that I think them to be the best boxes now in use.

Yours, &c.,

THEODORE ATKINSON, Agent.

Cheshire R. R. Office, Keene, }
March 5th, 1851. }

Mr. H. F. Alexander,

Sir,—Lightner's Patent Boxes have been used on the Cheshire R. R. about a year, and have given the highest degree of satisfaction.

All the Passenger Cars now in use, and a considerable number of Merchandize Cars are furnished with them, and they will take the place of the Common Boxes on all the cars as fast as circumstances will permit.

Very Resp't.

L. TILTON,

Supt. Cheshire R. R.

Boston and Worcester Railroad, }
Boston, April 1st, 1851. }

H. F. Alexander, Esq.,

Dear Sir,—Lightner's Patent oil saving box for railroad cars, has been adopted by this corporation; we are taking out the common and substituting the

Lightner's at the rate of fifty boxes per month; it will soon take the place of all others, as it is decidedly preferable to any heretofore used by this corporation.

G. TWITCHELL, Supt.

Statement of amount of oil used on 32 8-wheel freight cars, on the Boston and Providence Railroad (with Lightner's Boxes) from March 10, 1849, to February 27, 1851, and upon 12 8-wheeled passenger cars from September 8, 1849, to February 27, 1851.

FREIGHT CARS.

Amount Oil.	No. months.	Amount Oil.	No. months.
1.—21 pts.	10	17.—23½ pts.	14
2.—19 " "	6	18.—23½ " "	11
3.—25 " "	13	19.—36 " "	21
4.—18 " "	7	20.—22 " "	10
5.—22 " "	12	21.—38½ " "	24
6.—24 " "	13	22.—29 " "	23
7.—20 " "	11	23.—35½ " "	23
8.—21 " "	11	24.—37½ " "	23
9.—23½ " "	10	25.—51 " "	23
10.—21 " "	9	26.—31½ " "	24
11.—20 " "	9	27.—28½ " "	23
12.—21½ " "	11	28.—36 " "	23
13.—19 " "	8	29.—50½ " "	24
14.—25½ " "	17	30.—50 " "	23
15.—20½ " "	10	31.—41 " "	23
16.—31 " "	18	32.—39½ " "	23

Total, 925½ pts. 510

PASSENGER CARS.

1.—19½ pts.	18	7.—30 pts.	18
2.—25½ " "	18	8.—25½ " "	18
3.—33½ " "	16	9.—29 " "	18
4.—19 " "	15	10.—46½ " "	17
5.—15 " "	15	11.—9 " "	9
6.—22 " "	18	12.—65½ " "	17

Total, 340 pts. 197

Averaging 1 4-5 pints of oil for freight, and 1 7-10 for passenger cars per month only!

All orders and enquiries promptly attended to.

BRIDGES & BROTHER,

No. 64 Courtlandt st., New York.

July 25, 1851.

To Boiler Makers, Engineers, etc., etc.

PATENT LAP-WELDED IRON TUBES,
Manufactured by the
BIRMINGHAM PATENT IRON TUBE CO.

UNDER

PROSSER'S PATENT,

from one and a quarter to eight inches in diameter.

These tubes are well known for their superiority over all other descriptions for Locomotive, Marine and other Steam Engine purposes, for which they are used very extensively in Great Britain and on the Continent of Europe.

For sale in quantities to suit purchasers, by

WILLIAM BIRD & CO.,

41 Wall st., New York.

July 26, 1851.

To Railroad Companies.

THE undersigned has discovered and patented an imperishable, cheap, and sufficiently elastic substance, to be introduced between the sill and rail, so that the stone sill can be used in place of the wooden sill: entirely overcoming that rigidity where the rail is laid directly on stone. Address

J. B. GRAY, Philadelphia.

July 10, 1851.

To Contractors.

Peru and Indianapolis Railroad.

PROPOSALS will be received at the office of the Peru and Indianapolis Railroad, in Noblesville, until the evening of the 13th of August next, for the Grading of the line of the above road from Noblesville to Peru, a distance of fifty miles. Also the masonry for Bridges over the Wabash, Big Pipe and White Rivers.

The proposals are to be addressed to W. J. HOLMAN, Esq., Chief Engineer, at the Company's Office, where plans and specifications of the work may be seen. Payments will be made monthly in cash, reserving 15 per cent. till the contracts are completed.

Indianapolis, July 12, 1851.

European and North American Railway.

THE undersigned, the three persons first named in the first section of an act passed by the Legislature of Maine, and approved the twentieth day of August last past, entitled "An Act to incorporate the European and North American Railway Company," and being specially authorised therefor in and by said act, hereby give public notice that, for the purpose of receiving subscriptions to the stock of said company, as established by the act aforesaid, according to the provisions thereof, not exceeding forty thousand shares, books of subscription will be opened under the direction of the undersigned, according to the regulations prescribed, at the time and places following, viz:—On WEDNESDAY, the Twentieth day of August next,

At Calais, Maine, with Noah Smith, Jr., Esq.

Eastport, do. " Col. Bion Bradbury.

Machias, do. " Walker & O'Brien,

Ellsworth, do. " Seth Tisdale, Esq.

Oldtown, do. " Geo. P. Sewall, Esq.

Bangor, do. " Geo. W. Pickering, Esq.

Orono, do. " Hon. Israel Washburn, Jr.

Waterville, do. " Hon. Timothy Boutelle.

Brunswick, do. " Prof. William Smyth.

Augusta, do. " B. A. G. Fuller, Esq.

Belfast, do. " John Y. McClintock, Esq.

Portland, do. " John B. Brown, Esq.

Portsmouth, N.H. " Hon. I. Goodwin.

Salem, Mass. " Stephen A. Chase, Esq.

Boston, do. " Francis Skinner & Co.

Lowell, do. " John Wright, Esq.

Worcester, do. " Charles Washburn, Esq.

Providence, R.I., " Billings Brastow, Esq.

Hartford, Conn., " Hon. C. F. Pond.

New Haven, do. " Allen Prescott, Esq.

New York, N.Y., " R. & G. L. Schuyler, No.

2 Hanover street.

Albany, do. " John V. L. Pruyn, Esq.

Troy, do. " Hon. John D. Willard.

Philadelphia, Pa. " Hon. Wm. C. Patterson.

Montreal, Canada, " Hon. John Young.

Quebec, do. " J. B. Forsyth, Esq.

Said books will remain open for ten successive days at the places and with the persons aforesaid. Dated at Portland, this sixteenth day of June, A. D. 1851.

ELIJAH L. HAMLIN,

ANSON G. CHANDLER,

JOHN A. POOR.

Trautwine on R. R. Curves.

By JOHN C. TRAUTWINE, Civil Engineer,

Philadelphia, Pa.

IN press, and will be published in a few days; accompanied by a Table of Natural Sines and Tangents to single minutes, by means of which all the necessary calculations may be performed in the field.

This little volume is intended as a field-book for assistants; and will be found extremely useful, as it contains full instructions, (with wood cuts) for laying out, and adjusting curves; with Tables of Angles, Ordinates, etc., for Curves varying from 13 miles, down to 146 feet Radius.

A portable Table of Natural Sines and Tangents to minutes, has for a long time been a desideratum among Engineers, independently of its use in laying out curves.

The volume is neatly got up in duodecimo; and handsomely bound in pocket-book form.

Sold by Wm. Hamilton, Actuary of the Franklin Institute, Philadelphia. Price \$1.

Also in press, and will be issued in a few weeks, "Trautwine's Method of Calculating Excavation and Embankment."

By this method, which is entirely new, (being now made known for the first time) the cubic contents are ascertained with great ease, and rapidly, by means of diagrams, and tables of level cuttings. Thin octavo; neatly half bound, \$1. For sale by Wm. Hamilton.

June 28, 1851.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

Notice to Contractors.*Steubenville and Indiana Railroad.*

PROPOSALS will be received at the Office of the Steubenville and Indiana railroad company in Steubenville, until the first day of October next, for the Grading and Masonry of the first division of the road extending from Steubenville to the Connottan valley and also for the construction of the entire road between Steubenville and Coshocton; and also distinct proposals for the construction of that portion of the road extending from Coshocton to Newark.

The entire length of this line is about 110 miles, and it contains work of all descriptions, in great variety, some of which is quite heavy.

Proposals will be received for the Grading and Masonry of the first division entire or in sections of about a mile each, the Company reserving the privilege to make such disposition of the whole work, as may appear most conducive to its interests.

Plans, profiles and specifications can be seen at the office of the Company after the 15th of September, and further information may be obtained on application to J. Blickensderfer, jr., Chief Engineer, or to the undersigned,

D. KILGORE, President.

Notice to Contractors.*Engineers' Office, E. T. & V. R. R. Company, Greenville, E. T., June 5th, 1851.*

PROPOSALS will be received until the 1st day of October next, for the Grading and Masonry of that part of the E. T. & V. Railroad between the Eastern terminus of said road at King's Meadow, and Rheatown, in Greene County, a distance of about forty seven miles. A large amount of very heavy work, both in Grading as well as Masonry, will be found on this division, offering strong inducements to able Contractors.

Maps, Profiles, and Specifications can be seen at this Office, on and after the 20th of July next.

The Company reserve the right to reject all, or any proposals that they deem unsatisfactory.

Proposals should be directed to the Treasurer and Secretary of the E. T. & V. Railroad Company, Jonesborough, E. T.

LLOYD TILGHMAN,
Chief Engineer.**Railroad Lanterns.**

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.

August, 16, 1849.

6m33

Railroad Iron.

THE Subscribers, Agents for the Manufacturers, are prepared to contract for the delivery of Railroad Iron at any port in the United States or Canada, or at a shipping port in Wales.

WAINWRIGHT & TAPPAN,
29 Central Wharf.

Boston, June 1, 1851.

Bowling Tire Bars.

40 Best Flange Bars $5\frac{1}{2} \times 2$ inches, 11 feet long.
40 " " $5\frac{1}{2} \times 2$ " 7 feet 8 in. long.
40 " Flat " 6×2 " 11 feet long.
40 " " 6×2 " 7 feet 8 in. long.

Now in store and for sale by
RAYMOND & FULLERTON,
45 Cliff street.

To Railroad Companies, Machinists, Car Manufacturers, etc., etc.CHARLES T. GILBERT,
NO. 80 BROAD ST., NEW YORK,

IS prepared to contract for furnishing at manufacturer's prices—
Railroad Iron,

Locomotive Engines,
Passenger and Freight Cars,
Car Wheels and Axles,
Chairs and Spikes.

Orders are invited; and all inquiries in relation to any of the above articles will receive immediate attention

THE Fourth Annual Exhibition of AMERICAN MANUFACTURES, by the MARYLAND INSTITUTE for the Promotion of the Mechanic Arts, will be opened in Baltimore on the 20th October, 1851.

The Exhibition will be held in the SPLENDID NEW HALL of the Institute, (fronting on Baltimore street) now being rapidly completed. Their edifice is centrally situated, chaste in its architecture, solid in its construction, and is by far the largest and most complete building in the United States, devoted to the Mechanic Arts. It may be added that this building is 355 feet long by 60 in breadth, with an average height of 68 feet, containing some twelve apartments, the largest of which is 255 feet by 60, and that the cost will be over \$70,000.

To this Exhibition, the Managers ask the attention of all engaged in industrial pursuits throughout the country, and cordially invite them to contribute specimens of their best productions for public inspection, and to compete for the prizes offered by the Institute. These prizes consist of GOLD and SILVER MEDALS, DIPLOMAS, etc., which were last year distributed as follows:—Gold Medals, 16; Silver ditto, 90; Diplomas, 60; besides 85 articles of Jewelry, etc., to ladies. Fair play will be scrupulously observed towards all, and every facility of Steam power, shafting, fixture, labor, &c., &c., will be amply provided free of expense. The machinery will be under a special superintendent, and a fine display of it is looked for. The last exhibition of the Institute was visited by more than 40,000 persons, and with their vastly improved accommodations and alterations, this number will be doubled at the coming display, embracing many Virginians, Pennsylvanians, and other strangers from the South and West.

Joshua Vansant, President.

Ed. Needles, } Vice Presidents.

F. A. Fisher, }

Samuel Sands, Rec. Sec'y.

Wm. Prescott Smith, Cor. Sec.

F. J. Clare, Treasurer.

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(*The last nine in Italics are the Committee on Exhibition.*)

The Hall will be opened for the reception of goods on MONDAY, 13th October; on the next Monday, 20th, at 7 P. M., the Exhibition will be formally opened to the public, and will positively close on Wednesday, 19th November. Articles for competition must be in the Hall by Thursday night, Oct. 16, unless delayed in shipment after starting in ample time.

Those who intend depositing, will give the Committee or the Agent, notice as early as possible, stating the nature of the goods, and probable amount of room required, to exhibit them to advantage.

Circulars, containing a view of the new Hall and the full regulations of the Committee, with special information, if required, may be had promptly, by addressing the undersigned, or the Institute's Agent, J. S. Selby, Baltimore, post-paid.

ADAM DENMEAD,
Chairman Com. on Exhibition for 1851.**SUPERIOR BLACK WRITING & COPYING INK.****Jones' Empire Ink.**

87 Nassau st., Sun Building, New York city.

Net prices to the trade—
Quarts, per dozen, \$1 50 6 oz. per dozen, \$0 50
Pints, " 1 00 4 " " 0 37
8 ounces, " 0 62 2 " " 0 25

On draught per Gallon, 20 cents.

This is the best Ink manufactured. It flows freely, is a good copying ink, and will not mould, corrode, precipitate or decay. Orders for export, or home consumption, carefully and promptly attended to by
21tf THEODORE LENT.

To Railroad Companies, etc.

The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

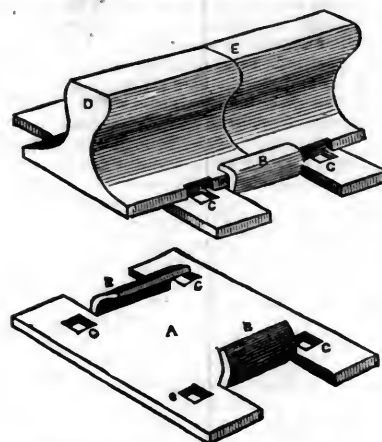
I also invite attention to an improved PATENT SPRING LOCK, for SLIDING Doors to Freight and Baggage Cars, now in use upon the Pennsylvania Central, Greenville and Columbia, S.C., Reading, Pa., and other Railroads.

Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH,

46 South 8th St. Philadelphia.

May 9, 1851.

The American Railroad Chair Manufacturing Co.

ARE prepared to make WROUGHT IRON RAIL ROAD CHAIRS, of various sizes, at short notice.

By use of the WROUGHT IRON CHAIR, the necessity of the wedge is entirely done away—the lips of the chair being set, by means of a sledge or hammer, close and firmly to the flange of the rail.

The less thickness of metal necessary in the Wrought Iron Chair gives much greater power and force to the spikes when driven—and consequently a much less liability to the spreading of the rails by reason of the spikes drawing or becoming bent.

The less weight necessary in the Wrought Iron Chair, will enable us to furnish them at a cost much below that of CAST IRON CHAIRS.

DESCRIPTION OF THE ABOVE CUTS.

Figure 1 is a perspective view of the rail secured in the chair, and fig. 2 is a perspective view of the chair itself. D, E, are sections of two rails placed together, and secured at the joint on the chair by the jaws B, B. The chair is bolted down by spikes C, C. In fig. 2, the chair is represented as made of a single block or plate A of wrought iron.

The chair is set in its proper place on the track, spiked down, and the ends of the two rails brought together within the jaws as represented in fig. 1.

For further information address,

N. C. TROWBRIDGE, Secretary,
Poughkeepsie, N. Y.

June 1, 1851.

Railroad Commission Agency.

THE Subscriber offers his services to Railroad Co's and Car Makers for the purchase of equipment and furniture of roads and depots and all articles and materials required in the construction of cars, with cash or approved credit. No effort will be spared to select the best articles at the lowest market price.

He is sole Agent for the manufacture of the ENAMELED CAR LININGS, now in universal use. The best Artists are employed in designing new styles, and he will make to order pieces with appropriate designs for every part of the car, in all colors, or with silver grounds and bronzed or velvet figures.

He is also Agent for Page's Car Window Sash Fasteners, which is preferred by all who have used it to any other.

CHARLES STODDER,

75 Kilby st., Boston,

June 20, 1851.

3m.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 136 NASSAU ST., NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.

SECOND QUARTO SERIES, VOL. VII., No. 35! SATURDAY, AUGUST 30, 1851.

[WHOLE No. 802 VOL. XXIV.]

ASSISTANT EDITORS,

J. T. HODGE, *For Mining and Metallurgy.*

GEN. CHAS. T. JAMES, *For Manufactures and the Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & CO., 136 NASSAU ST.

Saturday, August 30, 1851.

The Tehuantepec Railroad.

As the interference of the Mexican government with the operations of this company is exciting a good deal of interest, and as our government will without doubt be appealed to, to sustain the latter, we give below a brief abstract of an address to the people of the United States, signed by J. P. Benjamin of New Orleans, a leading man in the enterprise. It states in substance the case of the company.

The first grant or concession was made in March, 1842, by Santa Anna, who was then invested with the supreme dictatorship, to Don Jose de Garay, a Mexican citizen. This grant comprehended, among other special privileges, ten leagues of land on each side of the line of communication; the specific object of which was the establishment, either by water or railroad, of a connection of the two oceans across the Isthmus of Tehuantepec. By the terms

of the original grant all these rights and privileges were made transferable; and as this is the point upon which the present holders predicate their claim, we will give the precise words used in the grant. In it, President Santa Anna says that

"In the name of the Supreme Government, and under the most solemn protests, he declares and promises that all and every one of the concessions mentioned in the pre-inserted decree, shall be honorably fulfilled now and at all times; pledging the honor and public faith of the nation to maintain the projector, Don Jose de Garay, as well as any private individual or company succeeding or representing him, either natives or foreigners, in the undisturbed enjoyment of all the concessions granted."

In the following year, February, 1843, these rights and privileges were re-affirmed by Bravo, the then President of the Republic, by whose orders Garay was put in possession of the lands conceded to him. In October of the same year, Santa Anna, who was again President, issued a decree stating that the surveys of Garay had been concluded, and ordering the several departments to furnish him with a certain number of convicts to be employed on the work. In December of the same year, Santa Anna extended the period for commencing the work, which by the original grant was to expire in July, 1844, to July, 1845. The difficulties with the United States, assuming a menacing character, and impeding Garay in fulfilling his engagements agreeably to the terms of his extended grant he petitioned the government in June, 1845, for a further indulgence of time. A law in accordance with the tenor of this application passed the House of Representatives, but in consequence of a revolution, which was in those days a common occurrence, Congress was dissolved before it reached the Senate. Salas was the successful aspirant, and for a time exercised the supreme power of dictator. On the 5th of November, 1846, he promulgated a decree of a similar import with the one which had passed the Mexican House of Representatives. By this decree, the time for commencing the work was extended to the 5th of November, 1848; and by the admission of the Mexican authorities, the work was actually commenced prior to that date.

In 1846 and '7, Garay, availing himself of that clause which authorized him to assign his rights to "any private individual or company, natives or foreigners," made a transfer of all his interest to Manning and MacIntosh, English subjects, residing in Mexico. Of this transfer the Mexican go-

vernment had notice, and the rights and privileges of the assignees were fully and officially recognised. This is shown by the fact that when our government proposed to give fifteen millions of dollars for the right of way across the Isthmus, the Mexican Commissioner replied "that Mexico could not treat on this subject, because she had, several years before, made a grant to one of her own citizens, who had transferred his rights by the authorization of the Mexican government to English subjects, of whose rights Mexico could not dispose."

The grant being thus confirmed in the hands of the new holders, Mr. P. A. Hargous, a citizen of Pennsylvania, became the purchaser of it, and associated with himself in the enterprise, a company of citizens of New Orleans. Before committing themselves further, the company, which is now the "Tehuantepec Company," were desirous of ascertaining the feelings and disposition of the Mexican Government, and through the medium of our Minister, Mr. Letcher, made known their desire to commence the work, and at the same time to submit overtures for a treaty of joint protection. The Mexican government made not the slightest objection, did not suggest a doubt of the rights of the Company, forwarded passports for their engineers and officers, and issued orders to the departments of Jajaca and Vera Cruz, to avoid interposing any obstacles to their work, but on the contrary, to afford them aid and hospitality.

This occurred in April, 1850, when the engineers commenced the work of re-surveying, and over one hundred thousand dollars have already been expended in this undertaking.

But recently, a change seems to have taken place in the public feeling of Mexico. Whether it arises from the operation of foreign influences, or whether it may be attributed to the antipathies engendered against the people of the United States by the late war, is a question we will not stop to discuss. The Mexican Congress has declared "that the decree of Gen. Salas, of November, 1846, was null and void, because he had no power to make such decree." We can only regard this as a subterfuge, since the other acts and decrees of Salas have been uniformly, by the executive, legislative, and judicial authorities of that country, recognized as legitimate, and cited as the fundamental law of the land.

The government of Salas was a government *de facto*; and our country, in its relations with others,

never undertakes to determine whether the parties found in possession of the sovereignty are rightfully entitled to it, but treats with them as having the undoubted authority to act, and to bind the country whose destinies are at the moment under their control.

This very decree of Salas, too, has been repeatedly recognized by the Mexican government as binding; so that the present pretext is exceedingly shallow.

It is to be hoped that there is sufficient sense of national honor and justice in the Mexican people, to reverse this late decision of their Congress, and thus enable the parties interested to resume the enjoyment of their rights.

For the American Railroad Journal.

Cincinnati and Seaboard Railways.—No. II. H. V. POOR, Esq.

Sir,—In our last we pointed out the probable lengths of the *four* main routes for railways from Cincinnati to Philadelphia, which have lately obtained the most prominence, from their position, and the progress of events.

Three of these abut on the Central Pennsylvania railroad, as their trunk, and but *one* upon the Baltimore and Ohio railroad. Nature, and the wise and prudent policy of the city of Baltimore, having always confined their main line west, to a single route, which has been uniformly promoted and pursued, by the enterprising merchants of that place, with a consistent pertinacity worthy of the highest success, and destined ultimately to attain it, despite the adverse legislation which has forced them to turn aside for a time, and compelled them to strike the Ohio river by a divergent railroad, which will nevertheless be a most important feeder to their main line, now and ever directed upon Parkersburg.

This divergent line (the route to Wheeling, now pressed forward with a most magnanimous energy) induced the projection of an important railroad line, thence to the political capital of Ohio.

This line, the *Central Ohio*, which since the adverse vote of Belmont county, has been regarded dead, by friends and foes, is now again manifesting symptoms of vitality, which may eventuate in its construction, ultimately, whenever the condition of financial affairs favors the introduction of its bonds into the money market.

From the Central Ohio line spring several modifications of the main routes west, the effect of which comes now to be considered in continuation of the main routes named.

5.—*Philadelphia*, via the Pennsylvania railroad to Greensburg; the Hempfield railroad to Wheeling; the Central Ohio railroad to Zanesville; the Zanesville and Circleville railroad to the mouth of Tods Fork on the Little Miami; and by the Little Miami railroad to Cincinnati.—Total distance, 646 miles.

6.—*Philadelphia*, via the Pennsylvania railroad to Greensburg; the Hempfield railroad to Wheeling; the Central Ohio railroad to Columbus; the Columbus and Xenia railroad to Xenia, on the Little Miami; and by the Little Miami railroad to Cincinnati.—Total distance, 664 miles.

7.—*Philadelphia*, via the Baltimore and Wilmington railroad to Baltimore; the Baltimore and Ohio railroad to Wheeling; the Central Ohio railroad to Zanesville; the Zanesville and Circleville railroad to the mouth of Tods Fork, on the Little Miami; and by the Little Miami railroad to Cincinnati.—Total distance, 722 miles.

8.—*Philadelphia*, via the Baltimore and Wil-

lington railroad to Baltimore; the Baltimore and Ohio railroad to Wheeling; the Central Ohio railroad to Columbus; the Columbus and Xenia railroad to Xenia, on the Little Miami; and by the Little Miami railroad to Cincinnati.—Total distance, 740 miles.

To these must be added the route from Pittsburgh through Steubenville, by the Pittsburgh and Steubenville railroad, (organized August 21, 1851,) and by the entire length of the Steubenville and Indiana railroad, (to be let October 1, 1851.)

9.—*Philadelphia*, via the Pennsylvania railroad to Pittsburgh; the Pittsburgh and Steubenville railroad to Steubenville; the Steubenville and Indiana railroad to Newark; the Central Ohio railroad to Columbus; the Columbus and Xenia railroad to Xenia, on the Little Miami; and by the Little Miami railroad to Cincinnati.—Total distance, 657 miles.

It will now be seen that of all these main lines and modifications, the Pennsylvania railroad is the trunk of *six*, and the Baltimore and Ohio railroad of only *three*, two of which are very indirect.

It will be also seen, that every one of these lines enters the city of Cincinnati, by the Little Miami railroad, and this fact alone indicates the vast importance of that successful thoroughfare.

These main routes and modifications, *nine* in number, are, it is believed, all which have yet been seriously projected in any direct line, from the Seaboard to Cincinnati, or the completion of which comes within the range of ordinary probability at a proximate day.

Even of these combinations it is exceedingly doubtful whether all will be directly undertaken.

For instance, several of them depend upon the cut off line from Zanesville through Circleville, to the mouth of Tods Fork on the Little Miami, by which about 18 miles of distance may be saved, but which involves the construction of 128 miles of new railroad, and its after operation in the face of a competition with the Xenia line, now well supported by the Lake trade and travel, and directed by a superior intelligence, which would render it no common rival.

Again the Hempfield railroad promises to Philadelphia a saving of Cincinnati distance, which can better be effected by a modification of the Steubenville and Indiana railroad, in Ohio.

The length of that line (the Hempfield,) in these comparisons, has been assumed in advance of the surveys at 80 miles, (three miles less than Mr. Knight's reconnaissance) and though that distance may possibly be shortened to 78, or even 75 miles, by the skilful engineer who has it in charge; still the line from Philadelphia to Cincinnati, through Pittsburgh and Steubenville, will, under any circumstances, be as short as any line through Wheeling—while it will have the advantage of using the entire length of the Pennsylvania railroad, and of passing through Pittsburgh, that great point of concentration, whose business alone would compensate for a detour of many miles, if any such circuit were necessary, which, however, is fortunately obviated entirely by the "*grand diagonal line*," to which your attention has been invoked.

As the construction of the Hempfield railroad depends upon Philadelphia capital, it is not likely, therefore, to be built at this time.

It must show better claims upon Philadelphia, than a mere link of a through line to Cincinnati, (now superseded by a better) before it can hope for any efficient pecuniary aid from that quarter.

And such, the writer learns, were the assurances

recently received in Philadelphia, by the Pittsburgh committee of the Steubenville road.

Philadelphia will *favor* all connexions with her main trunk line, but she will *aid* none that do not promise direct contributions to the success of her own main route, and to the promotion of her commercial prosperity, without abandoning the important point of Pittsburgh, to which she is bound by so many, and such powerful business ties.

Another most important question connected with these Cincinnati and Seaboard railways, a question of much greater consequence than any possible saving, or effect of a few miles of distance, remains yet to be discussed.

It is the *question of the gauges*, to which, if you can spare us the space in your valuable journal, we shall devote a future number.

DIAGONAL.

Eagle Harbor Mines.

In our last number we gave some account of the Copper Harbor mines. We now propose to give a very brief sketch of some of the mines in Eagle Harbor district. Eagle Harbor may be considered as the second harbor of importance in the copper region. It is situated about sixteen miles to the westward of Copper Harbor, and is described as a lovely and romantic place. The encouraging appearance of the mines there has given an impetus to the growth of the place, and it is becoming quite a flourishing and prosperous village.

One of the most important mines in this district is the North West, five miles from Eagle Harbor. There are no less than five distinct and well defined veins in the space of a few hundred yards; and it is not improbable that all may ultimately be found to converge and form a single lode of great power. Four shafts have been sunk in the principal vein to the depth of 80, 236, 242 and 272 feet respectively. An adit level has been driven into the cliff 720 feet, a ten fathom level 607 feet, 20 fathom level 690 feet, and 30 fathom level 300 feet. Some idea of the richness of the lodes may be formed from the fact that the company had shipped this year, previous to the 1st of July, about 100 tons in masses and barrel work, and expect to ship as much more before the close of navigation. The masses become larger as they go down, and the vein varies from one to two and a half feet in thickness.

It may not perhaps be recollected by our readers that this mine was worked in the commencement of the business on Lake Superior, and then abandoned; and even no more than two years ago, success seemed to many of the stockholders extremely doubtful. Many of the other mines, which now present no favorable indications, may doubtless in due time, by a judicious expenditure of capital, be made to produce like favorable results.

This company have about 60 acres of excellent farming land under improvement; and besides stores, warehouses, barns, stamps and saw-mill, they have twenty-five respectable dwelling houses, occupied by as many families, altogether forming quite a village. A mining engine of thirty-three horse power, for raising copper and for pumping, has lately been constructed for them in Pittsburgh, and is now on the way to the mine. In a few weeks it is expected to be in operation, thus enabling them to carry forward their mining work far more extensively and profitably.

Some six miles further to the west is another promising vein. Operations were commenced here about a year ago, under the superintendence of

John Stinson, Esq., and the work has been prosecuted with energy. Four shafts have been sunk to a depth of 115, 133, 88 and 60 feet respectively, below the surface. An adit level has been driven in on the vein 629 feet, and at the foot of No. 2 shaft, a ten fathom level has been commenced. Mr. S. has employed eighteen miners and as many surface men. An engine for stamping and pumping has been ordered from Pittsburgh, and is expected to be put in operation this season. Fifteen acres of land are under cultivation.

Some two miles from this mine, and about two and a half miles from Eagle Harbor, is the Copper Falls mine. Work was commenced here five years ago under flattering auspices, and for a time the operations were attended with good success. A mass of ore, weighing twelve tons, was taken from this vein. But after working the mine for three years or more, with constantly waning success, the active operations were abandoned in 1849. Last fall, however, the company employed Hon. S. W. Hill, an eminent geologist and mineralogist, to make further examinations and explorations of the locality. Mr. H. soon had the satisfaction to discover a beautiful vein, a short distance to the west of the old works, and higher up the ridge. The company recommenced operations last spring, and have now in their employ thirty miners and fifteen surface men; and judging from the indications at every point where they have broken into the vein, there is every reason to believe that their operations will be attended with good success.

There are some other companies in the neighborhood, the Winthrop and the Dana mining companies; but their operations have been somewhat limited, and we have seen no definite account of their progress. We shall endeavor to keep our readers advised of all movements of interest in this great copper mining region, as fast as we receive reliable accounts.

On the Manufacture of Iron for Railroads.

We published, a few weeks since, an abstract of an article in the Journal of the Franklin Institute, for July, by H. L. Damsel, Esq., on the comparative qualities of the metal employed in the construction of railroads. The August number of that publication has come to hand, containing some additional remarks on the subject, from the same author, the substance of which we subjoin.

Various attempts and experiments have been made to remedy the tendency of best iron to laminate. An ingenious apparatus has been patented in this country, and also in England, for twisting the rail bar, while it is in the course of manufacturing. By means of powerful machinery the bar is twisted while in its rough state, until the fibres of metal encircle the rail instead of lying in a direction parallel with its axis. But it is found that the twisting of the bar alone is insufficient to retard the laminating process, while the fibrous character of the metal still exists.

An English manufacturer has patented a process for manufacturing what appears to be a near approach to an anti-laminating rail. His plan is to construct the upper or wearing part of the rail, from puddled charcoal iron in the unwrought state, and the lower part from the iron ordinarily used in manufacturing rails. This arrangement materially reduces the formation of fibre; yet the high price at which these rails have been sold in England, has hitherto limited their employment to a few isolated experiments on some of the leading railways in that country.

To discover means whereby wrought rails might be rolled from common metal, and yet be free from the laminated structure attendant on its employment, experimental trials were made with rails rolled from variously constructed piles, built up of common puddled iron, with and without the admixture of superior qualities. This was done with the view of ascertaining if the present system of piling could not be advantageously altered for one which, with little or no additional expense in the manufacturing over that now incurred, would result in the production of a perfectly non-laminating rail. The object aimed at, therefore, was one which, if attained, would be of incalculable benefit to railroad companies.

The plan usually adopted, is to arrange the bars whether these are of mill or puddled iron, side by side, and one on the other, till a pile is built of the required dimensions. By thus arranging them, the grain or fibre of all the bars runs in the same direction—longitudinally. This parallelism is maintained in the subsequent process of rolling when the pile is distended from its original length of about 3 feet, into a finished rail of from 24 to 26 feet long, but is reduced laterally and vertically from 7 inches wide and 9 inches high, equal to 63 sectional inches to a bar, averaging, perhaps, 6 square inches. The fibres of metal are thus distended longitudinally to 9 times their original length, and to meet this elongation, they are compressed into one-ninth of their original sectional area. The fibrous character of the metal continues and is multiplied at each successive rolling, until, as is not unfrequently the case at iron works, it is no longer available for manufacturing purposes.

The remedy which Mr. Damsel proposed for this prevailing tendency to laminate, consequent on the disposition of the plates or bars in parallel layers was to withdraw a few of the long bars which ran the whole length of the pile, and replace them with a number of short ones which were to be laid crosswise to the others, and whose length would consequently be equal to the breadth of the pile.

The first piles constructed on this plan were wholly composed of puddled iron disposed in parallel layers, with the exception of the two upper layers, which were of the best metal. The top layer of best metal was of the usual length, and was placed along the pile in the usual manner, but the one under it resting on the puddled bars, was composed of short pieces laid across the pile, with their grain or fibre at right angles with that of the others.

Apparently, this simple alteration in the disposition of the bars of metal composing the unwrought pile, could not affect the structural arrangement of the manufactured bar, but in reality it occasioned a most important change. The rails rolled from these piles were placed on cast iron blocks, standing 3 feet apart, and broken by blows from a heavy ram falling freely between fixed guides. The appearances presented by the fractured ends were very different from anything previously observed in rails. For a depth of full half an inch from the surface, the fractured metal presented the crystalline appearance of fine white cast iron, while the remainder of the rail exhibited the usual coarse fibrous character commonly observed in rail iron. Yet, although the contact between the two metals was striking in the extreme, the line of junction was indiscernible, and the union of the two qualities appeared to have been effected in the most solid manner.

The alteration thus effected in the structure of the metal by the single layer laid across the pile, led to further experiments on piles with two cross-laid layers, having a thickness of long bars between them; and in subsequent experiments the number was increased till every alternate layer was thus disposed. The effect of a second cross layer of best iron was to double the depth of the fine crystalline metal, but when this second layer was of puddled iron, the metal, when broken, appeared to be formed of large crystals not unlike coarse white pig iron. The metal in the bars rolled from piles built up with layers laid alternately along and across the pile, could scarcely be distinguished in its appearances from cast metal, so great had been the change which the altered mode of piling had effected in the structural arrangement of the iron.

By placing a cross layer of short bars at the head and foot of the pile, the rail when broken exhibited the crystalline structure at the top and bottom, with a centre mass of fibrous metal, and on placing cross layers in the middle of the pile only, the rail was found fibrous at both top and bottom, but crystalline in the middle. It is possible, therefore, to produce rails with non-fibrous metal in any desired proportion, and occupying any desired position.

The experiments on the conversion of fibrous into crystalline iron at pleasure, by merely altering the system of piling, satisfactorily demonstrated that, by disposing a moiety of the bars across, instead of along the pile, as was heretofore the universal practice, a rail perfectly void of lamina could be manufactured from highly fibrous metal. The additional expense from using the short cross bars over that incurred in the usual way, amounted to about ten cents per ton on the rails experimented upon; but in the event of the plan being generally adopted, as it is presumed it will be, there being no patent right to contend with, the additional expense from the extra labor in shearing, will probably not exceed three or four cents per ton.

These experiments developed the fact that the existence of fibre is caused by the rolling being in one continuous direction; and therefore fibre may be produced in any required direction, or if it is desired to have iron free from lamina and equally strong in every direction, it is only necessary to roll the bars alternately at right angles with the former axis. This is an important discovery in iron manufacture. By its application, the surface or even the entire depth of rail bars is hardened so that abrasion from the sliding of the rolling and working stock is reduced, and the rigidity of the rail is increased. The simplicity of the remedy, the facility with which it may be managed, and the unerring certainty that the metal so worked will be devoid of lamina, must eventually, we think, secure its introduction into iron works generally.

"Apart from the great advantage of a non-laminating metal, the rails prepared under this plan of cross-piling, displayed qualities which rendered them peculiarly valuable for railway purposes.—When tested by a heavy weight falling freely on them from a height of fourteen feet, the indentation occasioned by the impact was very much less than that on rails manufactured in the usual way; and tested by supporting them at the ends, and suspending a weight of two tons for a few minutes on their centre, the permanent deflexion was also found greatly in favor of the cross-piling. The mechanical action of the rolls in neutralizing the previous fibrous structure, appears to have condensed the particles of metal, and to have violently expelled the cinder and other extraneous matter with which it was combined. The increased rigidity appears also to have resulted from the increased density of the metal in the upper portion of the bar, offering a greater resisting medium to compression.

This neutralizing the tendency of bar iron to resolve into the fibrous structure, is partially understood in the manufacture of boiler plate and sheet iron. The plan followed in these factories consists in alternately presenting the end and side of the plate to the action of the rolls, whereby the expansion of the metal is equal in each direction; but this procedure, though well adapted to neutralize the formation of fibre when the object operated on is a plain iron plate, is inapplicable in the case of rails by reason of their angular section and great length—circumstances which render it essentially necessary that their movements be in the same plane.

The beneficial application of the principle of cross-piling is not limited to the manufacture of non-laminating rails; it may be advantageously extended to various descriptions of wrought iron for engineering and building purposes, where a partial or total absence of lamina is desired. In the manufacture of wheel tyres it will be found especially valuable; in manufacturing, roofing and other iron, it may be used with considerable economy of materials; its qualities of rigidity and tenacity combined, will render it of essential service to ship builders; to steam boiler makers and others,

requiring angle iron possessing a tenacity equal in every direction, it must prove of great importance; while the facility with which the rigidity and hardness of cast iron can be communicated to wrought iron without impairing its tenacity, will doubtless ensure its extensive adoption in the manufacture of malleable iron frames for the engines of ocean-going steamers."

The Marine Steam Force of Great Britain.

Great Britain possesses one hundred and forty-seven steam-ships, including three in Canada, and thirty-two iron steamers, eleven ranging from 1,547 to 1,980 tons. Of these, four were formerly 76-gun ships, and have now engines of 450 horse-power. The largest, the *Simoom*, of 1,980, has only 350 horse-power; the *Terrible*, however, of 1,850, has engines of 800 horse-power; the *Termagant*, of 1,547, has engines of 620 horse-power; while the *Arrogant*, of 1,872, has only 360 horse-power; the *Retribution*, of 1,641, has 400 horse-power. One of the above eleven, the *Penelope*, was a 46-gun frigate. Fifteen from above 1,200 and under 1,500 tons, twenty-seven above 1,000 and under 1,200, twenty-three above 700 and under 1,000, nine above 500 and under 700, twenty-seven from 250 and under 500, twenty-two from 150 and under 250, four from 42 to 149; three on the lakes of Canada, one of 406 and of 90 horse-power, and one of 750 and of 200 horse-power; twelve packets, 237 to 720, some of which are very fine vessels; 58,643 in commission, and 58,501 tons in ordinary. Of the steamships, there are built of iron—the *Simoom*, 1,984; the *Vulture*, 1,764, both 350 horse-power; the *Greenock*, 1,418, and 550 horse-power; the *Birkenhead*, 1,405, and 500 horse-power; the *Niagara*, 1,395 and 350 horse-power; the *Trident*, 850, and 350 horse-power; the *Antelope*, 650, and 261 horse-power; the packet *Lizard*, 340, and 150 horse-power; the *Blouhound*, 378, and 150 horse-power; the *Grappler*, 557, and 220 horse-power; the *Sharpshooter*, 503 and 202 horse-power; the *Harpy*, 344, and 200 horse-power; the *Myrmidon*, about 350, and 180 horse-power; the *Sphinx* and *Fairy*, about 300, and 110 horse-power; and four other smaller vessels, of 20 to 9 horse-power. Six of the packets are built of iron. Screw-steamers on the stocks, viz., one 80-gun at D. vonpout, one 80-gun at Woolwich, and one 80-gun at Pembroke; in all, one hundred and fifty steamships. Then there is the mercantile steam power. The steam vessels registered in the port of London on the 1st of January, 1851, were three hundred and thirty-three; one hundred and seventeen under 100 tons, sixty-four from 100 to 200, twenty-six from 200 to 250, twenty-seven from 250 to 300, sixteen from 300 to 350, nine from 350 to 400, ten from 400 to 450, eight from 450 to 500, three from 500 to 550, seven from 550 to 600, three from 600 to 650, six from 650 to 700, two from 700 to 750, five from 750 to 800, three from 850 to 900, one from 900 to 950, eight from 1,000 to 1,500, six from 1,500 to 1,800, eleven from 1,800 to 2,000, and one above 2,000 tons. In Liverpool there were ninety-two steam vessels; twenty under 100 tons, 49 from 100 to 200, twelve from 200 to 400, six from 400 to 600, three from 600 to 800, one of 1,300 tons, and one of 1,609 tons. At Bristol there were thirty-one steam vessels; eleven under 100 tons, fourteen above 100 tons and under 300, three from 300 to 500, two from 500 to 600, one (Great Britain) of 2,936. At Hull there were thirty-four steam vessels; eight under 100 tons, seven from 100 to 200 tons, eight from 200 to 400, eight from 400 to 700, two from 700 to 1,000, and one of 1,320 tons. At Shields there were fifty steam vessels; forty-eight under 100 tons, one of 388, and one of 10 tons. At Sunderland there were thirty-two steam vessels under 100 tons. At Newcastle-upon-Tyne there were one hundred and thirty-eight steam vessels; one hundred and thirty under 100 tons, six from 100 to 300, two from 300 to 500. At Southampton there were twenty-three steam vessels; nine under 100 tons, nine from 100 to 300, five from 300 to 500. At Glasgow there were eighty-eight steam vessels; fourteen under 100 tons, forty-eight from 100 to 300, sixteen from 300 to 700, three from 700 to 1,000, five from 1,000 to 2,000, two from 2,000 to 2,500. At Leith there were twenty-three steam vessels; eight under 100 tons, twelve from 100 to 500 tons, three from 500 to 1,000 tons. At Aberdeen there were sixteen steam vessels; three under 100 tons,

four from 100 to 300, three from 300 to 600, five from 600 to 1,000, and one of 1,117 tons. At Dublin there were forty-four steam vessels; three under 100 tons, fifteen from 100 to 300, thirteen from 300 to 500, thirteen from 500 to 800 tons. At Dundee there were ten steam vessels; five under 100 tons, two from 100 to 300, three from 500 to 800. At other ports there were two hundred and seventy steam vessels; one hundred and thirty-nine under 100 tons, sixty-one above 100 tons and under 250, forty-five from 250 to 500, twenty-two from 500 to 750, and three from 750 to 1,000.

National Scientific Convention at Albany.

The annual meeting of the American Association for the Advancement of Science was held this year at Albany, commencing on Monday, August 18th. Prof. Louis Agassiz was chosen President. Among the distinguished gentlemen present, we notice the names of Prof. O. M. Mitchell of Cincinnati, Prof. Alex. D. Bache, Supt. U. S. Coast Survey, Lieut. C. H. Davis, U.S.N., Superintendent of the Nautical Almanac, Com. Wilkes of the Exploring Expedition, Prof. Joseph Henry of Washington, Prof. Loomis of the New York University, Prof. Renwick of Columbia College, Prof. Olmsted of New Haven, Prof. Gillespie of Union College, and Wm. Mitchell, Esq., of Nantucket, the Astronomer, accompanied by his daughter, Miss Maria Mitchell, who recently received a gold medal from the King of Prussia for her own astronomical discoveries.

An interesting description of samples of ancient cloth found in the mounds of Ohio, formed the contents of a paper presented by J. W. Foster, U. S. Geologist. Mr. F. said that as long ago as the year 1838, he had received from a person residing in Charlestown, Jackson county, Ohio, several fragments of cloth which had been taken a few days previously from a mound in the vicinity. When found, they enveloped several sets of copper rings, and were most of them much decayed. He hesitated about making the matter public, for fear that it would lead to erroneous opinions, as it was at variance with the prevailing ideas of the degree of civilization and knowledge of the arts among the mound builders. But he has recently come into possession of additional and corroborative evidence. Within the last six weeks he had received from Mr. John Woods, a gentleman who occupies a high official station in Ohio, additional samples, accompanied by a description of the circumstances under which they were found. In grading the track for the Cincinnati, Hamilton and Dayton railroad, it was found necessary to cut away one side of a mound on the west side of the Great Miami river, in Madison township, Butler county, Ohio. This mound is about two miles north of Middletown. Its height was from 16 to 20 feet, and according to the old settlers, it was covered 50 years ago with large forest trees. The workmen, in digging away the side of the mound, found an arrow, and a considerable quantity of cloth and bones. The workmen said they had found pieces of cloth connected with tassels or ornaments of cloth. The cloth was frequently in thick folds, half a dozen thicknesses being together.

It seems pretty certain that the cloth must have been made, and the mounds built, by a race of people anterior to the North American Indians. There is no evidence, said Mr. Foster, that the Indians possessed the art of spinning and weaving, when first known to the white man. An art so conducive to the comfort and convenience of man, when once acquired would not become lost; and the appearance of the cloth, the material of which it is

composed, and the mode of its fabrication, preclude the idea of its being European fabric, obtained by the Indians. The texture of some of these samples could not have been formed in an ordinary loom, but is undoubtedly the result of handwork.

These facts have an important bearing on the Ethnology of the people by whom the mounds were built. They indicate a higher degree of civilization, and a greater progress in the arts, than had been attained by the Indians when first known to the white man. They go far to disprove the present race of Indians from the mound builders—a laborious and intelligent people, who have left abundant memorials of their existence from the confines of Lake Superior to those of the Gulf of Mexico.

The fabric in both samples appears to be composed of some material allied to hemp, but less readily recognised in the charred samples than in the others, and the separation between the fibre and the wood appears to have been as thorough and effectual as is accomplished at this day by the processes of rotting and heckling. The thread, though coarse, is uniform in size and regularly spun. The texture in the specimens from Jackson county as well as in some of those from Butler county, is formed by the alternate intersection of the warp and woof; but in others from Butler county, the woof is wound once around the warp—a process which could not be accomplished, except by hand.

There is no reason to doubt that these textile fabrics are the work of the mound builders. The art of spinning and weaving was practised by the Peruvians when their country was first invaded by the Spaniards, and samples of cloth and the distaff on which the thread was spun, are associated with the oldest monuments. At Pachacamac, 30 or 40 miles from Lima, where stands the Temple of the Sun, there are numerous remains of walls built of sun-dried bricks, indicating the site of a once large and populous town. In the burial grounds are found numerous mummies in a sitting posture, wrapped in many folds of cloth, with an exterior covering of coarse matting. It is composed of a regular warp and woof, the thread being twisted or spun, and is often wrought in variegated patterns. The fabric consists of the wool of the lama or alpaca, and perhaps in some instances of cotton, which grows there spontaneously. Spindles have also been found in this connection, with yarn upon them; also articles of pottery, filled with corn, and various other utensils.

A paper was presented by Prof. E. N. Horsford, on the permeability of metals to mercury.

Daniel observed that bars of lead, tin, and zinc, became penetrated by mercury, when partially or wholly immersed in it. He noticed that a crystallized amalgam was formed in the case of each of the several metals. Prof. Henry modified the experiment of Daniel, in the case of lead, giving to the bar the form of a syphon, one end only of which was immersed in the mercury. He discovered the beautiful fact that mercury may not only be carried through the bar in this form, but that it will drop from the longer division of the bar, thus exhibiting the syphon experiment, employing a solid bar for the tube, and mercury for the liquid.

Prof. Horsford said that he had tried numerous experiments in the study of the laws of this phenomenon. His first object was to ascertain whether the bar when saturated, had increased in specific gravity; but the results were so conflicting, for some reason unknown, that he was unable to say whether the specific gravity remains unchanged,

increase or diminishes, with the addition of mercury.

He also wished to ascertain the velocity of transmission of mercury. Prof. Henry had observed that the progress of mercury in the lead was much more rapid in cast than in hammered lead. Upon noting the progress from day to day, most unexpected results had presented themselves. In a vertical bar, with the mercury at the bottom, the progress is at first rapid. It diminishes in velocity, however, from day to day, until after months, and having reached a height of between six and seven inches, it is not one thousandth as rapid as at the outset. In one instance the velocities were as follows:

In 24 hours it rose.....0.085 mm.
In 24 hours more.....0.010 "
In 16 days more.....0.002 "

To ascertain if this moderate elevation was influenced in any degree by gravitation—several experiments were made.

Mercury was presented at the top of a bar 0.80 m in length. Its descent was astonishingly rapid. In ten hours it had penetrated 360 mm.

The first quantity having all passed into the bar it ceased to flow. Upon the addition of another portion the flow was resumed. In less than two days the mercury dropped from the bottom. This occurred in the night, and the time was not noted.

This observation is of especial importance in its bearing upon the theory of the forces which cause the movement of the mercury.

Gravitation evidently facilitates the transmission of the mercury when flowing from above downward. It, of course, opposes its flow from below upward.

To ascertain the further influence of gravity, a bar about five inches long, saturated with mercury was withdrawn from the cup and suspended. After a time a single drop of mercury oozed from the lower end and fell. Whatever the force that held the mercury in the bar it was not strong enough to retain all of it in opposition to gravity. He mentioned, however, that from several other saturated bars of less length, similarly suspended, no mercury escaped.

It was found upon analyzing the drops which fell from the bar, that they were composed of about 98 per cent. of mercury, and 2 per cent. of lead.

The presence of lead in the mercury, which was observed in the repetition of the syphon experiment, suggested the inquiry as to whether it came from the end of the bar or syphon, or from the interior as well as the end.

In the latter case, the interatomic spaces would be increased, and the mercury under the influence of capillary attraction and gravitation might be expected to flow faster. To ascertain if this was the case, a syphon bar was arranged, and the mercury was suffered to drop for ten days, the quantity being weighed each day. The quantities that flowed through were as follows:—

1st.....	5.4169	6th.....	18.9119
2nd.....	5.7906	7th.....	24.6699
3rd.....	8.6281	8th.....	29.5954
4th.....	11.4976	9th.....	34.6036
5th.....	15.4280	10th.....	40.0357

There could be little doubt that the channels through the lead were increased in diameter, as the quantity of lead that flowed through in a given time was augmented nearly 800 per cent. The slightly changed condition of the end of the bar supported this conclusion.

A drawn bar saturated with mercury became brittle, as Daniel has observed. It was so brittle

as to be readily broken by an effort suddenly to bend it. Such a bar, scraped brightly and laid aside, in a few weeks lost its brittleness and peculiar texture and recovered the properties of the original lead.—It had lost its mercury by evaporation.

Prof. H. had also made experiments with tin, and had found that mercury penetrates tin more rapidly than lead, and exhibits the syphon action. As the bar of tin becomes saturated the whole mass begins to crystallize, and splits into irregular longitudinal fissures. If at an early stage in this crystallization the bar is bent, the outside cracks off revealing a pith as distinct as if it had been at first cast and then a sheath cast around it.

If the crystallization be permitted to go on, the fissures penetrate to the centre of the bar. Daniel observed that a square bar split into triangular prisms, the separating fissures following the diagonal planes. If the top and bottom of the bar were right angled terminal planes, the crystallization freed a pyramid at either extreme.

The bar being irregularly cylindrical, the fissures were formed as in the case of the prism—along the lines of least resistance. In looking at these fissures and the pith just referred to, and at the spararia which abound in the shales of the Genesee Valley, in Livingston County, of which numerous specimens occur in various other widely separated localities, it is impossible to resist the conviction, 1st, that the concentric arrangement in the latter case may have been produced by a process illustrated in the experiment with the tin bar, showing the interior pith, and not necessarily by aggregation, and 2d, that the fissures filled by brown carbonate of lime, giving rise, when water-worn, to the tessellated appearance of the tortoise shell have been formed by expansion along radial lines, producing openings where there was least cohesion.

Extensive Railroad Buildings.

The Galena and Chicago Union railroad company have made arrangements for building forthwith, a short distance west of its present depot, on the north branch of the river, a large round house for locomotives, machine shop and a smith shop. The buildings, together, will require 700,000 brick and 150 cords of stone.

The locomotive house is to be a half circle, with a radius of 90 feet. The walls are to be 20 feet high.

The machine shop is to be 40 by 140 feet, and two stories high. It is to be of ample dimensions for the construction and repairs of the cars and machinery necessary to the operation of the road.

North Carolina.

Extension of the Spartanburgh and Union Railroad.—A meeting was held in Rutherfordton, on the 6th instant, to take into consideration the construction of a railroad from Spartanburgh, S. C., to that place. Gen. N. F. Jones was appointed chairman, and G. N. Baxter, secretary. Col. Simpson Bobo, of Spartanburgh, explained the object of the meeting, and showed the importance of the enterprise to the people of western North Carolina.—Other addresses were delivered. Upwards of ten thousand dollars were subscribed. A committee of five was appointed to solicit subscriptions, and report at an adjourned meeting to be held at the same place on the second Monday of September next. The Mountain Banner, from which we get the above proceedings, says that the South Carolina visitors met with better success than was anticipated, and that \$130,000 more are necessary to ensure the building of the road.

Baltimore.

Our Western Connections.—The straightest and shortest line of railroad from the Atlantic to the Mississippi river at St. Louis, is, as has been demonstrated by the Baltimore and Ohio railroad, to Parkersburg and Cincinnati, and thence through Indiana to St. Louis; and the respective States through which the road passes, have all granted authority to make the road. That from Cincinnati to St. Louis is about to be commenced.

The President of this company advertises in the Cincinnati papers for proposals for making forty-five miles of the road from Cincinnati west. The Commercial learns that a portion of the Illinois division of the line will be immediately put under contract, the surveys having just been completed, and that a further extension of the road from Cincinnati extending to the valley of the east fork of White river, will be put under contract as soon as it can be properly located. This will intersect the Jeffersonville road. Several of the counties in Indiana engage to prepare the road for the superstructure through their respective limits, and take their pay in the stock of the company.

Thus commences the work on the road west of Cincinnati.

The Baltimore and Ohio railroad will be completed by the first of February next to Tygart's Valley bridge, where the Northwestern railroad, that runs to Parkersburg, commences.

We have stated that the company to make the road from Tygart's Valley to Parkersburg had been regularly organized, and that B. H. Latrobe, Esq., had been appointed the chief engineer. We have the gratification of announcing that, with that promptitude of action which marks everything he undertakes, Mr. Latrobe has already organized a full corps of engineers to survey the route of the road, with a view to its location, and that they will in a short time enter upon their work.

The prospects of the company are, as this prompt movement towards locating the road is evidence, most encouraging, and there is no reason to doubt that ample means will be promptly supplied to complete the road at the earliest possible day. The action of our City Council, unanimously pledging the aid of the city corporation to subscribe to the stock of the company, we have every day assurance meets with the hearty approbation of all our citizens, and is but the expression of their individual wishes in regard to the matter.

This is the line of the straight road to St. Louis, and it must be made. That is the conviction, that is the determination of the people of Baltimore.

It has been stated, with some show of boasting, by the Philadelphia North American, that the line of the road from Cincinnati to Parkersburg has been diverted from the straight line, by the determination of the Cincinnati and Belpre company to carry their road to Marietta, which is some three miles above Belpre on the Ohio river, instead of to Belpre; and that thus the Parkersburg road will be thrown off of the connection.

We may not complain that a road is to be made to Marietta, and thence carried up the river to Wheeling, for that road secures to us a better connection with Cincinnati than it can do to any other city on the Atlantic border; but it does not follow, that because the road is to be made to Marietta, it will not also be made to Belpre. We are not to suppose that a policy would prevail in Ohio, which would forbid the extension of the road from Belpre to connect with that to Cincinnati, when that connection would complete the straight line through Parkersburg to Baltimore. We do not suppose anything of that kind. We are sure it would be otherwise. But even if such a policy could control the matter, we are not left without an alternative, which even some, who have fully considered the subject, consider our best policy. The Legislature of Virginia could have, and would have, no objection to authorising the road to be extended down the Ohio river, to connect with the railroads now completed, in Kentucky, and thus give to us a continual line of railroad, without the necessity of crossing the Ohio river, by ferry, to Louisville. By this route, it is true, we pass Cincinnati on this side of the river, but we go down to Louisville, avoiding the falls there, and secure a connection at all seasons, with boats plying on the Mississippi and the lower parts of the Ohio river; and thus

open to us a trade with the south and southwest, for which no other city can advantageously compete with us.

We will not be driven to this alternative; but it is well that we understand we have it.—*Baltimore Patriot.*

Vermont.

Rutland and Burlington Road.—Total cost, June 1, 1851, \$4,343,441 06, of which \$1,697,700 has been realized from common stock, \$348,200 from preferred ditto, and \$1,615,788 25 from bonds, and the remainder exists in notes payable (\$529,952 81) and preferred stock (\$151,800) not taken. The equipment embraces 17 locomotives, 10 passenger cars, 4 baggage ditto, 220 eight wheel box freight cars, 57 ditto platform, 20 four wheel box ditto, and 57 gravel ditto. The gross receipts for the year were \$220 351 13—the current expenses \$127,991 67, less materials on hand \$50,250—balance \$77,741 67. The receipts for the first half of 1851 show a gain of 50 per cent. over those of the same month in 1850.

Illinois.

Peoria and Oquawka Railroad.—We find in a recent number of the Knoxville (Ill.) Journal, a communication from James Knox, Esq., President of the Peoria and Oquawka railroad, which contains some facts not heretofore published, with regard to the progress of the work. It has now been but 6 or 8 weeks since the organization of the company. During this period, as has been already stated, the company have secured the old grade and right of way from Peoria to Farmington. From a recent examination of this grade, it is found to be in a much better condition than was anticipated. Its actual value to the company cannot be less than \$60,000, and may be \$100,000. The services of Col. Morgan, a skillful and experienced engineer have been secured, and the necessary surveys will be made immediately, to prepare for contract the old road to Farmington; he will also make such reconnaissance of the residue of the route as will enable him to make a preliminary report to the Directors. A meeting of the Board will then be held to decide upon further measures; and upon the steps to be taken at that meeting will depend the question whether the road shall be immediately pushed through to a successful termination, or whether its progress shall be delayed by dilatory and tardy measures. Much also depends on the amount of means in the hands of the directors. Aside from the old grade, the assets of the company consist of \$200,000 corporate subscription, and about an equal amount of individual subscription to the stock. Mr. Knox states that if the subscriptions could be increased to \$500,000 before the meeting of the Board, at that meeting measures will undoubtedly be taken for the immediate completion of the road to Farmington. A sum of \$100,000 only is now required to render available and productive the money already expended in the purchase of the old grade; and with this assistance, it is confidently predicted that in six months the road will be in operation to Farmington.

There is a probability of an eastern connection with this road, which will greatly enhance its value. A road from Springfield to Peoria is now being surveyed, with a fair prospect of speedy construction; and an agent of the parties interested in that road was in Peoria a few days since, for the purpose of making arrangements with the Peoria Bridge company for a track across that bridge. It is to be hoped that this enterprise may not be delayed for the want of the necessary means to ensure its progress.

Summer Freight Business on the Rochester and Syracuse Railroad.

We find by referring to the books at the office of the freighting department of this road that the summer business is very large notwithstanding that the canal is carrying forward a largely increased amount of freight. We give the following statistics:—The number of live cattle carried over the road from this city since May, was 1,634; live hogs 4,120; sheep 4,637. The aggregate weight of the whole was 3,318,675 pounds. It is estimated that 6,681,325 pounds have passed on the road from Buffalo eastward, making a total of ten million pounds in three months. Thus it will be seen that the Erie railroad has not taken all the cattle for the supply of the eastern market, even of those that come from the west. The company is having new cars built that will be much better than the old ones for the transportation of cattle, affording the stock much more room and air. We ascertained also, that the road has carried during the same time, from this city and way stations,

396,000	pounds of wool,
119,000	" of leather,
107,000	" domestic woolens,
1,776,000	" 8 mill merchandise.

It will be seen from this that the decrease in the exports of wool by canal—343,953 pounds,—is made up by the greatly increased amount sent per railroad to eastern markets. Last year the amount of wool shipped from here on the road, was 66,365 pounds.

The tolls paid by the company for seven months of the present year were as follows:

January	\$1,119 59
February.....	1,227 61
March.....	2,638 16
April.....	2,811 54
May.....	1,686 31
June.....	953 66
July.....	776 53
	<hr/> \$11,213 50

The amount of tolls paid at Buffalo and Rochester is estimated to be about \$100,000 in six months. An equal amount must have been collected at Albany.

The number of passengers carried over the road during the last three months must show a considerable increase over last year, but we are unable at this time to obtain the figures.

It will be observed that the railroads and canals have their own distinct interests, and the facilities afforded by both are demanded by the public.—*Syracuse Star.*

Ohio.

Central Railroad.—On Thursday last we took a ride up the railroad as far as the "Black Hand," which is some sixteen or seventeen miles from this city. We were pleased to find the road more nearly completed than we had expected. The grading of most of the sections is done, and many of them have already received the ballast, and are now ready for the cross-ties and rails. We were very much surprised at the amount of work which had been done by the Messrs. Taggart & Gormley on section 17. They have cut the track of the road through solid rock, 700 feet in length, and 70 feet deep at the highest point. In cutting through this rock they consumed in blasting about 1,100 or 1,200 kegs of powder, costing some thirty-five hundred dollars. The whole work has been completed in one year from the commencement. The road at the point where the rail will be delivered is ready for its reception, and no time will be lost in laying it down as soon as it may be received.—*Zanesville Courier.*

The Cleveland, Painesville and Ashtabula Railroad.—This work, between Cleveland and Ashtabula, is being carried on towards its completion at a giant's pace. The heavy work at Willoughby is nearly done; and the bridges there and at Painesville are nearly ready for superstructure. In the month of August we are assured, the road will be open to Painesville. The piers at Ashtabula are now going up rapidly—a reinforcement of masons having come on; and the grading westward from the Ashtabula station is pushed on by Mr. Burke, the contractor, at a surprising rate.—*Ashtabula Telegraph.*

Pacific Railroad.

Col. Benton was invited to attend the recent railroad convention at St. Louis, but excused his attendance by a letter, in which he took the ground that the Pacific railroad is the Central route, and every national consideration requires it to be made with the aid of the National Government. He speaks of the contemplated Southern route by way of El Paso, and the superior advantages which would be possessed by the Pacific road. The only obstacle is the Rocky Mountains, and that is a very slight one, as the country rises gradually and imperceptibly, 7 to 8,000 feet before their base is reached and there are then many passes between the head of the Del Norte and the South Pass—between 38 and 42 degrees—very practicable, and already marked out by the buffalo trails. Humboldt and other naturalists had mentioned that these animals were the most unerring guides to road makers; and there were plenty of buffalo paths, where a railroad could be constructed at small expense. Col. B. remarked that he had no doubt the whole road would be eventually made. If not made by the federal government, as it should be, it will be made by piecemeal, by companies and communities. Thus 300 miles in the state of Missouri were already begun at one end; the people of California propose beginning at the other end; and the Mormons propose to make it from the great Salt Lake to the Sierra Nevada. He considered the public lands to be a proper fund for making national roads; and now that they are squandered by the hundred millions of acres in bounties, which go to speculators, the only way to save them from spoliation, and to make them available for present and future public good, is to apply them in mass to this and other great national objects.

He alluded to Whitney's scheme, in which the lands were to be granted to him and his "assigns," and he thought that if an amendment should be inserted, that no member of Congress, nor any near relative of a member, should be an assignee, the project would never be heard of again. He concluded by encouraging them to persevering exertion, which in a good cause is sure to be ultimately attended with success.

European and North American Railroad.

Another large and enthusiastic meeting of the friends of this enterprise, was held in the city of Portland, on the evening of the 19th inst. Hon. J. C. Noyes presided, and Allen Haines officiated as Secretary. The meeting was addressed by John A. Poor, Esq., who gave a concise history of the progress of the project since the last meeting, and of its present condition and prospects. Speeches were also made by John Neal and J. B. Brown, Esqs., of Portland; Judge Chandler, of Calais, and Mr. McGee, of Boston, editor of the American Celt.

Resolutions were unanimously adopted to the effect that in consequence of the geographical position of Nova Scotia and Cape Breton, on the one side, and Ireland on the other, more nearly approximating each other than do any other portions of the continents to which they pertain, within the limits of safe and convenient navigation, this proposed route of communication between the continents, by the European and North American railway, and a line of steamers to Galway, must ever be the shortest, cheapest, and safest route for travel and business, and therefore free of all competition from any other line or route; that, in view of this general character of the European and North

American railway, favorably affecting so greatly as it must, when completed, the intercourse by travel and business between the two continents, it is entitled to encouragement and support from the country generally, by way of subscription to the stock, beyond that of any other like enterprise now making claims therefor, upon the public attention; and that the existing uncertainty in New Brunswick and Nova Scotia, as to the particular mode by which they will construct the portions of the road within their borders, affords no reason to delay the subscription for the completion of that part in Maine, and no reason to doubt that these Provinces will early determine between the several modes now under their consideration, and early enter upon the construction, and prosecute to completion, in full time to run their cars in connection with those on our side of the line, the portion within those Provinces respectively.

Steamers in California.

The first steamer which entered the harbor of San Francisco, was the California, belonging to the Pacific Mail Steamship Company's line. She arrived at that port on the 28th of February, 1849. Since that time about two years and a half have elapsed, and at the present time, twenty-nine ocean steamers are running between San Francisco and the various ports on the Pacific—a number nearly equal to the number sailing out of the port of New York. There are also several more either building for that trade, or on their way there. It is said by those who have recently returned from that region, that the gold in the mines is inexhaustible—that it will last as long as the world stands; and it may therefore be reasonably expected that within a few years steam communication will be opened with the Sandwich Islands and the other important groups of the Pacific, Japan and China, as well as Australia and the adjoining British colonies.

Illinois.

Rock Valley Railroad.—We learn from the Woodstock (Illinois) Democrat, that the above road has been located from the state line at Big Foot, to Woodstock, and from thence to Chicago, on the most practicable route. It is stated that the whole route from Janesville to Chicago will be immediately surveyed, and surveyors are now at work between Big Foot and Woodstock. Mr. Smith, the President of the road, is now on a visit to the East, for the purpose of having the whole route from Janesville to Chicago put under contract, in the hands of responsible and competent contractors.

North Carolina.

The Raleigh and Gaston Road.—The latest intelligence concerning the prospects of resuscitating this road, is, that a public meeting was held in Warrenton on the 12th inst., when after addresses by Weldon N. Edwards, and Gen. Saunders, it was ascertained that the subscription in Warren county amounted to 394 shares, or \$39,400. This leaves over ten thousand dollars of the sum expected from this county, still to be raised.

By a card of Gen. Saunders', dated Aug. 13th, and published in the last Standard, it appears that stock to the amount of nearly three hundred thousand dollars had been taken, and that the executive committee were assured that the subscriptions would certainly reach that amount. With the view of raising the remaining hundred thousand dollars, necessary to secure the charter, the committee recommend that subscription books be opened, with the understanding that the subscribers to this portion of the stock can be relieved, in whole or in part, should they desire it, in the purchase of the iron, for which, as the committee are advised, a favorable contract can be made.

The committee also recommend a general meet-

ing, to be held at Warrenton, on Friday the 12th September next, for the organization of the company, believing that the whole stock, by that period, will have been subscribed.—*Wilmington Herald.*

Ohio.

Cincinnati and Marietta Railroad.

Important Accession to Railroad Stock.—The board of directors of the Belpre and Cincinnati railroad company, on the 12th inst., accepted the following subscriptions to the capital stock of the company, viz.:—

Washington county, Ohio.....	\$200,000
Town of Marietta, Ohio.....	100,000
Town of Harmar.....	50,000

Amount.....\$350,000

The Scioto Gazette also states that the directors have established a point in their eastern line, on the farm of David Jones, Elk township, Vinton county, three miles east of McArthur. They also adopted an order, obligating the company to make a switch, or branch road, to McArthur, from their main line, in case the latter pass on the surveyed route 2½ miles south of that town;—and on condition that the contemplated subscription of \$100,000 be made by the county of Vinton to the capital stock of the railroad company.

Ohio.

Cincinnati, Wilmington and Zanesville Railroad.

—Three parties of engineers are now engaged in the survey of this line preliminary to its location. The line has been divided into three divisions, the first extending from Morrow, the point of intersection with the Little Miami Road, to Washington in Fayette county; the second from the latter point to Lancaster, and the third thence to Zanesville. It is expected that the line as far eastward as Lancaster, and perhaps to Rush creek, a distance of about ninety miles, will be ready for contract by Christmas.

Illinois.

Central Railroad.—One line of the survey upon the second division (under charge of Chas. Floyd Jones) of the Central railroad, leading from Decatur to the baseline, has already been run, and the engineers are engaged in making out the estimates. This is very nearly an air line, and about 76 miles in length. Other examinations will doubtless be made; but it is thought that the present line will be adopted with but little variation.

Virginia.

The work on the Orange and Alexandria and Manassas Gap railroads is going on with spirit and energy. We do not know, says the Alexandria Gazette, two works in the country which have been more fortunate than these, in the selection of their officers and engineers. They devote themselves to their tasks with a zeal and determination which makes itself felt in all the operations of the companies.

Illinois.

Peoria and Oquawka Railroad.—The survey of the Peoria and Oquawka railroad will be commenced next week, under the direction of Col. Morgan, formerly of the Galena and Chicago road. Col. Morgan ranks among the first civil engineers of this country, and has had great experience on the most important public works in the Eastern and Western States.—*Peoria Dem. Press.*

Alton and Sangamon Railroad.—Mr. Shipman, the engineer of the Alton and Springfield road, was in town last week. Mr. S. informs us that he will have by next Saturday completed the preliminary survey of the Bloomington and Peoria branch.—The principal line runs north from Springfield about thirty-five miles and crossing Sugar creek,

the Bloomington branch will run on the divide between Sugar creek and the Kickapoo, while the Peoria branch will come up on a line almost north and south. The road will be in running order as far as Springfield next December, and the branch to Peoria will be pushed on vigorously.—*Ibid.*

Ohio.

Toledo, Norwalk and Cleveland Railroad.—This road is now all under contract, and it is determined not to open it to the public until it is completely ballasted. The contractors have heretofore been engaged on the Eastern roads, and have on hand every appliance for putting a large force upon the work. The iron will be laid down on the Western section of the road during the coming winter and spring, and on the residue of the line as fast as the work progresses.

Massachusetts.

Lexington Railroad.—The following is the list of directors of this road for the present year, viz.:—Charles Hudson, James Dana, S. S. Littlehale, D. Farnsworth, N. Howe, Samuel Butterfield, Addison Gage. Hon. Charles Hudson was chosen President, and Wm. Stevens, Clerk and Treasurer.

It appeared from the annual report of the Directors that the whole income of the company last year was \$9,724 39, and that the increase of profits was equal to 44 per cent.

Railroad Law.

Important Decision.—At the late term of the Superior Court of New Hampshire, in the case of *Elkins vs. Boston and Maine railroad*, it was decided that railroads are not common carriers of goods and merchandise by their passenger trains, unless they expressly hold themselves out as such, and evidence that the railroad two or three times carried goods by such trains, does not subject them to this liability. Goods sent by such trains, are at the risk of the owners.

The Schuylkill Inclined Plane.

The Harrisburg (Pennsylvania) American, contains an estimate, from which it appears that the appropriation by the legislature of that state in 1849, of \$400,000, to avoid the inclined plane, was not only no expense, but a clear gain. This loan of \$400,000 was at an interest of six per cent., redeemable in thirty years.

The old road rendered useless by the avoidance, was directed to be sold, and was purchased for \$243,000. The cost of avoiding the plane was therefore, \$157,000. The 243,000 were, as directed by law, applied to the improvement of the Columbia railway, and an expenditure by the state of that amount, at some subsequent period, was rendered unnecessary by the proceeds of the sale of the old work. The plane when in operation, was kept up at the annual expense of \$31,000. The interest on \$400,000 at six per cent. is \$24,000—showing an annual saving to the state of \$7,000. This surplus together with its accumulation of interest, is directed to be invested annually in this loan, or any other loan of the commonwealth, if it can be purchased at its fair value. The annual surplus then being \$7000, and the loan redeemable in thirty years, it is evident the total saving in thirty years will be \$210,000, or \$53,000 more than the clear actual cost of the road to avoid the plane! to say nothing of the increased capacity of the road, its vastly increased business, and the largely increased tolls which have been received, all of which have been caused by the greatly improved condition of this branch of the public works. This loan, instead of being a burden to the people, and taking money out

of the treasury, is putting money into it, and may therefore be considered a profitable investment.

American Railroad Journal.

Saturday, August 30, 1851.

To Delinquent Subscribers.

We have recently forwarded a large number of Bills to our Subscribers who are in arrears, requesting them to forward the amount due, by Mail, at our risk. Our subscribers are scattered all over the country; and as we cannot well send a Collector to each, we think we may, with propriety, request them to take the trouble to forward the amount due at our risk. Some of our leading Railroads and Engineers owe us for subscription for years. We expect that such subscribers, when called upon, will promptly forward us the amount due.

Routes Across the Isthmus.

There can be no doubt that the Panama and Nicaragua companies which are located in this city, will do what they can to prevent the settlement of the difficulties in which the Tehuantepec company is now involved. The success of the latter, must render the privileges of the two former valueless; and as they have already—particularly the Panama railroad company—expended enormous sums on their works in progress, which must eventuate in a great, if not in a total loss, with the success of their rival, they will do all they can to defeat it. The extent of the influence of these companies we can hardly over-estimate, as they are possessed of abundant means, and their members occupy very commanding positions in society. The Tehuantepec company has more to fear from their opposition, than from all other causes. We have good reason for believing that attempts have been made, and will be made, to prevent our government from sustaining the claims of the latter company.

All these facts should be fully known. There can be no doubt whatever, that the Tehuantepec route is the best one for the commerce of the country, and for New York, as the centre of this commerce.—No city in the United States can flourish without conferring an immediate and substantial benefit upon this city. Our position is such that we have no rivals, and no work of magnitude can be projected on this continent, that would not be a positive advantage to us.

One great superiority of the Tehuantepec route over the other two, is in the saving of 2,000, or 3,000 miles in distance, and in reducing to this extent the journey to be performed by water. The saving in time in going to California would be at least from eight to ten days. But this would be but a small part of the advantage of this route.—The great cause of the sickness so prevalent upon the Panama route, is the sudden change of temperature which the traveller must undergo in running from a high northern latitude to the region of the equator. This change from a cold to an exceedingly hot climate, reduces the constitution so much, that a person falls an easy prey to the pestilential climate of Chagres and Panama. By adopting the Tehuantepec route, all these evils would be avoided, as will be readily seen without further remark.

So apparent are these advantages, that we have heard one of the leading members of the Panama company admit that if the Tehuantepec route succeeded, the former must fall to the ground. But we are fully persuaded that it is destined to fail from the bad management of its affairs, and from

the great difficulties to be contended with. Such we find to be the impression brought back by those returning from the Isthmus. Such is the opinion of well-informed engineers who have been in the service of the company. The result has fully proved that no reliance can be placed upon their estimates and statements. They are as ignorant, probably, of the amount required to carry them to the Pacific coast, and of the time necessary for this purpose, as any indifferent person in New York. The public are constantly inquiring, "what has become of the Panama railroad," and echo only answers. We have for a long time predicted that their efforts would end in a disastrous failure, and everything thus far has confirmed our opinion.

Railroad Subscriptions.

The city of Covington has just voted \$200,000 to the Covington and Lexington railroad; making, with the amount previously voted, \$300,000 for that city.

The Louisville Journal says that Warren county has voted by a majority of 300 in favor of a subscription of \$300,000 to the Louisville and Nashville railroad.

The city of Louisville has voted \$1,000,000 to aid the Louisville and Nashville railroad, and \$200,000 to the Jeffersonville railroad.

Hannibal and St. Joseph Railroad.—Clinton county has voted the railroad subscription, \$20,000 in amount, by a large majority.

The Pacific Railroad.

The President of this work, Thomas Allen, Esq., and the Chief Engineer, James P. Kirkwood, Esq., are now at the east for the purchase of iron and equipment for this road. The first division has already been let. Private subscriptions to the amount of \$1,000,000 have been raised, which carries with it an equal amount of State loan, so that the company have \$2,000,000 of immediate means. The State has voted \$2,000,000 to this line, and will without doubt increase the amount to one-half of the whole cost, which is estimated at about \$6,000,000. There now seems to be no doubt that the work will be pushed forward with vigor, and the road completed at the earliest practicable moment.

Stock and Money Market.

We have but little to report that is not found in two or three late numbers. Money continues in demand, and there seems to be a general disposition to meddle with new projects. Bonds of new works are without sale, and our friends will do well not to force them upon the market at present. Independent of the present scarcity of money, there is a feeling of distrust as to the future, and until this is dissipated, but few new engagements will be entered into. The shipments of specie continue large, and until this is checked, or till its consequences are fully seen, money will remain scarce.

Louisville and Frankfort Railroad.—The receipts during the month of July were as follows:—

For passengers	\$7,015 00
For freights	1,072 00
For mail service	371 00
	\$8,458 00

Expenses for same time. 4,400 00

\$4 058 00

Mad River and Lake Erie Railroad.—The aggregate receipts of the Mad River and Lake Erie railroad company, for the first seven months of 1851, were.....\$209 534 76
For the same period of 1850. 202 730 01

Increase over last year.....\$6,804 75

The receipts of the Galena and Chicago railroad during the first three months of the past two years, is as follows:—

	1850.	1851.	Increase.
May.....	\$10,644 04	\$14,338 23	\$3,724 17
June.....	9 748 93	16,627 68	6,874 75
July.....	9,335 25	16,660 67	7,315 42

Total....\$29,728 24 \$47,616 58 \$17,888 34
This shows an increase of about 60 per cent.

Rochester and Syracuse Railroad.—The statement of the condition of the Rochester and Syracuse railroad for the six months ending August 1, gives this very favorable view of the traffic of that road, showing, after a dividend of 5 per cent. a surplus of over \$90,000, notwithstanding the decrease in fares.

1851 Feb. 1, surplus profits.....	\$20,258 57
Receipts in February, 1851.....	45,986 40
Receipts in March.....	51 369 31
Received for mail service.....	10,377 75
Receipts in April, 1851.....	77,380 76
Receipts in May, 1851.....	91,448 26
Receipts in June, 1851.....	98,368 51
Receipts in July, 1851.....	89 642 50

Total.....\$484,832 06

Expenses in February 1851.....	\$24 192 09
Expenses in March, 1851.....	27 843 80
Expenses in April, 1851.....	22,603 32
Expenses in May, 1851.....	27,796 27
Expenses in June, 1851.....	28,479 75
Expenses in July, 1851.....	30,189 51

Disbursements by Treasurer for last six months, ending Aug. 1, 1851..... 7 925 12

Bonds \$421,000—Int. 6 mon's 7 per ct. 14,735 00

N. Y. State Stocks, \$200,000, at 5½ ".... 5 500 00

N. Y. State Stocks, \$200,000, at 5 ".... 5,000 00

Dividend on \$3,997,200 capital stock, 5 per cent for last six months ending this 1st August, 1851.....199,860 00

Balance..... 90 707 19

Total.....\$484,832 06

1851. Aug. 1. Surplus profits.....\$90,707 19

Vermont and Massachusetts Railroad Receipts.—

Receipts in the month of July, 1849....\$11,996 36

Same month last year..... 16,006 27

Same month this year..... 18,645 30

Androscoggin and Kennebec Railroad.—Comparative exhibits of the earnings of the Androscoggin and Kennebec railroad:—

	Passenger Trains.	Freight.	Total.
May 1850.....	\$4 340 99	\$2,385 76	\$6,726 75
June ".....	4 517 12	1,760 47	6 277 59
July ".....	5,437 97	2,103 31	7,541 28

Total for three months.....\$20,545 62

May 1851.....\$4,760 09 \$3,922 67 \$8,682 76

June "..... 5,173 49 3,541 56 8,718 05

July "..... 6,870 83 3,278 17 10,149 00

\$27 549 81

20,545 62

Gain.....\$7,004 19

Michigan Central Railroad.—The receipts of the Michigan Central Railroad company, for the month of July in each of the past two years, were as annexed:—

	1850.	1851.
Freight.....	\$11,324 66	\$23,048 14
Passengers.....	42,100 51	62,132 46
Miscellaneous.....	3,159 81	2,401 56

Total.....\$56,585 48 \$87,582 16

This shows an increase of more than fifty per cent, compared with last year. The greatest increase was in the freighting business.

Saratoga and Washington Railroad.—The receipts of the Saratoga and Washington railroad company, in July, were \$20,605 38, against \$13,933 03 for the same month last year, showing an

increase of \$6,672 35, equal to nearly forty-eight per cent.

The Boston Journal states that the Ogdensburg railroad is earning at this unfavorable season, an ample amount to pay double the interest required for the mortgage bonds, after deducting running expenses, as will be seen by the following calculation:—

Earnings from April 1 to August 1, 4 months, in round numbers.....\$124,000
Estimating remainder of year at same rate say \$30,000 per month, which is much below what the result will actually be.. 240,000

The running expenses from April 1 to August 1, were not over 40 per cent. of the earnings..... 145,600

Nett amount first applicable to interest on mortgage bonds.....\$213,400
7 per cent. on \$1,500,000 mortgage bonds. 105,000

\$113,400

Leaving \$113,400 or more than sufficient to pay the same amount of interest over again.

Cumberland Coal Region.—The following is the amount of coal shipped by the Chesapeake and Ohio canal, for week ending Thursday, August 21, at 3 o'clock, P. M.:—

By Frostburg coal company.....1,278 09 tons.
By Maryland mining company..... 900 12 "
By Borden mining company..... 822 12 "
By Washington coal company..... 499 08 "
By Alleghany mining company..... 456 00 "

Total tons for week.....3,957 01 "

Amount of coal sent by the Baltimore and Ohio railroad, for the week ending Saturday, August 16.

By Maryland mining company.....1,272 18 tons.
By Frostburg coal company..... 562 03 "
By Borden mining company..... 580 16 "
By Alleghany mining company..... 194 02 "
By Withers mining company..... 233 00 "
By People's mining company..... 377 10 "
By Washington coal company.....1,109 13 "

Total tons for week.....4,330 62 "

The exports of Breadstuffs from September 1, 1850, to the annexed dates in 1851, from the United States to Great Britain and Ireland, have been as follows:—

From	To	Flour, bbls.	C. Meal, bbls.	Wheat, bush.	Corn, bush.
N. York, Aug. 26	1,076,694	1,637	1,156	987	1,428,930
N. O. " 16	213,233	—	—	—	113,000
Phila. " 22	132,226	3,916	289,265	552,038	—
Balti. " 22	75,339	—	33,080	141,594	—
Boston. " 23	15,508	—	—	73,381	—
Others. " 16	15,203	—	—	—	27,000

Total.....1,532,203 5,553 1,479,332 2,335,943
About same time last year.. 453,085 6,086 461,276 4,866,673

The Evening Journal gives the annexed statement of the quantity of flour, wheat, corn and barley, left at tide water during the 3d week in August in the years 1850 and 1851, as follows:—

	Flour, bbls.	Wheat, bush.	Corn, bush.	Barley, bush.
1851.....	79,747	173,851	246,798	7,575
1850.....	71,612	69,001	155,034	3,800

Increase. 8,135 104,850 91,764 3,775

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 21st August, inclusive, during the years 1850 and 1851, is as follows:—

	Flour, bbls.	Wheat, bush.	Corn, bush.	Barley, bush.
1851.....	1,728,010	1,282,142	5,060,126	121,898
1850.....	1,052,180	599,895	2,366,940	130,903

Inc.... 675,830 772,247 2,693,186 dec. 9,005

Wabash and Erie Canal.—The Circular of the Trustees of the Wabash and Erie Canal is just published. The state of the finances is thus set forth:—

RECEIPTS FROM 1st DEC., 1850, TO 1st JUNE, 1851.
Cash on hand, 1st Dec....\$169,108 65
Cash receipts from tolls and water rents..... 52,748 13
Cash receipts from lands.....105,063 12
Interest and exchange..... 2,049 75
\$328,969 65

PAYMENTS.

General expenses & rep's...\$60,932 25
Construction of Canal, &c..143,078 98 204,011 23

Balance on hand, 1st June, 1851.....\$124,958 42
The receipts from tolls and water-rent in the seven months from 1st Nov. to the 1st June, 1851, are..... 60,870 35
The receipts from tolls and water-rent in the seven months from 1st Nov. to 1st June, 1850..... 58,502 42

Increase.....\$11,369 93

The Trustees state that the crops of wheat and corn on the ground were larger than was ever before known throughout the entire line of the Wabash Valley, and the prospect of a large fall business is highly gratifying, if prices are such as to bring it out.

Railway Share & Stock List;

CORRECTED WEEKLY FOR THE

AMERICAN RAILROAD JOURNAL.

NEW YORK AUGUST 30, 1851.

GOVERNMENT AND STATE SECURITIES.

U. S. 5's, 1853.....100½
U. S. 6's, 1856.....105½
U. S. 6's, 1862.....110
U. S. 6's, 1862—coupon.....113a114
U. S. 6's, 1867.....114½
U. S. 6's, 1868.....116½
U. S. 6's, 1868—coupon.....121½
Land Warrants.....140a145
Arkansas 6's.....52a53
Alabama 5's.....91a92
Indiana 5's.....79a80
Illinois 6's, 1870.....65a68
Kentucky 6's, 1871.....105a106
Massachusetts sterling 5's.....105a106
Massachusetts 5's, 1859.....100½
Maine 6's, 1855.....103
Maryland 6's.....102½
Michigan.....—
Mississippi.....—
New York 6's, 1865.....117a118
Ohio 6's, 1860.....110
Pennsylvania 5's.....89

RAILROAD BONDS.

Atlantic and St. Lawrence, 6 per cent..... 85
Baltimore and Ohio, 1867..... 94½
Boston and Providence 6's, 1855..... 101
Boston and Worcester 6's, 1855, convertible..... 107½
Bost., Concord and Mont. 6's, 1860, mortgage..... 87½
Cheshire 6's, 1860..... 91½
Connecticut River 6's, convertible..... 98
Erie 7's, 1859..... 101
Erie 7's, 1868..... 107½
Erie income 7's..... 91
Hudson River 7's, 1853..... 101½
Michigan Central, convertible, 8's, 1856..... 104½
New York and New Haven..... 100½
Norwich and Worcester, mortgage, 1860..... 80a85
Old Colony, 1854..... 97½
Ogdensburg 7's, 1859..... 94a95
Portsmouth and Concord..... 80a85
Passumpsic 6's, 1859..... 94½
Rutland 7's, 1863..... 97
Reading mortgage, 1860..... 80
" " 1870..... 75
Sullivan, mortgage 6's, 1855..... 60
Vermont Central 6's, 1852..... 96½
" " 6's, 1856..... 91½
Vermont and Massachusetts 6's, 1855..... 86½

RAILROAD STOCKS.

[CORRECTED FOR WEDNESDAY OF EACH WEEK.]

	Aug. 30.	Aug. 27.
Albany and Schenectady.....	96½	—
Atlantic and St. Lawrence.....	60a65	—
Androscoggin and Kennebec.....	30a35	—
Boston and Maine.....	103	102
Boston and Lowell.....	108½	109
Boston and Worcester.....	100½	100½
Boston and Providence.....	84½	84½
Bost., Concord and Montreal.....	40	—
Baltimore and Ohio.....	71½	—
Baltimore and Susquehanna.....	36	—
Cheshire.....	53	—
Cleveland and Columbus.....	—	—
Columbus and Xenia.....	—	—
Camden and Amboy.....	—	—
Connecticut River.....	60	—
Delaware and Hudson (canal).....	—	—
Eastern.....	95	96
Erie.....	70½	71½
Fall River.....	92½	93½
Fitchburgh.....	108½	108½
Georgia.....	—	—
Georgia Central.....	—	—
Harlem.....	68	68
Hartford and New Haven.....	124	—
Housatonic (preferred).....	52	—
Hudson River.....	70	—
Kennebec and Portland.....	50a55	—
Little Miami.....	—	—
Long Island.....	15	14½
Mad River.....	—	—
Madison and Indianapolis.....	96	—
Michigan Central.....	104	104½
Montgomery and West Point.....	—	—
Michigan Southern.....	—	—
Manchester and Lawrence.....	97	89
Morris (canal).....	14½	15½
New York and New Haven.....	101	107½
New Jersey.....	133	—
Northern.....	66	66½
Nashua and Lowell.....	107½	—
New Bedford and Taunton.....	111	—
Norwich and Worcester.....	50	52½
Norfolk County.....	22a23	—
Ogdensburg.....	30	32½
Old Colony.....	65	66
Passumpsic.....	80	—
Pennsylvania.....	—	—
Pittsfield and North Adams.....	95	—
Philadelphia, Wilm'gton & Balt.....	28	29
Petersburg.....	—	—
Richmond and Fredericksburg.....	—	—
Richmond and Petersburg.....	—	—
Reading.....	52	53½
Rochester and Syracuse.....	105	106½
Rutland.....	53	47
Stonington.....	43½	42½
South Carolina.....	—	—
Syracuse and Utica.....	130	—
Sullivan.....	25	—
Taunton Branch.....	108	—
Troy and Greenbush.....	90	—
Tonawanda.....	—	—
Utica and Schenectady.....	130	—
Vermont and Canada.....	103	—
Vermont Central.....	30	31½
Vermont and Massachusetts.....	25½	25½
Virginia Central.....	—	—
Western.....	102½	103
Wilmington and Raleigh.....	—	—
York and Cumberland (Pa.).....	20	—

New Jersey.

Morris and Essex Railroad.—We understand that surveys are being made for the extension of the Morris and Essex railroad to the Water Gap, in view of its ultimate extension into the Lackawanna valley, for the purpose of forming a junction with the Lackawanna and Western railroad, which is now on the eve of completion. If such a connection should be formed, a new route would be opened from New York to Great Bend on the Erie road; and upon the completion of the branches from Corning and Hornellsville to Buffalo, a parallel route to the Erie would be formed for almost the entire distance between the above cities.

Quebec and Halifax Railroad.

This great scheme, which contemplates the construction of a continuous line of railroad from Halifax to Hamilton, in Upper Canada, via Quebec and Montreal, seems likely to be carried out. We have already stated its general features. The Imperial Government offered to furnish the money, on the Provincial guaranty, at 3½ per cent. The cost of the whole line is estimated at \$40,000,000, to be divided among the three Provinces according to the extent of line in each. Canada is to build 800 miles, New Brunswick 400, and Nova Scotia 200—making 1400 miles in all. At \$30,000 per mile, the whole line will cost \$42,000,000. Canada has voted her quota. New Brunswick, it is said, will do the same. So will Nova Scotia. In the latter Province an election for members of the Provincial Parliament took place on the 28th instant, in which the railroad scheme was the issue to be tried. We have no doubt of its being favorable to the project.

A mass meeting of the friends of the railway was held at Halifax, for the purpose of nominating four persons to represent their views and interests in the lower branch of the Legislature. The meeting was addressed by Hon. Mr. Howe, who took occasion to make a public vindication of his course of action with respect to the railway scheme, and to state the influences which had operated in determining that course. He stated that the enterprise which they were attempting to carry forward was a very important one, and believing that a portion of the conservative party were convinced of the immense advantages to be derived from it, it had been his effort to combine that body with the liberal party, in carrying on the great work. This combination had taken place to a greater or less extent in England. Lord Stanley and Earl Grey, though radically opposed on almost every other question, set aside old party distinctions for the nonce, and combined to render that aid which the Provinces sought from the mother country. In Canada, also, Sir Allan McNab and the most intelligent and influential conservatives coalesced with the liberals in order to promote this great object. In New Brunswick there had been the same union between the two parties; party feeling was merged, sectional political differences were forgotten, in the desire of accomplishing an object which would be for the benefit of all classes of the community.

That being the state of the public mind elsewhere, Mr. Howe endeavored to bring about the same result in Nova Scotia. In order to do this, a proposition was made by the liberal committee to the other party, offering them one seat for the township of Halifax, and asking no pledge except that they should select a gentleman of character, honestly in favor of the railway. This proposition was made in good faith, from an earnest desire of causing unanimity and harmony between the two conflicting parties. The answer returned to this proposition was, that the conservative party would not be satisfied unless two members were allowed them, and these to go in entirely unpledged. Finding it was impossible to make a compromise with the other party, they were now to proceed to the selection of four gentlemen, liberals, and in favor of the railway, to represent the county and township.

Mr. Howe went on to state the existing aspect of affairs. He said that Canada had joyfully accepted the terms proposed by the British Government, and will build her portion, 800 miles; and New Brunswick is prepared to build her 400 miles.—

Now the question is, can Nova Scotia take upon herself the construction of 200, in order that she may obtain the benefit of the other 1200? When that was accomplished, Halifax harbor would be thronged with ships, and her commerce would bring wealth and prosperity into the lap of her citizens.

It had been stated that there would be opposition in the distant rural districts of the Province. Mr. Howe thought they were too well acquainted with their own interests to reject the advantageous prospect before them. He had no apprehension of the result, and he looked with confidence to the success of the project. All classes would be benefitted by it—the farmers, the merchants, the coasters, the fishermen—all would experience the benefits which this railway would open to them; and he had no doubt that the triumphant success of the work would show how these advantages were appreciated.

The following persons were selected as candidates for the Legislature: William Annand, Esq., John Esson, Esq., Lawrence O'C. Doyle, Esq., and B. Wier, Esq.

St. Louis.

St. Louis is destined to become the great city of the west. This is evidenced by her situation, her commercial facilities, and her rapid increase. But a few years ago she was an insignificant village; now she has risen to a mighty city, and is extending her commerce far and wide, while her influence is felt throughout the great Mississippi valley. Her population in 1835 was but 9,000; in 1840 it was 16,700; while at present she numbers not less than 90,000 souls, and is increasing at the rate of not less than 10,000 per year. Her imports for the present year will amount to about twenty-five millions, and her commerce to nearly fifty millions of dollars. Her steamboat tonnage is now larger than that of any city west of the mountains, and her manufacturing interests are very great, and increasing daily.

The business done by one of the private banking houses in that city amounted to not less than ten millions of dollars in the year 1850, as we learn from the St. Louis Intelligencer.

But when we look at St. Louis, as the eastern terminus of the Pacific railroad, it gives us a more adequate idea of her importance; and when that magnificent work shall have been completed—when the commerce of the Pacific shall pour into her storehouses—there is no reason of which we can conceive, why she should not become the great commercial metropolis of the west, rivalling even New York. As the tide of population sets westward, it will at length place her in the very centre of this vast republic, and her commerce extending north, south, east and west, will enable her to assume that supremacy to which her energy and perseverance in her infancy have given her so just a claim. We regard her future success as depending, in a great degree, on the progress of the Pacific railroad. That road is a part of the great highway to the golden shores of the Pacific; and just as surely as a mighty river deposits at its mouth the alluvion collected in its thousand miles of progress, just so surely will wealth and prosperity flow into the city of St. Louis through this channel. Her commerce, the vital element of cities and nations, will experience a steady and rapid increase, and she will control to a great degree the destinies of the whole surrounding country. This is not a merely imaginative sketch; it is founded upon the experience of the past. History shows us how cities rise, and why they decline; and not even

Rome, long the mistress of the world, possessed at such an early period after its settlement, so many elements of prosperity and rising greatness as are now combined in the city of St. Louis.

Ohio.

Pittsburgh and Cincinnati Railroad.—This enterprise appears to be in a fair way of early completion. Although it has only been before the public a few months, we learn that stock to the amount of \$600,000 has already been subscribed, and 30 miles of the road have been put under contract.—This road commences at or near Loudonville, Ohio, at the extreme southern bend of the Ohio and Pennsylvania railroad, and terminates at Springfield, where it connects with two first class railroads to Cincinnati. It passes through Mt. Vernon, Delaware, and Marysville, all county seats of rich and flourishing counties. It will be about 110 miles long, and at Mt. Vernon will cross the railroad line commencing at Sandusky, on Lake Erie, and running through Mansfield and Mt. Vernon, to Newark, where it intersects the Columbus and Zanesville line, thus giving railroad connections with those places. At Delaware it will cross the Cleveland and Columbus line.

The road will pass through nearly, if not quite, the geographical centre of Ohio, and through the fairest and richest portions of the State.

The contract above alluded to was made with Mr. DeGraff, who will furnish the first 30 miles with the necessary side tracks, extending from Springfield to Marysville, the central point in Union county. The road is to be delivered to the directors, ready for the iron, by August, 1852. The engineers are locating the remainder of the line, and it will doubtless be put under contract this coming fall or winter, and the whole line be prepared for the rails by the summer of 1853. It may be regarded as almost certain that the line will be completed within two years.

Important Railroad Movement in Kentucky

The city of Louisville has just voted the sum of \$1,000,000 to aid the construction of the Louisville and Nashville railroad, and \$200,000 to the Jeffersonville railroad, in Indiana. The latter is far advanced toward completion. The above vote we presume secures an immediate commencement of work upon the former, and the amount granted will, with the aid that can be relied upon from counties along the route, furnish ample means for the work. The length of this road will be not far from 180 miles, and cannot fail to be one of the most important roads in the country in every respect. Nashville will in a very short time be connected by railroad with Charleston and Savannah, and at no distant day with Mobile and New Orleans. It will be the great converging point for the lines from all the above cities. These lines, the Louisville and Nashville will carry forward to the Ohio river. Louisville will shortly be connected by railroad with the north and east, and the link between herself and Nashville will be the only one wanting, to form a continuous line of railroad from the northern Atlantic cities and the lakes on the one hand, and the southern Atlantic cities and the Gulf of Mexico on the other. This fact at once discloses the importance of the Louisville and Nashville railroad.

Reconnoissances of the route were recently made by L. L. Robinson, Esq., engineer to the company, which was found in the main to be very favorable. We understand that working surveys are to be immediately commenced under charge of the same

gentleman, who has thoroughly identified himself with, and has contributed no inconsiderable impetus to the new movement in favor of railroads, which has now taken such strong hold upon the popular mind of Kentucky.

Indiana.

Indianapolis and Bellefontaine Railroad.—This road is 83 miles in length, extending from Indianapolis to Union, at the Ohio line: 75 miles are straight lines; no curve of less radius than 5,730 feet; the maximum grade is 30 feet to the mile; and the cost of construction, up to the rolling power, with a T rail of 60 lbs. to the yard, an oak continuous superstructure, and a gravel ballast, will not exceed \$10,000 to the mile, as fully tested by the completion of that part of the road now in use. Thirty-six miles of the road, from Indianapolis to Anderson, is run with daily trains, carrying the mail. Eighteen miles, from Anderson to Muncie, are now being laid with the heavy rail, to be completed the coming fall, and the balance of the line is progressing rapidly with the graduation. The iron is procured for the whole road, with the exception of 25 miles; and the company are confident of having the whole line in use by the autumn of next year. This link in the great chain, as we have often said, must be one of the best, and most productive. Its local business must be heavy, while its through business will ultimately be immense. Connecting at Indianapolis with all the railroads radiating from that point, and at the Ohio line with the Sandusky, Cleveland, Pittsburg, Columbus and Dayton lines, it will possess great advantages of location for through travel and business; and considering its low grades, easy curves, and long straight lines, it may be brought up to almost any rate of speed; while its light cost of construction must give it high rates of dividends, when it shall be completed and its connections formed.

L. Myers' Patent Car.

A trial has been made of this revolving car on the Reading railroad, and it is stated that it has met the approbation of John Tucker, Esq., president of that company. It is intended to carry coal, grain, bacon, lime and similar articles.

This car consists of two wrought iron cylinders of sufficient length to suit the track, with the felloe or rim of a railroad wheel slipped over each end, and substantially rivetted to it. In the centre of each cylinder is placed a partition, the whole length and depth of the same. The door extends lengthwise the cylinder between the wheels, and is in four equal parts, hinged in the usual manner, and is secured by an iron rod, passing through the wheels and over the same. The contents revolve with the cylinder, and their abrasion is prevented by the centrifugal force produced when the cars are in rapid motion; and the partition placed in the cylinder prevents the same during the necessary slow motions on the road.

The great superiority claimed for these cars consists in the saving of friction, as the whole weight of the car and contents is directly on the road, thereby dispensing with axletrees, springs and patent boxes, and consequently lessening the liability to accident occasioned by their breaking. It is said that the large wheels necessary on cars of this construction enable them to run much easier and lighter, and with less injury to the road, than those now in use.

The whole weight being directly on, and in such close proximity to the road, the liability to run off the track is greatly diminished.

The facility for loading these cars is said to be equally as good as those now in use, simply by placing in or on the face of the railroad track, at the point of receiving freight, four friction rollers for each cylinder to be run on, in order that should the door be down when it should be up to receive freight, it may be very readily brought in proper position, by turning the cylinder, and the facility to do so, is in proportion to the diameter of the friction rollers, and which are adjusted in some respects as the grindstone is most usually in machine shops.

Kentucky.

Covington and Lexington Railroad.—The following is the authorized statement by its President, John S. Morgan, Esq., of the estimated cost of the road, together with the resources of the company:

For grading, bridging, abutments and superstructure to Paris.....	\$790,742
Right of way and contingencies	100,000
	\$890,742
Iron and laying track, \$7,000 per mile, to Paris, 78 miles.	546,000
	\$1,436,742

RESOURCES.

Individual subscriptions, Covington and Bourbon county subscriptions and Cincinnati Bonds.....	\$925,000
Individual subscriptions in Cincinnati, say.....	80,000
Covington authorized to subscribe additional.....	200,000
	\$1,205,000

Deficiency from Covington to Paris—all under contract but 12 sections....	\$231,742
Cost of road from Paris to Lexington, 19½ miles, say \$18,000 per mile.....	351,000
If the contractors take the same per cent in grading and bridges, in this part of the road that has been taken by contractors between Covington and Paris, it will amount to, say.....	48,000
If the county of Fayette vote to give us her bonds for \$200,000.....	248,000
Deficiency for this part of the road.....	103,000

This added to the deficiency between Covington and Paris, will make \$334,742 for the whole line—(cost of depots and machinery for the road not included.)

But if the Maysville and Lexington railroad company join the Covington company in constructing the road between Paris and Lexington, and it should be determined to construct a double track way, the cost of which we suppose will be \$26,000 per mile, \$507,000, each company to pay one-half \$253,500, which would leave a deficiency on this part of the line, to be provided for by our company (after dividing the \$48,000 to be taken by the contractors between the two companies) of \$29,000.

This amount, added to the deficiency between Covington and Paris, would leave \$260,742 on the whole line; that is if the two companies join. If not, the deficiency would be \$334,742.

New York.

The *Watertown Journal* of August 6th, contains the proceedings of a meeting held in that village, to promote the construction of a railway to Potsdam, in St. Lawrence Co. The delegates from St. Lawrence all united in the statement that the Ogdensburg and Champlain railway was of little use to its inhabitants, in consequence of its running too near the north line of the county; being 14 miles from Canton and 5 from Potsdam. The cost of the proposed road is estimated at \$14,000 per mile, which is the cost of the Rome and Watertown road. The road will be 68 miles long, passing through many flourishing villages, and a country unsurpassed in

natural resources, and which will soon be developed, when made accessible and brought in communication with a market; it will open to a market the largest forest of valuable (mostly pine) timber in the state, and which of itself will afford a very large source of revenue.

Baltimore and Ohio Railroad.

The following is a list of Engineers, assistants, etc., of the Baltimore and Ohio railroad company, who have charge of the first and second divisions of the road beyond Cumberland, viz.:—

William H. Small, Division Engineer.

George Hoffman,

Walter C. Smith,

W. G. Atkinson,

Henry Blackstone,

Gilbert H. Bryson,

Samuel T. Shipley,

R. P. Hazlehurst,

William Brace,

Randolph Boyd,

I. M. St. John,

Wm. D. Burton, Sup't of Water Station.

T. Freibus, Sup't Cumberland & Savage bridges.

A. C. Cochran, Sup't 21st section bridge.

Roseby Carr, superintendent of laying rails.

Pennsylvania.

Cleveland and Pittsburgh Railroad.—A meeting of the citizens of Pittsburgh was held recently, for the purpose of extending the Cleveland railroad from Wellsville to Beaver. Gen. J. R. Moorehead presided, and James Christy, Esq., was chosen Secretary. The meeting was addressed by Cyrus Prentiss, Esq., the President of the Cleveland and Pittsburgh railroad, who made a statement of the operations of the company. He said they had now some 62 or 63 miles of track laid, and were laying it at the rate of half a mile per day. They expected to arrive at the mouth of Hahn's run, near Rochester, in the early part of August, and thought they would be able to reach the river by the first of November. The company had had thirty-eight miles of railroad, between Cleveland and Ravenna, in operation for some time, the business on which was very gratifying and encouraging. When the road was first opened, the cars carried from one hundred and twenty-five to one hundred and thirty passengers per diem. The business steadily increased from one hundred and fifty to two hundred a day. Four hundred passengers are now carried over it every day. The gross number, for the first one hundred and four days they had been in operation, exceeded 35,000. The net receipts, after the payment of the expenses, was \$28,000, which would pay upon the cost of the road from Cleveland to Ravenna, ten per cent. dividend.

He said, however, that the company had expended the greater portion of their funds, and must rely on Pittsburgh to furnish the principal portion of the road between Wellsville and Beaver. The work would be put under contract immediately and completed at an early day, provided they received subscriptions to the amount of \$200,000 from the citizens of Pittsburgh. The entire cost of the road from Cleveland to Wellsville, including equipment, would be about \$2,000,000, or \$20,000 a mile.

The meeting was also addressed by other gentlemen, who set forth the advantages to be derived by Pittsburgh from the proposed extension, and made earnest appeals for the co-operation of her citizens, with the company, by furnishing the necessary subscription.

A committee was appointed to solicit subscriptions to the stock of the company, for the purpose of enabling them to effect this extension, consisting of

the following gentlemen:—A. W. Loomis, Thos. Bakewell, Wm. Bagaley, W. W. Wallace, Wm. McCutcheon, and Charles Knap.

From the unanimity of feeling, and energetic spirit manifested at this meeting, it seems probable that the proposed enterprise will be pushed forward to a speedy completion.

Pennsylvania.

Lebanon Valley Railroad.—The line of this road as surveyed is fifty-six and a quarter miles in length. Commencing nearly opposite the freight depot of the Philadelphia and Reading railroad at Reading, it crosses the Schuylkill below the mouth of Tulpehocken, seventy-one feet above water, by a bridge spanning both the river and the Schuylkill and Union Canals; thence westward it ascends at the rate of 26.4 feet per mile, with intermediate levels for five miles, passing near the village of Sinking Springs. After leaving this point, the road passes near Warnersville, Reading Furnace, Womelsdorf and Newmantown, through the northern part of Lebanon, to Millerstown, where the Quitapahilla is crossed, and a direction taken towards the Swatara bridge, passing about midway between Palmyra and Campbellstown. The Swatara river is crossed seventy-seven feet above water by a bridge spanning both it and the Union canal near the centre of the great bend; and in two miles and a half further, the summit dividing the Swatara and Srsquehanna is passed, and the table lands of the latter river reached, leaving Middletown, one of the chief lumber marts of that region, three miles to the left. Thence the descent commences at the rate of twenty-one feet per mile, and continues with intermediate levels for seven miles and a quarter to the western terminus near Harrisburg.

The estimate of cost are as follows:

For rail track per mile.....	\$8,080 08
For graduation, masonry and bridging per mile.....	11,203 33
	\$19,282 41
Or for 56½ miles.....	\$1,084,635 56
Six miles of side track.....	48,480 48
Switches, crossings, &c.....	6,500 00
Contingencies, engineering, &c.....	114,163 63
Total cost of road.....	\$1,253,779 67
Land damages at \$1.325 per mile...	74,531 25
Three small engine houses, turning platforms, &c.....	30,000 00
Five water stations and other necessary station buildings.....	25,000 00
Magnetic telegraph line and instruments.....	12,500 00

Total expenditure required.....\$1,395,810 92

With regard to the prospects for trade which this road possesses, we cannot do better than to quote a few paragraphs from the report of the chief engineer. He says:—

"It would be difficult to find in Pennsylvania, an unimproved route promising greater advantages for trade than the Lebanon Valley railroad; the fertile and thickly settled country traversed by it, the number of towns within the bounds of its tribute, and the advantages of Lebanon county for the manufacture of iron, must always secure for it a large amount of local trade.

In 1839 the tonnage of the Union canal was 117,680, exclusive of coal from Pine Grove; about this time the Tide-Water canal was opened, and it became reduced in 1842 to 50,606 tons, the through trade having become diverted. Since then it has been increasing, and reached in 1849, 76,166 tons, exclusive of coal as above.—Of this, 21,321 tons was lumber from Middletown, and the balance of 54,844 may be considered as very near the local trade furnished by Lebanon Valley to the Union canal; of this 10,003 tons was grain and flour;

30,120 tons was due to iron manufactories, and 23,721 tons miscellaneous freight.

The Philadelphia and Columbia railroad gathered in an equal distance, exclusive of the city of Lancaster, through a less generally fertile and thickly settled district, 49,188 tons of local freight in the year 1849.—New enterprises will be commenced, and old ones revived on the opening of this road, tending greatly to swell its local business.

Cornwall Ore Banks, six mile south of Lebanon, are the richest and most valuable in Pennsylvania. The coal of Pine Grove is now reached by Union canal in a distance of thirty miles from Lebanon; Fishing Creek Coal Lands are some five miles nearer, and the Semi Bituminous coal of Stony creek, is not farther off.

So situated, I do not see what is to prevent Lebanon county from becoming one of the most extensive iron manufacturing districts in the State. Three Anthracite, and seven Charcoal furnaces are now supplied from Cornwall Ore Banks, capable, when in full operation, of producing 25,000 tons of pig metal yearly, and last season 30,000 tons of Pine Grove coal were delivered at Lebanon, chiefly for the purpose of smelting iron.

Some idea may be formed of the advantage of location which will be possessed by your road, compared with the route by Lancaster, when I state that if the cost of eastward transportation on the Philadelphia and Reading road is represented by 1, that on the Lebanon Valley will be 2, and on the route by Lancaster 3; or otherwise stated, if an engine of any given power will move a certain load eastward over the Reading road two engines of the same power will be required to move a similar load over the Lebanon Valley, and three over the Lancaster; and westward, one and a-half engine on the Reading, will be equal to two on the Lebanon Valley, and three on the Lancaster routes. These numbers are sufficiently accurate to give a general view of the advantages you may expect to possess, on account of your grades and curvatures, for heavy transportation. The time which will be saved in the passenger traffic on your route, is not less decided in its character. Six hours are now consumed by the passenger trains from Philadelphia to Harrisburg, whilst the running time on the Lebanon Valley route, should not exceed three and a-half hours between the same points. It is not likely the time of the Lancaster route will be reduced below five hours; it would be equally easy for you to reduce below three and a half as they below five; as you are at all times likely to have a clear advantage of one and a half hours in the passenger traffic, which is sufficient to secure the preference to your route.

In estimating the local trade, it must be remembered that your road will rest with one end at the city of Reading, now numbering nearly 16,000 inhabitants; and the other at the seat of government of Pennsylvania with 8,000 inhabitants, both of which places are rapidly growing in manufacturing importance, and that it will have a natural extension along the fertile valley traversed by it of 74 miles, the trade from which may also be considered as local, in contra-distinction to the through trade from the west.

To keep within such reasonable limits as will be reached by the results, I shall estimate the profit on each passenger carried 56 miles, at 75 cents, and on each ton of freight carried the same distance, 50 cents, from which we derive the following:—

Local trade of Lebanon and Cumberland Valleys.	
30,000 passengers per annum, at...75c	\$22,500 00
80,000 tons of freight, do at...50c	40,000 00
From the Pennsylvania Railroad and other sources.	
30,000 passengers annually, at...75c	22,500 00
30,000 tons freight do at...50c	15,000 00

Total annual freight.....\$100,000 00

Or upwards of seven per cent per annum on the requisite investment. The figures fall below what may reasonably be expected from experience on other roads, both in quantity of trade, and the income to be derived from it, and must be greatly exceeded in a few years from the opening, and on the competition of the works now in progress."

Central Railroad.—Another section of this, extending to Lockport, has been completed and open-

ed for travel, making three hundred continuous miles of railway from Philadelphia, and leaving but eighty miles of canal on the route, to the Western terminus on the Ohio river. We learn further, that on or about the 1st of January, proximo, the road will be in use to a point near Youngstown, on the Southern turnpike, which is within a distance of forty miles of Pittsburgh.

Maine.

Great Falls and South Berwick Branch Railroad.

—The contract for building this road, a length of six miles, has been taken by J. G. Myers. The company was organized on the 9th inst. by the choice of the following officers:—

F. O. J. Smith, President; H. H. Hobbs, Clerk. Directors—F. O. J. Smith of Portland; John A. Burleigh, Great Falls; John T. Paine, Melrose; Nathaniel Wells, Great Falls; — Hackett, Portsmouth; Ichabod G. Jordan, Great Falls; — Rollins, do.

York and Cumberland Railroad.—At the late annual meeting of the directors of this company, the following gentlemen were chosen directors for the current year, viz:—

Rufus McIntyre, Josiah Pierce, George Warren, J. A. Poor, N. L. Woodbury, T. Farrar, F. A. Wood, A. G. Fitch, G. W. Came, I. A. Burleigh, D. Appleton.

At a subsequent meeting of the directors, John A. Poor of Portland, was chosen President, and D. C. Emery, Treasurer.

Slow Railroads.—One not to be beaten.—A correspondent of the Boston Times, speaking of the Pontiac (Michigan) railroad, remarks:—"John Summers once asserted on the floor of the Senate that the Pontiac cars 'never were known to go fast enough to break the Sabbath,' and that 'if they should travel to all eternity in a straight line, at any velocity they have ever been known to attain, they could not get so far but what they could get back the next day.'"

Massachusetts.

The Georgetown Railroad.—The following gentlemen have been chosen directors:—J. Coleman, of Newburyport; George Tenny, of Georgetown; Asa Pingree, of Topsfield; Thomas Perley, of Boxford; Joseph Black, Daniel Richards, and Dr. Osborne, of Danvers; W. D. Northend, of Salem, and Mr. Crane, of Boston. Asa Pingree, of Topsfield, was chosen president. This road, when made, will open a communication over a route west of the Eastern railroad from Newburyport to Boston, through Georgetown, Topsfield, North, and South Danvers, and over the South Reading branch to the Boston and Maine road.

Kentucky.

Maysville and Lexington Railroad.—We understand the difficulties pending in relation to the issue of the bonds of the county of Fayette to the Maysville and Lexington railroad company, have been satisfactorily adjusted and the order was made by the county court, on yesterday, without opposition for their issue according to the terms of subscription. The basis of the settlement, we learn, is substantially the resolutions heretofore published, and offered at the public meeting of the county, by M. C. Johnson, Esq., with an agreement to refer all matters of difference which may arise as to a grade, &c., to the arbitration of two competent engineers, one to be chosen by each company and their umpire. We congratulate our county upon this most auspicious termination of these difficulties which unfortunately have arisen among the friends of railroad enterprises, and hope we may now all actively and earnestly go to work to aid in every possible way in the completion of these enterprises. The

interest of our county and city is vitally at stake, and we are greatly deceived if a new and hitherto unknown prosperity is not dawning upon us.—*Lexington Observer.*

Lafayette and Indianapolis Road.

Hon. A. S. White, President of this road, returned from New York yesterday morning. We are informed that the necessary locomotives, and other equipments have been provided for, and will be here with the iron in the course of one month. It is expected that a considerable portion of the iron will be laid down this fall.

Mr. White has made arrangements for three locomotives, with all the equipments necessary for thirty cars, which is thought sufficient for the present.

The enterprise will be carried forward now with all possible energy, every essential provision having been made for the completion of the road. The entire line is nearly in readiness to receive the iron, and the unfinished portion will be ready by the time the iron is received.—*Lafayette Journal.*

Massachusetts.

Important Railroad Transfer.—We understand that Edward Crane, Esq., who has, from the beginning of the building of the South Reading Branch railroad, held a controlling interest in its stock, has sold out that interest, and all his shares, to the President of the Eastern railroad, at the rate of \$115 per share; President Neal buying in the name of the latter corporation. The bargain was first offered to the President of the South Reading corporation, and, after some long consideration, not being taken up, it was closed with Mr. Neal. The transfer is likely to have considerable influence upon stocks of new roads, which were to cut off the travel upon the Eastern railroad.

Cincinnati and St. Louis Railroad.

This great project, which has been for a long time in abeyance, owing in part to the restrictive policy of the State of Illinois, is now to be commenced in a manner which gives every assurance of success. The whole length of line will be about 330 miles. The principal intermediate point is Vincennes, which is about midway between the two termini.

The whole cost of the road cannot be much less than \$7,000,000. We believe that something over \$2,000,000 in subscriptions have been obtained already. Although the amount required is very large, the road is a favorite project with the cities of Cincinnati and St. Louis. These can easily furnish the means. The intermediate country can contribute considerable, particularly in Indiana.

It will be seen by an advertisement in another column, that proposals are invited for the grading of 45 miles, commencing at Cincinnati. There will be a large amount of heavy work on this portion of the line, which presents an attractive field for Contractors. We learn, too, that some 50 miles of the line on the St. Louis division, will probably be put under contract at about the same time with the above.

Mobile and Ohio Railroad.

This enterprise seems to be making rapid headway in Mississippi. The various counties on the route in that State are now being canvassed, and most of them take the quota assigned to each. The county of Noxubee has subscribed \$360,000, and is expected to take \$40,000 more. The county of Kemper has taken \$160,000, and will carry her amount up to \$175,000. Lauderdale has taken \$100,000; Clarke about \$40,000; Oktibbehee, \$50,000, and Chicasa \$10,000. The sums contributed by a number of the above counties embrace only a portion of what is expected to be obtained from

them. Some of the leading counties have not acted in the matter of subscriptions. On the whole, the best feeling prevails upon the entire line of the work, and it is believed that the country traversed, can easily prepare the road bed for the iron.

Freights on Railroad Iron.

In an article in our paper of the 9th inst., upon the cost of transportation to the west, via the Erie canal, we stated that "the Dayton and Western company paid only \$4 50 for the transportation of their iron from New York to Dayton." We should have said to Toledo.

Pittsburgh and Steubenville Railroad.

The Pittsburgh and Steubenville railroad company, has been duly organized by the election of the Hon. Harmar Denny, as President, and the following gentlemen of Pittsburgh, as directors:—J. K. Moorhead, Joseph Pennock, Wm. M. Lyon, Thos. S. Clarke, Lewis Hutchinson, Henry Graff and Charles Naylor, of Pittsburgh.

Michigan Southern Railroad.

This road is now opened, in connection with the Northern Indiana road, to Bristol in Indiana, making a line of 137 miles from Lake Erie now in operation. It will be extended to South Bend, 23 miles further, within a few weeks, by the 10th September proximo. These roads will have 160 miles in operation from Lake Erie.

Sandusky.

The channel of this harbor has been dredged out the present season, so that there is now ten feet of water over the bar. The channel is 500 feet wide. The Sandusky Herald says that their port is now the best upon Lake Erie.

Providence and Worcester Railroad.

The receipts for passengers and freight over the Providence and Worcester railroad, for July, are \$3,000 more than they were for the corresponding month last year.

Resignation.

David A. Neal, Esq., of Salem, has tendered his resignation as President of the Eastern railroad corporation, and will start for England, on Wednesday of next week, on business connected with the Illinois Central railroad, of which he is one of the officers.

New Hampshire.

Cocheco Railroad.—This railroad, which connects with the Boston and Maine railroad at Dover, N.H., from thence running to Alton Bay, is to be opened for public travel on Monday next. On Saturday, August 30th, the stockholders residing in Dover and vicinity, will pass over the road, and on Monday, September 1st, the directors, Boston stockholders and invited guests, will formally dedicate this delightful route to the White Mountains by an excursion to Alton Bay, and thence by the new and elegant steamer Dover to Wolfboro' Centre Harbor, and other points on Lake Winnipissigee.—*Boston Courier.*

Massachusetts.

Essex Railroad.—The following gentlemen have been elected directors of this road for the present year:—George Hodges, David Pingree, Nathaniel B. Mansfield, Nathaniel Weston, Eben. Sutton, Samuel A. Safford, John B. Silsbee.

Saugus Branch Railroad.—The following are the officers:—President, Mark Healy of Lynn. Treasurer, Edward Crane, of Boston. Directors, Chas. Porter, George W. Raddin, George Hood, of Lynn; George Pearson, B. F. Newhall, of Saugus; Joshua Webster, — Wise, of Malden; Edward Crane, of Boston. The "southern survey" has been deci-

ded upon as the route of the track, and operations for building the road are to be commenced immediately. The depot in Lynn will probably be near the Lynn Hotel.

Grand Junction Railroad.—The laying of the track from the Fitchburg road to the Grand Depot grounds and wharves at East Boston has been completed, and the road will probably be opened for business next month, the first train passing over it on occasion of the great celebration.

To Contractors.

Cincinnati and St. Louis Railroad.

SEALED proposals will be received at the Office of the Company till Wednesday, the 1st day of October next, for grubbing, grading and bridging forty-five miles of the Ohio and Mississippi railroad, from Mill Creek, in Cincinnati, to a point twenty miles west of the city of Anzora, Ind.

Plans, specifications, &c., may be examined by Contractors, at the Office of the Company, in Cincinnati, from the 20th of September, to the day of letting.

By order of the Board,

ABNER T. ELLIS, Pres't.

Cincinnati, August 16th, 1851.

To Chief Engineers, Directors of Railroads, Canals, etc.

A Civil Engineer and Surveyor, who has been professionally engaged under the British Government, East India Company, etc., is desirous of obtaining employment as an Assistant. No objection to the South or West. Address for one month to C. E. & S., American Railroad Journal office. August 16, 1851.

Railroad Iron.

THE Undersigned offer for sale 2,000 tons of Railroad Iron, to arrive at New York in the month of September next. It is of a most approved pattern and quality, and weighs about fifty-five pounds to the yard.

CHOUTEAU, MERLE & SANDFORD.

No. 51, New Street.

New York, August 9.

TO CONTRACTORS.

Belpre and Cincinnati Railroad.

Engineer's Office, }

Chillicothe, July 30, 1851. }

SEALED PROPOSALS will be received at the Engineer's Office, in Chillicothe, until the 18th day of September, 1851, for the Graduation, Masonry and Bridging of 42 miles more of their road;—25 miles being between Greenfield and Blanchester, and 17 miles east of the 11 miles now under contract east of Chillicothe.

Plans, Profiles and Specifications will be ready for examination, at the Engineer's Office, on and after the 10th day of August. Blank Proposals will be furnished to Contractors, and all necessary information given upon the line or at the office concerning the quality and quantity of work.

W. P. CUTLER, Pres't.

A. KENNEDY, Chief Engineer.

Virginia Locomotive and Car Works.

Wolfe Street and River Potomac, Alexandria, Va.
SMITH & PERKINS, Proprietors.

MANUFACTURE—

Locomotive Engines and Tenders.
Marine and Stationary Engines and Boilers.
Chilled Car Wheels and Axles.
Patent Chilled and Wrought Slip-tire.
Machinery and Castings generally.

The undersigned having erected very extensive shops, and procured the most modern machinery and tools, are prepared to execute orders for Locomotive Engines, Cars, and Machinery of all kinds, with despatch, and on the most favorable terms.

R. C. SMITH,

Late of the Alexandria Iron Works.

THATCHER PERKINS,

Late Master of Machinery on the Balt. & O. R.R.
July 22, 1851.

Bridges & Brother, DEALERS IN RAILROAD AND CAR FINDINGS, 64 Courtlandt street, New York.

Having established a general Depot for the sale of articles used in the construction of Railroads, Locomotive Engines and Railroad Cars, we would invite your attention to our establishment. We have already in store a good assortment of CAR FINDINGS and other articles used in the trade, and feel justified in saying, that should you desire anything in our line, we can supply on terms perfectly satisfactory, and in the event of your desiring to order, you may feel assured that your terms will be as good as though you were here to make your own purchases.

Among our goods may be found Railroad Car Wheels, Axles, Jaws and Boxes, Nuts and Washers, Bolts, Brass Seat Hooks and Rivets, Window and Blind Springs, Litters and Catchers, Door Locks, Knobs and Butts, Ventilators and Rings, Car Lamps, Coach and Wood Screws, Jack and Bed Screws and Babbitt's Metal; also Plushes, Damask, Enameled Head Linings, Cotton Duck for Top Covering in width sufficient without seams, Curled Hair and all other articles appertaining to cars.

Also a new and valuable CAR DOOR LOCK, well adapted to the Sliding Door. This is decidedly the best yet introduced.

LOCOMOTIVE ENGINE LANTERNS, the best article made in the country. Whistles, Gauge and Oil Cocks, Hemp Packing, American, Russian and Italian. We are also agents for Lightner's Patent Journal Box for Car Axles, that invaluable invention, for the economical use and preservation of Car Journals.

Coach VARNISH and Japan of the best quality. We would also offer our services for the purchase as well as for the sale of goods on commission.—Both members of our firm have had the experience of many years in the manufacture of Railroad Cars, and our Senior was a member of the well known house of DAVENPORT & BRIDGES, Car Manufacturers, Cambridgeport, Mass. With our knowledge of matters pertaining to Railroads, we feel quite confident in giving satisfaction to both buyer and seller, and hope that through assiduity and attention to any business entrusted to our care we shall merit a continuance of confidence and patronage.

BRIDGES & BROTHER.

July 22, 1851.

Lightner's Patent Axle Boxes.

THE Undersigned are Agents for, and offer for sale, *Lightner's Patent Axle Boxes*, for Railroad Cars and Tenders, which have, by thorough experience, been demonstrated to be one of the most valuable improvements ever introduced in Locomotion. The saving effected in oil alone, will in a few months pay the first cost of these boxes, independent of other advantages. They are now in use upon the following, among other roads, viz:

Boston and Worcester, Boston and Providence, Boston and Fitchburg, Nashua and Lowell, Providence and Worcester, Northern, N.H., Cheshire, Manchester and Lawrence, Concord, N.H., Concord and Claremont, Ogdensburg, (Northern, N.Y.), Stonington, New London Willimantic and Palmer, New Jersey Central, New Hampshire Central, Worcester and Nashua, Fitchburg and Worcester, Connecticut and Passumpsic, Lowell and Lawrence, Salem and Lowell, Wilton Branch, Newburyport.

Below will be found the certificates of a number of gentlemen, whose opinions will be good authority in every part of the country.

Office Boston and Prov. R. R.,
Boston, Dec. 28, 1849.

Mr. JOHN LIGHTNER,

Sir,—It affords me pleasure to say, that after two years' trial of your boxes, I am fully and entirely satisfied of their superiority over any other pattern we have used. This superiority consists in economy of oil and freedom from "heating." I have tried every pattern of box in use, of any note, and do not hesitate to say, that you have devised one which in every respect combines greater advantages than any other within my knowledge; these advantages are so manifest, that I am fitting up all

our cars with your boxes, as fast as practicable.

Annexed, is a statement of an experiment with your boxes, the result of which may be of use, to your interests.

Ten passenger cars, running 72 wheels, fitted up with Lightner's boxes used 41½ pints of Patent Oil, at 50 cts. per gallon, ran 43,099 miles, equal to 5-18 pints per wheel for 43,099 miles. Speed, 30 to 40 miles per hour.

Very respectfully yours,

W. RAYMOND LEE, Supt.

I have examined the above statement of Mr. Lee, and fully concur with him in his opinion of the superiority of Lightner's box.

GEORGE S. GRIGGS,
Supt. Machine Shop B. & P. R. R.

Boston, July 26, 1849.

This is to certify that J. Lightner's axle boxes for railroad cars and locomotive tenders, have been in use on the Boston and Worcester railroad one year, and I unhesitatingly pronounce it, in my opinion, the best and most economical one in use, requiring less oil, of easy application, not susceptible of derangement, as in most kinds in use. When requiring repairs or renewal, the same may be done in one-fourth of the time usually occupied for that purpose. The box requires oiling not oftener than once a month—is kept quite free from dust, and consequently wears much longer than those generally in use.

D. N. PICKERING,
Supt. Motive Power, B. & W. R. R.

Office of Boston Locomotive Works,
December 12th, 1849.

The Boston Locomotive Company have been using J. Lightner's patent axle boxes under the tenders of their engines for several months, and find them more highly spoken of by the railroad companies that have used them in regard to economy in the use of oil, their durability and their ease of adjustment, than any other boxes which they have used. We therefore do not hesitate to recommend them to all railroad companies.

DANIEL F. CHILD,
Treas. Boston Locomotive Works.

Taunton Locomotive Works,
Taunton, July 7, 1849.

Mr. H. F. ALEXANDER,

Dear Sir,—Your favor of yesterday came to hand in which you ask what success we have met with in using Mr. Lightner's patent box for cars, engines, &c.

We have put it in use on the Boston and Providence railroad, New Bedford and Taunton Branch railroad, Central railroad, N. J., Norfolk County, Rutland and Burlington, and as yet we have not had one complaint from them; and from what we have used of it, and witnessed, we do not hesitate to say that it is superior to anything in use for that purpose. It is simple in its construction, and easy of access, and the reservoir is held close to the shaft, and the oil and journal is perfectly secure from dust; they will run from four to six weeks without replenishing the oil. The brass in the box is changed very much easier than by any other plan that we have seen.

Very resp. yours,

W. W. FAIRBANKS, Agent.

Office Providence & Worcester R. R. Co.,
Providence, Dec. 17th, 1850.

H. F. ALEXANDER, Esq.,

Sir,—The "Lightner patent boxes" for cars and locomotives have been in use under a portion of the passenger cars and engines of this company for upwards of two years, and have given very great satisfaction.

Though combining many excellent qualities, their great superiority consists in the economy of oil.

The result of experiments upon this road shows the consumption of oil by the use of this box, to be not more than one sixth part the quantity consumed by the use of the common box.

With the common box, eight passenger cars, 64 wheels, running 90 miles per day, consumed in 12 months 520 gallons of oil, being an average of 8½ gallon per wheel per annum.

With the Lightner box the same cars running the same number of miles per day, during the same space of time consumed 73½ gallons of oil, being an average of 1½ gallon per wheel per annum.

So manifest are its advantages over any other box used by this company, it is intended to place it under all our cars as soon as practicable.

Besides the saving of oil, as they afford complete security from dust, we think them more durable than any other box in use.

Another advantage resulting from the use of this box is, cars run more easier than with the common box. The saving in fuel which it would effect, would of itself, we think be a sufficient inducement to use this box in preference to any other known to us.

Very respectfully,

ISAAC H. SOUTHWICK, Supt.
JOHN B. WINSLOW,
Supt. Machine Shop, P. & W. R. R.

Cambridgeport, April 5th, 1851.

H. F. ALEXANDER, Esq.

Sir,—This may certify that I have been engaged in the manufacture of railway cars since 1834, and have built for the different railroad companies cars of all descriptions to the amount of three millions of dollars, and have used on the above cars all kinds of journal boxes, and find that none give better satisfaction than the "Lightner patent box," both on account of the saving of oil and the arrangement for taking out and re-placing the composition by means of the sliding key, and other conveniences which no other box possesses.

Yours respectfully,
CHARLES DAVENPORT.

Worcester, March 17th, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—This is to certify that I have been for some years past engaged in building cars, and that I have tried most, if not all of the patent boxes, and have found Lightner's patent superior to all others as far as the saving of oil is concerned, also the ease with which they are fitted and exchanged in case they get out of order.

For the last three years, I have put them under all of the cars I have built, and in every instance they have given the most entire satisfaction.

Yours truly,
OSGOOD BRADLEY.

Office Union Works, So. Boston,
May 23d, 1851.

This certifies that I have applied Mr. J. Lightner's patent axle boxes to my locomotives and tenders for the past two years. I consider them superior to all others,—economical in their use, and possessing many important advantages not found in any other boxes.

SETH WILMARTH.

Office 15, R. R. Exchange, Boston,
June 1, 1851.

This is to certify, that we have known the success of Lightner's patent journal boxes upon various roads in New England the past three years, and have been led to examine their peculiar construction.—We are well satisfied of their merits, and have adopted them upon our small gravel cars, and take pleasure, as we ever have done, in recommending their use upon all roads where we are employed in the construction.

GILMORE & CARPENTER,
Contractors.

Amoskeag Manufacturing Co. Machine Shop,
Manchester, May 31, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—We are using the Lightner box on all the engines and tenders we build, and we are satisfied that it is the best box in use, and recommend the same to all those who purchase engines at our works.

Yours respectfully,
O. W. BAYLEY, Agt.

This is to certify that the Fitchburg railroad company having become satisfied of the superiority of J. Lightner's patent Axle Boxes for Railway Cars and Locomotive Tenders adopted the same,

and are bringing them into general use upon their road.

One year's experience with the above improvement, has fully convinced me that there has never been anything offered to the public for that purpose which possess such intrinsic value; in fact, this is an improvement which seems to overcome all the difficulties found in all the various kinds now in use. It possesses very many advantages over all others: Some of which are [first] the first cost is much less than that of most boxes in use. [Secondly] 75 per cent is saved in oil; one gill applied to each Journal once a month, or one quart to an eight wheel car, is all these boxes require per month [Thirdly] no dust can gain access to the Journal, which is constantly lubricated with clean oil; hence the saving in repairs of Journals and composition bearings, is a matter of importance. [Fourthly,] its construction is truly simple—not complicated, having nothing liable to become loose by constant and severe service. [Fifthly] for convenience there is nothing which approaches this improvement.—The composition bearings may be removed from the Journals of an eight wheel car, by one man, and returned, or duplicates, in twenty minutes, while under the car: the same would require two men, at least half a day with other boxes in use.—The trucks and wheels using these boxes, are free from oil and dirt, usually seen upon all railroad cars, at great expense to the corporation.

NATH'L JACKSON.

Supt. Car Building and Repairs, F.R.R. Co.

Boston, March 9, 1849.

I hereby certify, that I have examined a box for Car Journals, invented by Mr. Lightner of Roxbury, Mass, and I have thought so well of it that I have adopted it on our railroad, I have known of its success on other roads.

S. M. FELTON,

Supt. F. R. R.

Office of the Central R. R., N. J.,
Elizabethtown, May 1849.

H. F. ALEXANDER, Esq.,

Dear Sir:—Your favor, [wishing to be informed how we liked Lightner's patent axle boxes for R.R. Journals,] has been duly received; in answer we would say, we have used the boxes on Locomotive tenders one year, more or less, and on our cars some six months. I consider them the best boxes in every respect, I have ever used, or even seen used on any other roads—for safety, durability and the economy pertaining to all the details connected with the boxes and Journals of R. R. Car wheels; and we shall adopt them upon this road.

Yours Respectfully,

JOHN O. STEARNS.

Supt. Central Railroad Co., N. J.

Manchester, N. H., Nov. 1st, 1850.

H. F. Alexander, Sir,

I have used "Lightner's Boxes" under all the Cars of the Manchester and Lawrence railroad, and feel no hesitation in saying that I think them to be the best boxes now in use.

Yours, &c.,

THEODORE ATKINSON, Agent.

Cheshire R. R. Office, Keene,
March 5th, 1851.

Mr. H. F. Alexander,

Sir,—Lightner's Patent Boxes have been used on the Cheshire R. R. about a year, and have given the highest degree of satisfaction.

All the Passenger Cars now in use, and a considerable number of Merchandize Cars are furnished with them, and they will take the place of the Common Boxes on all the cars as fast as circumstances will permit.

Very Resp't.

L. TILTON,

Supt. Cheshire R. R.

Boston and Worcester Railroad,
Boston, April 1st, 1851.

H. F. Alexander, Esq.,

Dear Sir,—Lightner's Patent oil saving box for railroad cars, has been adopted by this corporation; we are taking out the common and substituting the

Lightner's at the rate of fifty boxes per month; it will soon take the place of all others, as it is decidedly preferable to any heretofore used by this corporation.

G. TWITCHELL, Supt.

Statement of amount of oil used on 32 8-wheel freight cars, on the Boston and Providence Railroad (with Lightner's Boxes) from March 10, 1849, to February 27, 1851, and upon 12 8-wheeled passenger cars from September 8, 1849, to February 27, 1851.

FREIGHT CARS.

Amount Oil.	No. months.	Amount Oil.	No. months.
1.—21 pts.	10	17.—23½ pts.	14
2.—19 "	6	18.—23½ "	11
3.—25 "	13	19.—36 "	21
4.—18 "	7	20.—22 "	10
5.—22 "	12	21.—38½ "	24
6.—24 "	13	22.—29 "	23
7.—20 "	11	23.—35½ "	23
8.—21 "	11	24.—37½ "	23
9.—23½ "	10	25.—51 "	23
10.—21 "	9	26.—31½ "	24
11.—20 "	9	27.—28½ "	23
12.—21½ "	11	28.—36 "	23
13.—19 "	8	29.—50½ "	24
14.—25½ "	17	30.—50 "	23
15.—20½ "	10	31.—41 "	23
16.—31 "	18	32.—39½ "	23

Total, 925½ pts. 510

PASSENGER CARS.

1.—19½ pts.	18	7.—30 pts.	18
2.—25½ "	18	8.—25½ "	18
3.—33½ "	16	9.—29 "	18
4.—19 "	15	10.—46½ "	17
5.—15 "	15	11.—9 "	9
6.—22 "	18	12.—65½ "	17

Total, 340 pts. 197

Averaging 1 4-5 pints of oil for freight, and 1 7-10 for passenger cars per month only!

All orders and enquiries promptly attended to.

BRIDGES & BROTHER,

No. 64 Courtlandt st., New York.

July 25, 1851.

To Boiler Makers, Engineers, etc., etc.

PATENT LAP-WELDED IRON TUBES,

Manufactured by the

BIRMINGHAM PATENT IRON TUBE CO.

UNDER

PROSSER'S PATENT,

from one and a quarter to eight inches in diameter.

These tubes are well known for their superiority over all other descriptions for Locomotive, Marine and other Steam Engine purposes, for which they are used very extensively in Great Britain and on the Continent of Europe.

For sale in quantities to suit purchasers, by

WILLIAM BIRD & CO.,

44 Wall st., New York.

July 26, 1851.

To Railroad Companies.

THE undersigned has discovered and patented an imperishable, cheap, and sufficiently elastic substance, to be introduced between the sill and rail, so that the stone sill can be used in place of the wooden sill: entirely overcoming that rigidity where the rail is laid directly on stone. Address

J. B. GRAY, Philadelphia.

July 10, 1851.

To Contractors.

Peru and Indianapolis Railroad.

PROPOSALS will be received at the office of the Peru and Indianapolis Railroad, in Noblesville, until the evening of the 13th of August next, for the Grading of the line of the above road from Noblesville to Peru, a distance of fifty miles. Also the masonry for Bridges over the Wabash, Big Pipe and White Rivers.

The proposals are to be addressed to W. J. HOLMAN, Esq., Chief Engineer, at the Company's Office, where plans and specifications of the work may be seen. Payments will be made monthly in cash, reserving 15 per cent. till the contracts are completed.

Indianapolis, July 12, 1851.

European and North American Railway.

THE undersigned, the three persons first named in the first section of an act passed by the Legislature of Maine, and approved the twentieth day of August last past, entitled "An Act to incorporate the European and North American Railway Company," and being specially authorised therefor in and by said act, hereby give public notice that, for the purpose of receiving subscriptions to the stock of said company, as established by the act aforesaid, according to the provisions thereof, not exceeding forty thousand shares, books of subscription will be opened under the direction of the undersigned, according to the regulations prescribed, at the time and places following, viz:—On WEDNESDAY, the Twentieth day of August next,

At Calais, Maine, with Noah Smith, Jr., Esq.

Eastport, do. " Col. Bion Bradbury.

Machias, do. " Walker & O'Brien,

Ellsworth, do. " Seth Tisdale, Esq.

Oldtown, do. " Geo. P. Sewall, Esq.

Bangor, do. " Geo. W. Pickering, Esq.

Orono, do. " Hon. Israel Washburn, Jr.

Waterville, do. " Hon. Timothy Boutelle.

Brunswick, do. " Prof. William Smyth.

Augusta, do. " B. A. G. Fuller, Esq.

Belfast, do. " John Y. McClintock, Esq.

Portland, do. " John B. Brown, Esq.

Portsmouth, N.H. " Hon. I. Goodwin.

Salem, Mass. " Stephen A. Chase, Esq.

Boston, do. " Francis Skinner & Co.

Lowell, do. " John Wright, Esq.

Worcester, do. " Charles Washburn, Esq.

Providence, R.I., " Billings Brastow, Esq.

Hartford, Conn., " Hon. C. F. Pond.

New Haven, do. " Allen Prescott, Esq.

New York, N.Y., " R. & G. L. Schuyler, No.

2 Hanover street.

Albany, do. " John V. L. Pruyn, Esq.

Troy, do. " Hon. John D. Willard.

Philadelphia, Pa. " Hon. Wm. C. Patterson.

Montreal, Canada, " Hon. John Young.

Quebec, do. " J. B. Forsyth, Esq.

Said books will remain open for ten successive days at the places and with the persons aforesaid. Dated at Portland, this sixteenth day of June, A. D. 1851.

ELIJAH L. HAMLIN,

ANSON G. CHANDLER,

JOHN A. POOR.

Trautwine on R. R. Curves.

By JOHN C. TRAUTWINE, Civil Engineer,
Philadelphia, Pa.

IN press, and will be published in a few days; accompanied by a Table of Natural Sines and Tangents to single minutes, by means of which all the necessary calculations may be performed in the field.

This little volume is intended as a field-book for assistants; and will be found extremely useful, as it contains full instructions, (with wood cuts) for laying out, and adjusting curves; with Tables of Angles, Ordinates, etc., for Curves varying from 13 miles, down to 146 feet Radius.

A portable Table of Natural Sines and Tangents to minutes, has for a long time been a desideratum among Engineers, independently of its use in laying out curves.

The volume is neatly got up in duodecimo; and handsomely bound in pocket-book form.

Sold by Wm. Hamilton, Actuary of the Franklin Institute, Philadelphia. Price \$1.

Also in press, and will be issued in a few weeks, "Trautwine's Method of Calculating Excavation and Embankment."

By this method, which is entirely new, (being now made known for the first time) the cubic contents are ascertained with great ease, and rapidity, by means of diagrams, and tables of level cuttings. Thin octavo; neatly half bound, \$1. For sale by Wm. Hamilton.

June 28, 1851.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

Notice to Contractors.*Steubenville and Indiana Railroad.*

PROPOSALS will be received at the Office of the Steubenville and Indiana railroad company in Steubenville, until the first day of October next, for the Grading and Masonry of the first division of the road extending from Steubenville to the Connotten valley and also for the construction of the entire road between Steubenville and Coshocton; and also distinct proposals for the construction of that portion of the road extending from Coshocton to Newark.

The entire length of this line is about 110 miles, and it contains work of all descriptions, in great variety, some of which is quite heavy.

Proposals will be received for the Grading and Masonry of the first division entire or in sections of about a mile each, the Company reserving the privilege to make such disposition of the whole work, as may appear most conducive to its interests.

Plans, profiles and specifications can be seen at the office of the Company after the 15th of September, and further information may be obtained on application to J. Blickensderfer, jr., Chief Engineer, or to the undersigned,

D. KILGORE, President.

Notice to Contractors.*Engineers Office, E. T. & V. R. R. Company, Greenville, E. T., June 5th, 1851.*

PROPOSALS will be received until the 1st day of October next, for the Grading and Masonry of that part of the E. T. & V. Railroad between the Eastern terminus of said road at King's Meadow, and Rheatown, in Greene County, a distance of about forty seven miles. A large amount of very heavy work, both in Grading as well as Masonry, will be found on this division, offering strong inducements to able Contractors.

Maps, Profiles, and Specifications can be seen at this Office, on and after the 20th of July next.

The Company reserve the right to reject all, or any proposals that they deem unsatisfactory.

Proposals should be directed to the Treasurer and Secretary of the E. T. & V. Railroad Company, Jonesborough, E. T.

LLOYD TILGHMAN,
Chief Engineer.**Railroad Lanterns.**

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.

August, 16, 1849.

6m33

Railroad Iron.

THE Subscribers, Agents for the Manufacturers, are prepared to contract for the delivery of Railroad iron at any port in the United States or Canada, or at a shipping port in Wales.

WAINWRIGHT & TAPPAN,
29 Central Wharf.

Boston, June 1, 1851.

Bowling Tire Bars.

40 Best Flange Bars 5½x2 inches, 11 feet long.
40 " " 5½x2 " 7 feet 8 in. long.
40 " Flat " 6x2 " 11 feet long.
40 " " 6x2 " 7 feet 8 in. long.

Now in store and for sale by

RAYMOND & FULLERTON,
45 Cliff street.**To Railroad Companies, Machinists, Car Manufacturers, etc., etc.**CHARLES T. GILBERT,
NO. 80 BROAD ST., NEW YORK.

IS prepared to contract for furnishing at manufacturer's prices—
Railroad iron,
Locomotive Engines,
Passenger and Freight Cars,
Car Wheels and Axles,
Chairs and Spikes.

Orders are invited; and all inquiries in relation to any of the above articles will receive immediate attention

THE Fourth Annual Exhibition of AMERICAN MANUFACTURES, by the MARYLAND INSTITUTE for the Promotion of the Mechanic Arts, will be opened in Baltimore on the 20th October, 1851.

The Exhibition will be held in the SPLENDID NEW HALL of the Institute, (fronting on Baltimore street) now being rapidly completed. Their edifice is centrally situated, chaste in its architecture, solid in its construction, and is by far the largest and most complete building in the United States, devoted to the Mechanic Arts. It may be added that this building is 355 feet long by 60 in breadth, with an average height of 68 feet, containing some twelve apartments, the largest of which is 255 feet by 60, and that the cost will be over \$70,000.

To this Exhibition, the Managers ask the attention of all engaged in industrial pursuits throughout the country, and cordially invite them to contribute specimens of their best productions for public inspection, and to compete for the prizes offered by the Institute. These prizes consist of GOLD and SILVER MEDALS, DIPLOMAS, etc., which were last year distributed as follows:—Gold Medals, 16; Silver ditto, 90; Diplomas, 60; besides 85 articles of Jewelry, etc., to ladies. Fair play will be scrupulously observed towards all, and every facility of Steam power, shafting, fixture, labor, &c., &c., will be amply provided free of expense. The machinery will be under a special superintendent, and a fine display of it is looked for. The last exhibition of the Institute was visited by more than 10,000 persons, and with their vastly improved accommodations and alterations, this number will be doubled at the coming display, embracing many Virginians, Pennsylvanians, and other strangers from the South and West.

Joshua Vansant, President.

Ed. Needles, } Vice Presidents.

F. A. Fisher, }

Samuel Sands, Rec. Sec'y.

Wm. Prescott Smith, Cor. Sec.

F. J. Clare, Treasurer.

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(*The last nine in Italics are the Committee on Exhibition.*)

The Hall will be opened for the reception of goods on MONDAY, 13th October; on the next Monday, 20th, at 7 P. M., the Exhibition will be formally opened to the public, and will positively close on Wednesday, 19th November. Articles for competition must be in the Hall by Thursday night, Oct. 16, unless delayed in shipment after starting in ample time.

Those who intend depositing, will give the Committee or the Agent, notice as early as possible, stating the nature of the goods, and probable amount of room required, to exhibit them to advantage.

Circulars, containing a view of the new Hall and the full regulations of the Committee, with special information, if required, may be had promptly, by addressing the undersigned, or the Institute's Agent, J. S. Selby, Baltimore, post-paid.

ADAM DENMEAD,

Chairman Com. on Exhibition for 1851.

SUPERIOR BLACK WRITING & COPYING INK.**Jones' Empire Ink.**

87 Nassau st., Sun Building, New York city.

Net prices to the trade—

Quarts, per dozen,	\$1 50	6 oz. per dozen,	\$0 50
Pints,	1 00	4 " "	0 37½
3 ounces,	0 62½	2 " "	0 25

On draught per Gallon, 20 cents.

This is the best Ink manufactured. It flows freely, is a good copying ink, and will not mould, corrode, precipitate or decay. Orders for export, or home consumption, carefully and promptly attended to by

21st

THEODORE JENT.

To Railroad Companies, etc.

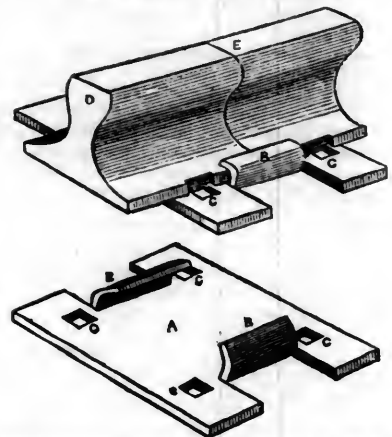
The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

I also invite attention to an improved PATENT SPRING LOCK for SLIDING Doors to Freight and Baggage Cars, now in use upon the Pennsylvania Central, Greenville and Columbia, S.C., Reading, Pa., and other Railroads.

Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LEBRICH,
46 South 8th St. Philadelphia.

May 9, 1851.

The American Railroad Chair Manufacturing Co.

ARE prepared to make WROUGHT IRON RAIL ROAD CHAIRS, of various sizes, at short notice.

By use of the WROUGHT IRON CHAIR, the necessity of the wedge is entirely done away—the lips of the chair being set, by means of a sledge or hammer, close and firmly to the flange of the rail.

The less thickness of metal necessary in the Wrought Iron Chair gives much greater power and force to the spikes when driven—and consequently a much less liability to the spreading of the rails by reason of the spikes drawing or becoming bent.

The less weight necessary in the Wrought Iron Chair, will enable us to furnish them at a cost much below that of CAST IRON CHAIRS.

DESCRIPTION OF THE ABOVE CUTS.

Figure 1 is a perspective view of the rail secured in the chair, and fig. 2 is a perspective view of the chair itself. D, E, are sections of two rails placed together, and secured at the joint on the chair by the jaws A, B. The chair is bolted down by spikes C, C. In fig. 2, the chair is represented as made of a single block or plate A of wrought iron.

The chair is set in its proper place on the track, spiked down, and the ends of the two rails brought together within the jaws as represented in fig. 1.

For further information address,

N. C. TROWERIDGE, Secretary,
Poughkeepsie, N. Y.

June 1, 1851.

Railroad Commission Agency.

THE Subscriber offers his services to Railroad Co's and Car Makers for the purchase of equipment and furniture of roads and depots and all articles and materials required in the construction of cars, with cash or approved credit. No effort will be spared to select the best articles at the lowest market price.

He is sole Agent for the manufacture of the ENAMELED CAR LININGS, now in universal use. The best Artists are employed in designing new styles, and he will make to order pieces with appropriate designs for every part of the car, in all colors, or with silver grounds and bronzed or velvet figures.

He is also Agent for Page's Car Window Sash Fasteners, which is preferred by all who have used it to any other.

CHARLES STODDER,
75 Kilby st., Boston.

June 20, 1851.

3m,

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 136 NASSAU ST., NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.
SECOND QUARTO SERIES, VOL. VII., No. 36! SATURDAY, SEPTEMBER 6, 1851. [WHOLE No. 803 VOL. XXIV.]

ASSISTANT EDITORS,

J. T. HODGE, *For Mining and Metallurgy.*

GEN. CHAS. T. JAMES, *For Manufactures and the Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & Co., 136 NASSAU ST.

Saturday, September 6, 1851.

Hempfield Railroad.

A meeting of the citizens of Ohio county, Virginia, was held in Wheeling on the evening of the 6th ult. John W. Gill presided, and John Dunham was appointed secretary. The meeting was addressed by T. M. T. McKennon, Esq., President of the Hempfield railroad company, and other gentlemen; after which resolutions were unanimously adopted to the effect that the commercial interests of Missouri, Illinois, Indiana, Ohio, Virginia and Pennsylvania demand the speedy completion of that central line of railroad which is now in course of construction from Jefferson city to St. Louis, from St. Louis to Columbus, from Columbus to Wheeling, and from Wheeling to Philadelphia, and that the Hempfield railroad is the link in this great chain which forms the shortest practicable connection between the Central road of Pennsylvania and the Central line west of the Ohio, since it strikes

the Ohio at the shortest point where the trade can be commanded, and where that river can be crossed by any railroad extending from Philadelphia, and below the main difficulties of navigation in the Ohio; and that consequently it must command a vast trade, and must of necessity be a profitable road.

A committee was appointed to receive subscriptions in Wheeling and South Wheeling; and a determination was expressed to ask no aid from abroad until they had shown their own faith and confidence in the work by taking stock sufficient to evince their determination to carry the enterprise through.

Ohio.

Cincinnati and Belpre Railroad.—At a recent meeting of the stockholders of this company, it was voted to change the name of the company to "Marietta and Cincinnati Railroad Company."—A report upon the affairs of the company was made by W. P. Cutler, Esq., the President, of which the following is an abstract:

The charter authorises the construction of a road from a point on the Ohio opposite Parkersburg, or from Harmar, at the mouth of the Muskingum, by way of Athens and Chillicothe, to the city of Cincinnati, and to connect with any railway constructed to the Ohio river on the easterly side thereof, in Virginia.

The principal portion of the disposable funds of the company, are solely applicable to the construction of that portion of the line, connecting the Mineral region in Vinton county with Cincinnati. That connection being deemed very important, a great effort has been directed to select the best route west of Chillicothe, and secure a prompt construction of the road. The route to Greenfield was determined on, and 11 miles of it from Chillicothe put under contract. Surveys were also made to Hillsborough, with a view to a connection at that place with the Hillsborough and Cincinnati company. That route has been abandoned, and a much shorter and cheaper route adopted, from Greenfield west to Cincinnati.

The line east passes two or three miles south of McArthur, in Vinton county, and will thoroughly develop the mineral wealth known to abound in that region. From Athens to Marietta, a direct and practicable route has been found entering the ravine of the Ohio, near Marietta. The county of

Washington and the towns of Marietta and Harmar took \$350,000 of the stock, payable on condition the route to Marietta was adopted, and the placing of fifty miles of the road west of that town under contract. These conditional subscriptions have been accepted, in order to concentrate on the work the united energies of a portion of Ohio, hitherto neglected, and whose future prosperity seems to depend mainly upon a successful issue of the present effort. The company rely mostly, for a direct and speedy connection with the Atlantic cities, upon the city of Wheeling, to which point the Baltimore and Ohio railroad is now approaching a rapid completion, and from which the construction of the Hempfield road promises a connection with Philadelphia and New York, shorter by many miles, and more direct than the one through Baltimore, and avoiding the high mountain grades. Should the interest of Baltimore induce the construction of the line through Virginia to Parkersburg, a connection with that line can be made, if the parties in interest furnish the funds.

The original capital stock of the company was \$1,000,000. Authority has been since given to increase the capital to \$3,000,000. Under the general law it may be further increased to \$6,000,000. During the past year the following subscriptions have been made to the capital stock:

Subscription from Ross county, authorized by an act of the General Assembly of Jan. 21, 1851.....	\$200,000
Athens county, authorized by act of March 7, 1850.....	100,000
Washington county, authorized by act of General Assembly of March 20, 1851.....	200,000
Marietta, same act.....	100,000
Harmar, same act.....	50,000
Individual subscriptions, made payable on location of road to Harmar.....	10,000
Subscriptions west of Greenfield.....	150,000
Amount taken by contractors on work let.....	80,000

Total subscriptions during the year. \$890,000
Amount subscribed previous to 21st Aug. 1850:—Ross county \$100,000—individual stock \$154,000..... 254,000

Total subscriptions of stock.....\$1,144,000

The city of Cincinnati authorized a loan of its credit to the company to the amount of \$150,000, on condition that a junction should be formed with the Hillsborough road. As this condition has be-

come impracticable, no doubt is entertained by the President, that the city authorities will so modify it as to permit the application of the funds thus obtained, to the construction of the first division of the road, adjacent to Cincinnati. Applications have been made to the counties of Athens and Vinton, to take \$100,000 of stock each; and to the city of Chillicothe to take \$50,000. If these subscriptions are made, the available means of the Company, including the Cincinnati Loan, will be \$1,544,000.

In March last, the line from a point eleven miles east of Chillicothe to Greenfield was put under contract, and the grading and masonry is progressing rapidly. A steam engine about to be applied to the heavy excavation; and the road bed will be ready for the iron in time to complete that part of the road by the 1st of December, 1852. Twenty-five per cent of the contract price is taken in stock.

The amount already expended since the organization of the company is \$27,844 93. The balance in the Treasury of \$2,528 42 will be absorbed in payment of dues to the Engineer corps. All of the above has been received from individual stockholders. A portion of the Ross county bonds have been issued, but have not yet been disposed of. It is hoped to realize the par amount of them.

Twenty-five miles west of Greenfield and seventeen additional miles east of Chillicothe, are advertised for contract. The design of the directors is, so to construct the road as to open at once a connection between the mineral region and Cincinnati. The road is to be a first class road in every respect. The right of way has been mostly secured.

The entire cost of the first division of 80 miles to Martinsville, and six miles light work west to connect with the Hillsborough road, will be about \$1,500,000. The funds applicable, including \$50,000 from Chillicothe, and the \$150,000 from Cincinnati, are \$880,000. The deficiency of \$500,000 will be made up by individual subscriptions.

The lack of sympathy and co-operation from any of the great Eastern and Western cities, likely to reap the benefits of the road, has greatly discouraged its vigorous prosecution; but recent movements in Philadelphia and Baltimore, indicate a more just appreciation of it. The recent opening of the New York and Cincinnati and Columbus and Cleveland roads has shown the merchants of those cities the necessity of intercepting the great South-western current of business at points where it may be secured from the controlling influence of Northern lines connected with New York.

The leading merchants of Philadelphia held a meeting in July, and adopted resolutions favorable to a connection by the Hempfield and Wheeling route with Marietta. The city council of Baltimore has resolved to furnish \$1,500,000 of the capital required to construct a railroad connecting the city of Baltimore with the commercial centre of the Great West.

The connections of the Cincinnati and Marietta road with other railways and public improvements are numerous and important. It crosses the Ohio canal at Chillicothe, and connects with the Hocking canal at Athens, and the Muskingum improvement at Marietta. These works are in operation, come from productive portions of the state, and will become important feeders to the road. While the original policy of uniting Cincinnati and St. Louis with the Atlantic shore, by the nearest and best route, has been adhered to, other connections

has been projected which promise important results. A charter for a railway from Dayton to intersect the Marietta line at or near the crossings of Rattle-snake creek, in Highland county, has been obtained. This line can be easily constructed, and will connect an important section of the country with the mineral region in Ohio, and with Baltimore, and at Dayton, with all the Indiana roads. Its early completion may be looked for. The interest of a large portion of Ohio, and of Kentucky and Tennessee, demand the vigorous prosecution and early completion of the road to Marietta. The Cincinnati and Marietta railway must control a very large amount of trade and travel, and influence the entire current of business flowing from a South-westerly direction to the Eastern cities.

The distance from Cincinnati to Marietta by railway will be 188 miles; by the river it is 300, thus making a difference of full 20 hours in running time over the best steamboat speed.

Passengers leaving Louisville, and passing by way of Lexington, Maysville, may reach Wheeling in 16 hours on their way to Baltimore or Philadelphia. The same advantages may be derived by Nashville and New Orleans, by an extension of the trunk line. By this route the distance from New Orleans to Wheeling will be about 1,000 miles, and be run in 48 hours, while the distance by the rivers is 2,000, and 12 days are required to run it.

The report makes a very favorable estimate of the profits of the road. The Madison and Indianapolis road, connecting two cities of the size of Chillicothe, 86 miles doing a local business, pays 10 per cent. dividend, and its stock cannot be bought for less than par. The Little Miami road, when confined simply to local business, paid well. So did the Mad River road, and the Sandusky and Mansfield road. The Cincinnati and Marietta road when finished must command an amount of business, fully up to the capacity of any road to perform. All the elements of railway business and profits are abundant along the line of this road. Kentucky and Middle and West Tennessee have no direct railway route to either Baltimore, Philadelphia or New York. "Such a route, however, is opened to them, by the completion of their own lines, to Maysville and Portsmouth, thence by the Scioto and Hocking Valley route, to its intersection with this road. The topography of the country bordering the Ohio river, on either side, between Portsmouth and Marietta, utterly forbids the idea of a rival line."

The distance from Nashville to New York by way of Lexington, Cincinnati, Cleveland, and New York and Erie road is 1139 miles
Nashville to New York, via Maysville, Wheeling and Philadelphia. 984 "

Difference 155 "

The report concludes with the remark that a richer field for railroad enterprise is not offered in the United States.

Iowa.

Western Railroad.—It is stated that the directors of the "Iowa Western railroad," from Muscatine, through Washington, Keokuk and Mahaska counties, are about making arrangements for the immediate survey of the route. Owing to high waters on the east end of the route, it has been determined to commence at Oskaloosa and run eastward.—Muscatine has raised \$1,000 towards paying the expense of the survey.

From the Merchant's Magazine.

Internal Improvements of the State of New York.

A SKETCH OF THE RISE, PROGRESS, AND PRESENT CONDITION OF INTERNAL IMPROVEMENTS IN THE STATE OF NEW YORK.

Continued from Page 238.

RAILROADS.

The first application which appears to have been made to the Legislature of New York, for the construction of a railroad, was by Stephen Van Rensselaer of Albany, and George W. Featherstonhaugh of Duaneburgh, in the county of Schenectady, in the year 1826. They applied on the 13th of February of that year, for an act of incorporation to authorize them to construct a railway between the Mohawk and Hudson Rivers. The petition was referred to a select committee of the Assembly, of which Theodore Sill of Oneida was chairman, who reported in favor of the application, on the 28th of the same month. The committee allude to the success of railroads in England, and conclude that, under similar circumstances they may be made successful in this State. "Nevertheless, as there is not a single instance of a railroad of any extent in this country, known to the committee, it remains an experiment yet to be tried; and it is under these circumstances that the petitioners are willing to make the first experiment of the kind with their own private resources. The present occasion affords a fair opportunity for trying an experiment, without expense to the State, how far the contemplated plan of improvement is applicable to our soil and climate." The bill passed 99 to 8 in the Assembly, and 26 to 3 in the Senate.

The stock of the Mohawk and Hudson road was not readily taken up, and some modification in the charter was applied for and obtained in 1828. The messages of Governor Clinton, in 1827 and 1828, and of Governor Van Buren in 1829, do not recommend railroads to the consideration of the Legislature.

Governor Throop, in his message in 1831, alludes to experiments made in England "during the past year with locomotive engines, upon a railroad between Liverpool and Manchester," and states that "loaded carriages now pass regularly between those cities at the rate of eighteen miles an hour." And the message adds, "while canals, peculiarly adapted to the transportation of bulky articles, may be made in suitable situations, railroads, on account of their fitness for rapid transmission, to operate at seasons when canals are useless, and perhaps to overcome elevations insurmountable by them, will no doubt, in future times, be extensively distributed throughout the State. There are few obstacles in any part of the State which may not be overcome by one or other of these improvements." Four charters were granted for railroads in 1831, two of which, the New York and Harlem, and Saratoga and Schenectady, have been constructed.

Some surveys were made, but the contracts for the construction of the Mohawk and Hudson road were not entered into until July, 1830; in August of that year ground was broken at Schenectady, and in about one year the road was finished and put in operation, under the supervision of C. C. Cambreleng, as agent of the company, and John B. Jervis, as chief engineer. The opening of the road was celebrated on the 24th of September, 1831.—Three cars, with twenty passengers in each, were taken from the intersection of the railroad with the Cherry Valley Turnpike, near the head of the plane in Albany, to the head of the plane in Schenectady, by an American engine, weighing three and a half tons, in forty-six minutes; and seven other cars were drawn by horses in one hour and a quarter. The company had an English engine made by Robert Stevens, weighing six and a half tons, which went through a few days after at the rate of twenty-two miles per hour.

In a short speech at the dinner in Schenectady, Mr. Cambreleng complimented Mr. Featherstonhaugh, as the enterprising gentleman through whose efforts the charter was obtained; and he alluded to the Mohawk and Hudson road as "a humble pioneer to more extensive and useful works, spreading through every part of the State." And in reference to the project then agitated by the people of Buffalo and Rochester, for a railroad from

the Hudson to Lake Erie, along the route of the Erie canal, he gave the following toast—"The Buffalo Railroad—may we soon breakfast at Utica—dine in Rochester—and sup with our friends on Lake Erie."

At Albany the company purchased a tract of 18 acres of land, about half a mile south of the city, constructed docks and a storehouse, under the expectation of doing a large transportation business, by taking property from the canal at Schenectady, where another store-house was constructed and connected with the canal by a basin which admitted boats to pass from the canal into the basin and alongside of the railroad track in the store-house. The elevations at each end of the road, one hundred and eighty-five feet at Albany, and one hundred and fifty feet at Schenectady, were overcome by inclined planes and stationary engines. Although the distance from the canal at Schenectady to the Hudson river at Albany by the railroad, was only sixteen miles, and the distance by the Erie canal thirty miles, with the interruption of twenty-seven locks, still the effort to take the produce from the canal and transport it to Albany by the railroad, was an entire failure, and the storehouses and the canal basin have been abandoned, although this company have not been obliged to pay toll to the State for articles transported. The passengers at the time referred to, were taken to and from a point near the head of Albany plane, by horse power, on a branch road to the head of State-street, immediately below the Capitol Park; this branch was constructed under an act passed in 1822, which required it to be extended to the Albany Basin and a track was actually laid down through the centre of State-street to the basin; but the grade was such that it could not be used without a stationary engine, and the track was subsequently removed. By subsequent acts the company was authorized to abandon their inclined planes and branch roads, and construct the road on a new line so as to overcome the rise at Albany and Schenectady by locomotive engines.—All these changes have been expensive, and have brought up the cost of the road to about one hundred thousand dollars per mile.

As soon as the Mohawk and Hudson railroad was in operation, it gave a new impulse to this branch of internal improvement. The passengers averaged between three and four hundred per day, and it was estimated that the road would yield an income of 15 per cent, and in less than ninety days the stock was at a premium of thirty-six per cent.

Early in the month of September, 1831, a committee of the citizens of Buffalo addressed a circular to the inhabitants of the State, urging the adoption of immediate measures for the construction of a railroad from the Hudson River to Lake Erie, and suggesting the propriety of following the route of the Erie canal, insisting that the interests of the State, in that work, would be promoted instead of being injured, by this mode of increasing the facilities for the transportation of passengers; and that the Erie canal instead of having any good reason to dread the railroad as a rival, required its assistance in performing its Herculean labors. This committee, with a similar one in Rochester, united in calling a Railroad Convention, to meet at Syracuse on the 12th of October, 1831. The convention was attended by delegates from most of the counties on the central line between Albany and Buffalo. Nathaniel W. Howell, of Ontario, was President, and Thomas H. Hubbard, of Oneida, and William B. Rochester, of Erie, Secretaries. The convention resolved to apply to the Legislature for act of incorporation, "to construct a railroad from Schenectady to Buffalo, to pass through the towns of Utica and Salina." The convention also adopted the following resolution:—

"Resolved, That it is expedient in making such application, to ask for the incorporation of a company empowered to make a railroad to be used for the purpose of transporting persons and their baggage, and under such restrictions, as regards the transportation of property, that the same tolls shall be paid into the canal fund, for the carriage of property or other than baggage, on the railroad, as would be paid to the State for the transportation of the same property on the canal."

* The Constitution of 1821 declared that the rates of toll established by the Canal Commissioners and

A committee appointed by this convention gave notice of an application for a charter to construct a railroad from Schenectady to Buffalo, on the conditions of the above resolution, with a capital of five millions of dollars, and power to increase to ten.

Another notice was published, dated 21st Sept., 1831, for a railroad from the Hudson River, or Schenectady, to Buffalo, "by the most convenient route, with branches connecting therewith such of the villages of Syracuse, Auburn, Geneva, Canandaigua, Rochester and Batavia as shall not be on the route of the main road." On the 26th of the same month, notices were given of a railroad from Albany to Buffalo, with a capital of seven millions, for the transportation of passengers, goods, wares, and merchandise. Also, for a railroad from Buffalo to Cayuga Lake, or outlet, with a capital of two millions, to transport goods, wares, merchandise and passengers.

On the 29th of November, of the same year, a meeting was held at Genesee, in relation to a railroad from Rochester to Dansville, following up the valley of the Genesee to Mount Morris, and thence up the valley of the Canaserago to Dansville. In the preamble to the resolutions, it is stated that neither a canal nor a railroad can be constructed to Olean without the aid of the State, and as such aid was doubtful, the meeting determined to apply for a railroad charter; and it was declared in the proceedings that "a railroad has a decided advantage over a canal in this climate, by extending its benefits and facilities throughout the whole year, whilst a canal would be so obstructed with ice as to be useless nearly half the time."

In his annual message in 1832, Governor Throop said—"Railroads are of modern invention, more simple and less expensive than the Roman, French or Dutch roads, and probably better adapted to a cheap, safe and rapid transmission of persons and commodities. There is reason to believe that for great thoroughfares, they will not only supersede every other kind of road, but enter into a successful competition with canals also. They are not so well adapted to general use, as either roads or canals, because they will admit upon their track none but public vehicles of a peculiar construction." After alluding to the numerous applications for railroad charters, and to the long period which must elapse before these enterprises could be accomplished by the public means alone, the message recommends the granting of charters for these works, inserting in them the power to repeal, and "reserving to the State the right to take possession of them as public property on equitable terms."—And on routes contiguous to the State canals, or "pointing to the sources of their trade," requiring such rates of toll to be paid to the treasury as would secure the canal revenue from loss, and not retard the payment of the canal debt.

Applications were made to the Legislature of 1832 for forty nine separate charters for railroads, twenty-seven of which were granted. Of the latter, six have been constructed; the Brooklyn and Jamaica, Hudson and Berkshire, New York and Erie, Rensselaer and Saratoga, Tonawanda, Watertown and Rome.

The Senate made an order for a standing committee on railroads, and this committee, consisting of Messrs. Tallmadge, Maynard and Halsey, reported a bill for the "Hudson and Erie railroad," on the application of the committee of the Syracuse

published in March, 1821, should not be "reduced or diverted at any time before the full and complete payment of the principal and interest of the moneys borrowed and to be borrowed," for the completion of the navigable communication between the lakes and the Atlantic Ocean. The rates of toll referred to, did not contain any charge for the transportation of passengers. In 1835, passengers in freight boats were charged at the rate of one cent and five mills per ton per mile, estimating full grown persons at 150 pounds each, and children under five years at 75 pounds. In 1826, passengers over twelve years were charged two mills each per mile on freight-boats; but as these rates on passengers were established after the adoption of the Constitution, there was no constitutional difficulty in authorizing by law the construction of railroads, which it was obvious would divert the transportation of passengers from the canal.

cuse Convention, embracing the terms and conditions set forth in their resolutions. Mr. Maynard, of Oneida, made an able speech in favor of the bill, but the enacting clause was rejected in the Senate, by a vote of 13 to 8. At the same session, an act to incorporate a company with a capital of ten millions, for the New York and Erie railroad, passed the Assembly by a vote of 100 to 2, and the Senate by 23 to 3.

In the Assembly, Mr. Stilwell made a general report on the subject of railroads, and recommended that the State should aid their construction, by becoming "a stockholder in all leading routes." This report alludes to the fact that the message of Governor Clinton, in 1827, the year after the railroad from Albany to Schenectady was chartered, did not allude to the subject of this new mode of conveyance by railroads; although he recommended "the construction of a grand State road from the Hudson to Lake Erie," and seventeen canals, one of which was to form a second water communication from the Hudson river to Lake Erie, by extending the Delaware and Hudson canal from the confluence of the Lackawaxen and Delaware rivers sixty six miles, to Deposit, thence to Bettsburgh on the Susquehanna, thence along its valley, and that of the Tioga and the branches of the latter, to Hornellsville; two hundred and thirty miles, and from that point to be extended "to Portland, on Lake Erie, and to Pittsburgh, at the head of the Ohio."

The report of Mr. Stilwell also alludes to an article in a Baltimore paper of the preceding December, in which it is stated that whilst "all the communications by river and canal throughout the country are suspended on account of the ice, our great railroad* continues in active and steady operation, without the least interruption or hindrance from frost, snow, or any other obstacle." The committee express full confidence that every description of articles will be carried on railways, and that the "owners of Canals in England, contemplate draining them, and laying railways on their site."

At this time, when the practicability and the success of railroads were thus established, the state of New York had completed and then had in successful operation, canals connecting the Hudson river with all the great western and northern lakes, and with the interior lakes, Cayuga, Seneca, and Crooked lake, and had nearly completed the Chemung canal, from Seneca lake, to the Susquehanna river.

The remaining routes, on which canals have since been constructed or commenced, are much better adapted to the use of railroads than canals. On two of them, extensive reservoirs are required to furnish a supply of water; and besides this, they interfere with some of the most important water privileges and milling interests in the state. On the routes of the Chenango, the Genesee Valley, and the Black River canals, railroads, by operating the whole year, and aided by the transportation of passengers, as well as property, might furnish a fair remuneration for the outlay. And if this is so, the loss to the state, for expenditures already made, is fifteen millions of dollars.

There was a time, after the completion of the Erie and Champlain canals, when some of the New England states were agitated with canal projects, and one expensive canal was actually constructed in Connecticut, which proved a total failure, and ruined its projectors. It was fortunate for the New England states, generally, that they waited until the railway and the locomotive gave them a system of internal improvement adapted to the physical condition of their country. Through the same section of country where the capital expended on a canal was a dead loss, liberal dividends are realized on the cost of a railroad.

After the favorable exposition of Gov. Throop, as to the feasibility and utility of railroads, and the liberal views of the committee of the assembly in regard to them, it may be asked why the legislature should pass laws to construct canals instead of railroads, on the routes requiring reservoirs for the supply of water, and an aggregate of two or three hundred locks?

* The "Baltimore and Ohio," completed 60 miles between Baltimore and Frederick.

On the part of the applicants, it was desired that the state should assume the whole expense of constructing and maintaining the work. If a charter was granted for a railroad, it was not certain that the state would loan its credit to the company as had been done in the case of the Delaware and Hudson canal, in 1827, or become a stockholder, as proposed by the railroad committee, in 1832; and if either mode was adopted, a large portion of the cost must be supplied by individual subscriptions; and the applicants insisted that they had a just claim for a canal, to be constructed solely at the expense of the state, as had been done for the inhabitants in other sections.

In 1833 six railroads were chartered; three of these have been constructed—the Utica and Schenectady, Whitehall and Rutland, and Buffalo and Black Rock.

The message of Governor Marcy, which gives an opinion in favor of internal improvements generally, and of the Chenango canal particularly, does not allude to railroads. In the Assembly, Mr. J. C. Baker, of Oneida, made a report on the subject of railroads, recommending the granting of charters for them, guarding them "in such a manner, that the revenue arising from the present or future canals, should in no possible event be affected;" reserving in all cases the power to alter, amend, modify, or repeal any charter. The committee, in this report, express an opinion "that there is no branch of internal improvement that has yet been devised, that will tend so much to facilitate early and prompt intelligence, and afford as great facilities for that purpose as railroads."* And that there is "no rational ground to doubt their final success;" "and it they will not supersede, that they will at least operate as a substitute for canals, in those parts of the country where canals are impracticable."

In 1834, ten railroads were authorized, five of which have since been constructed—Auburn and Syracuse, Buffalo and Niagara Falls, Long Island, Lockport and Niagara Falls, and Saratoga and Washington.

The message of Governor Marcy takes a comprehensive view of the extent and success of the state canals, urges the necessity of doubling the locks and deepening and widening the Erie Canal, in order to facilitate transportation, and compete successfully for the Western trade; yet railroads are not commended as among the facilities needed, or as substitutes for canals, on dubious routes for the latter kind of improvement. An act passed at this session, authorizing the governor to appoint an engineer to explore and survey a route for a railroad, commencing at the city of New York, or at the most eligible point in its vicinity, through the southern tier of counties, by way of Oswego, to Lake Erie, at some eligible point between Cattaraugus Creek and the Pennsylvania line. The sum of \$15,000 was appropriated to defray the expenses of the survey.† An act was also passed, Chap. 187, declaring it a misdemeanor to place obstructions on any railroad, punishable by imprisonment in the county jail for one year, and a fine of \$250.

In 1835, although some thirty-five applications were made for independent railroads, including several on the line from Utica to Buffalo, none of them were chartered. The only successful application was the authority given to a turnpike company to construct a railroad from a point near the north bounds of the village of Kingston to tide water. There was an application for a railroad from Utica to Syracuse, which was opposed by several remonstrances from Onondaga county. Two routes were applied for from Syracuse to Rochester, one on the line of the canal, and another from Auburn to Rochester; the latter was defeated by a vote of 66 to 40, in the Assembly. Application was made for a subscription by the state to the Erie railroad; when this failed in the Assembly, Mr. Wetmore

introduced a resolution to have the work done by the state; this was laid on the table, and subsequently, Mr. Ogden, of Delaware, introduced an amendment to a bill for a loan of the credit of the state to the company, in sums of \$500,000 each, as the work progressed.

In Governor Marcy's message, he alludes to the survey of the route of the Erie railroad, by Benjamin Wright, and has a favorable notice of the work itself, stating that by this road, "intercourse with the flourishing regions of the West would be opened earlier in the spring, and continued later in the autumn, than it now is or can be by the Erie Canal."

The report of Benjamin Wright, (Assembly Doc. No. 107, 1835,) makes the distance from a point on the Hudson river, twenty-four miles above New York, to Lake Erie, four hundred and eighty-three miles; and the cost, "to grade and bridge over rivers, for two tracks, and put down one track," he estimates at \$1,762,260. "These estimates are, in my opinion, liberal, and such as will make an excellent road," including the construction of a long wharf into the Hudson river. The engineer assumed one hundred feet as the highest grade, and 500 feet as the shortest curve. At a point, five miles from Lake Erie, and seven hundred and forty feet above it, it was contemplated to descend five hundred and six feet by an inclined plane, in a distance of a mile and a half.

A resolution was passed in the Assembly, on motion of Mr. J. I. Roosevelt, of New York, calling on the canal commissioners to furnish information to the house as to the relative expense of constructing and maintaining canals and railroads, and of transportation on them. This resolution was answered by detailed statements, prepared by John B. Jarvis, Holmes Hutchinson, and Frederick C. Mills, which are given in Doc. 296, of 1835. Taking the facts obtained at that time, the report concludes that canals, in their construction and maintenance, are less expensive than railroads, and that the relative cost of conveyance is as 4.375 to 1, a little over four and one-third to one, in favor of canals; this is exclusive of tolls or profits. The report adds, in favor of railroads, that "they admit of advantageous use in districts where canals, for the want of water,* would be impracticable," and would be preferred where high velocities are required, as for the transportation of passengers, and under some circumstances for the conveyance of light goods.

Baltimore and Ohio Railroad Extension.

A gentleman just from Cumberland informs us that when last heard from the track had been pushed on to the 44th section—a point 44 miles west of Cumberland, and within less than one mile of the Crabtree summit cut. The heavy grade of 117 feet to the mile, first encountered on the 30th section, is thus surmounted, and we state with pleasure that the performance of the locomotive power, in its every-day working upon this grade, in its entire extent, has to a gratifying degree realized anticipations founded upon the results of the experimental running on the first two miles of the grade, conducted (on July 22d) under the eye of Benj. H. Latrobe, Esq., Engineer in Chief.

Eight miles beyond the summit, the track will have reached Oaklands, the Glade station. This will be accomplished in the course of the coming month, and in full time to secure the fall live stock transportation centering there from the surrounding Glade country. And it may not be amiss to state in this connection, that the passenger and freight receipts on the road, as now extended, are much exceeding what was expected. A passenger train leaves Cumberland daily for Piedmont, connecting there with the iron train further west, and at the Paddytown depot with a tri-weekly line of stages for Parkersburg, via the North-western Turnpike.

The community thus see that this magnificent enterprise is steadily and rapidly advancing towards

* At this very time the state was constructing six reservoirs to supply the Summit Level of the Chenango canal with water. It was not absolutely "impracticable," in this way, to get water for the canal. But a railroad, by concentrating passengers and the transportation of property, would have been more profitable and useful.

the western termini—verifying at the various stages of its progress, the assurance of its able Chief Engineer officer in regard to the time of completion. —*Baltimore Patriot.*

Fourth Annual Report of the Pennsylvania Railroad.

We give below, in full, the Report of the Directors of this work, and an abstract of that of the Chief Engineer. The importance of the work is a sufficient reason for the large space we devote to the report.

The Board of Directors submit to the Stockholders, in compliance with the provisions of the charter, a statement of the affairs of the Pennsylvania railroad company, from October 31st, 1849, to December 31st, 1850, the date now fixed by law for the termination of its fiscal year.

The report of the treasurer shows the receipts of the company, on account of capital stock to the latter date, to have been.....\$5,822,210 00
And the disbursements.....5,095,546 12

Leaving a balance of.....726,663 88
Which, with the amount of subscription yet to be collected.....1,013,640 00

Constitutes the available means of the company for the prosecution of the work.....\$1,740,303 88

The board invite the attention of the stockholders to the fact, that the amount of interest chargeable to construction account, being the balance of the interest account from the date of the organization of the company to the 31st of December last, after deducting interest received and the net earnings of the road, is but \$211,123 29.

The reports of the Chief Engineer, J. Edgar Thomson, Esq., and of the late Superintendent of Transportation, Herman Haupt, Esq., now General Superintendent, exhibit in detail the operations of the departments with the management of which these gentlemen are respectively charged, and various other matters of more or less interest to the stockholders.

The eastern division of the road has been completed to the Tyrone Forges in a manner entirely satisfactory to the board, and will not, in their estimation, suffer by contrast with any other railroad in the country. Between that point and Altoona, where the work upon the light sections was delayed some four months for want of means, its condition is by no means satisfactory, and measures will be taken in the course of the ensuing season to have this portion of the work and the Hollidaysburg branch brought up to the high standard, which a proper regard for public opinion and the interest of the stockholders has prescribed.

Upon the western division the work thus far been well done, and has been executed as rapidly, except upon a few sections, as was deemed consistent with durability. The unhappy feuds among the laborers, resulting, in some cases, in loss of life, have been a source of delay and inconvenience, but it is believed that a recurrence of these discreditable scenes will be prevented by the admirable police arrangements made, under the sanction of the board, by Edward Miller, Esq., the associate engineer in charge of that division. If, however, this expectation should not be realized, a firm local judiciary and a reliable military force are ready to assert the supremacy of the law promptly and effectively.

The board have contracted upon favorable terms for a sufficient quantity of iron for the superstructure of the western division. While an honest State pride is gratified in adverting to the fact that the road is thus far constructed exclusively of Pennsylvania material, the board have no hesitation in expressing their full conviction that the difference in price will be more than counterbalanced by the superiority of our rails over the best of those recently imported for other roads. The contractors, as an evidence of their own confidence, bind themselves to replace, without charge, all rails which shall give way within five years, of an original defect.

The eastern division of the road was opened for use to the Portage intersection, one mile west of

* An opinion, which no one would be disposed to call in question in 1833, has proved entirely erroneous by the operations of the electric telegraph, ten years thereafter.

† Mr. Todd of Putnam, in behalf of the Railroad committee, made a report in the assembly adverse to the application for state aid to the railroad. And Mr. Beardsley, of Herkimer, made a report against an appropriation for a survey.—Doc. 336, 337—1834.

Hollidaysburg, on the 17th of September last, too late to secure to the company the full benefit of the fall trade and travel, and the Portage railroad was closed for repairs, by order of the canal commissioners, on the 7th of December. During the months of October, November and December, the net receipts for passengers and freight were \$42,084 84; equal to an annual interest of \$3 82-100 per cent upon the cost of this division, including the Hollidaysburg branch, with the interest thereon chargeable to construction, and of all the cars, locomotives, machinery and fixtures in use. This result induces the board to believe that the road will, during the current year, earn six per cent upon the cost of whatever portion of it may be brought into operation, and that it will henceforward yield an equal or larger per cent upon the whole outlay, productive and unproductive, after making proper provision for depreciation, by the creation of an ample contingent and renewal fund.

The local trade and travel increase so steadily as to leave little room for doubt that they will, in a few years, be adequate to the support of the road and the payment of the interest upon its cost.—Even now the receipts at stations which had no name when the road was located, exceed those at some of the largest towns upon the Juniata. A branch road is in course of construction to Blairsville, with means provided for that purpose by the citizens of that borough, and its extension by local effort to the town of Indiana, or the substitution of a plank road, will depend upon the results of surveys now in progress. The plank roads from Bedford to Hollidaysburg and from Somerset to Johnstown, with numberless kindred improvements under construction or in contemplation, will aid in swelling the receipts of the mother work, to which they owe their existence, and in developing the dormant wealth of Pennsylvania.

All other things being equal, the geographical position of Philadelphia will secure to her a virtual monopoly of the trade of the west against all rivalry. That trade is, however, too tempting a prize to be permitted to remain in any hands but those which are as prompt to defend as they are able to hold it. We must look the fact in the face that it is lost, in part at least, to Philadelphia, if further delay be suffered in the mountain division of the Pennsylvania railroad. The Baltimore and Ohio railroad is now under contract throughout its entire length. From Cumberland westward 5,000 men are at work upon it; 22,000 tons of rails have been imported for it, and the energy and sagacity which mark its management, permit no doubt that it will be prosecuted with the utmost vigor till it reaches the Ohio river. The Erie railroad, hitherto driven forward with very little regard to cost, must be completed to Lake Erie in May next, in compliance with the condition upon which \$3,000,000 of State and \$750,000 of private stock were relinquished to the present stockholders.

To compete with these unbroken lines from the seaboard to the western waters, managed, as they will be, by the ablest merchants of her sister cities, Philadelphia will have the eastern and western divisions of the Pennsylvania railroad connected by a link of 36 miles, embracing ten inclined planes, the crossing of which has heretofore generally consumed sufficient time to make the trip between Philadelphia and Pittsburg upon a first class railroad, and the use of which will entirely cut off from this company one of its largest prospective sources of revenue, the transportation of live stock from points west of the Alleghenies, to the eastern grazing counties of Pennsylvania, and to the Philadelphia and New York markets.

It is suggested by the chief engineer, that the sum of \$1,500,000 will suffice to build a road from Altoona to the head of plane No. 2, by which the worst portions of the Allegheny Portage road would be avoided, and the time consumed in crossing the mountains materially reduced. As a last alternative, this proposition might be adopted; but while the proposed connection would be, in many points of view, a decided improvement over the one now in use, it would fall very far short of accomplishing the primary purpose for which this undertaking was projected, of securing to the commonwealth and its two great cities the benefits accruing from the possession of the trade and travel of the west, by furnishing a route which should in all re-

spects compare favorably with the best of its rivals. That object can never be attained while any link, however small, shall remain under the ever-varying management incident to the incessant changes of State and local politics.

With a view to procure that result at the earliest possible day, and to promote, at the same time, what they conceive to be the true interests of the present stockholders, the board earnestly recommend that immediate provision be made for putting the mountain division under contract at as early a period of the ensuing spring as the character of the ground will permit. To build this portion of the road, and partially equip the whole, will require the filling up of the capital stock of the company to the limit fixed by the recent action of the stockholders, under the authority conferred in the charter. The amount subscribed to this date is \$6,835,850, which will be increased more than \$100,000 by the issue of stock, deliverable upon the completion of a portion of the contracts upon the western division, leaving a sum to be supplied slightly exceeding \$3,000,000.

In asking at this time for this large additional subscription, the board are aware that they are drawing freely upon resources already heavily taxed; but they do not, on that account, hesitate to make the appeal. They make it in the confident belief that the sum they ask will, through the instrumentality of this road, be returned ten-fold to Philadelphia and her citizens before the present generation shall have passed away, and that their demand will elicit a response worthy alike of the source from which it is to emanate, and of the object to which it is to be applied.

If we could forget what is due to ourselves, we are not at liberty to overlook our obligations to others who have united their fortunes with ours in a common destiny, and faithfully fulfilled their part of the implied contract. The extraordinary energy with which the Ohio and Pennsylvania railroad has been driven westward, has concentrated upon that improvement many smaller ones, originally projected with a view to very different connections, and created others destined to add largely to its revenues, and to those of the Pennsylvania railroad. From the present year forward that road and its countless tributaries will pour upon the western terminus of ours an immense amount of tonnage, to find its way slowly, and at a comparatively heavy cost, over a broken line, till the completion of our entire road shall open an outlet for this and other roads whose most available eastern connection is still an open question, whose capacity shall be equal to any demands which can be made upon it.

The board have made the best arrangements in their power for the transportation of merchandise and produce between Philadelphia and Pittsburg, during the continuance of canal navigation for the current year, at prices varying from fifty cents to one dollar per hundred pounds. They have fixed these rates, not so much with a view to present profit as to the promotion of what they believe to be the true interests of this company, and of the mercantile community, with which it is so intimately identified. They have, after the most careful investigation and mature consideration, decided upon starting from the outset with a uniform tariff of low charges, in preference to the sliding scale, which has heretofore mitigated so seriously against the increase of the inland trade of Philadelphia and of the revenues of the commonwealth.

The board are gratified to have it in their power to state that they are sustained in the adoption of this system by the concurrence of the intelligent gentlemen who now compose the canal board, and that they are assured of their cordial co-operation in fixing it as the settled policy which shall hereafter govern the operations upon the State works as well as those of this company.

They bring their action upon this subject to the notice of their constituents, in full confidence that it will meet their hearty approbation.

By order of the board.

W. C. PATTERSON, President.

From the Report of J. Edgar Thomson, Esq., Chief Engineer of this company, we learn that since the previous report, the road has been ex-

tended from Lewistown to the Portage railroad, a distance of seventy-eight miles, making a continuous line of railroad from Philadelphia to Johnstown, 279 miles in length. The amount already paid on the eastern division, up to the 1st of January last, as taken from the books of the treasurer, is given below, together with the estimate of the ultimate cost of the road.

	Paid.	Present estimate.
Graduation	\$2,068,179 35	\$2,175,000
Superstructure	1,400,357 86	1,485,000
Engineering, etc	134,799 03	145,000
Cost of road	3,603,336 24	3,805,000
Land damages and real estate	167,062 03	215,000
Total	3,770,398 27	4,020,000

The mountain division, including the space from Altoona to the Stone Viaduct over the Conemaugh, on the Portage railroad, nearly eight miles east of Johnstown, is 31½ miles in length. There is much heavy work here, and the proposed tunnel will prove a tedious job. The present estimate of the cost of this division is—

Graduation, etc., from Altoona to Laurel Swamp Summit, 15½ miles	\$1,065,000
Graduation, etc., from Laurel Swamp Summit to Stone Viaduct, 16½ miles ..	430,000
	1,495,000
Engineering	\$45,000
Land damages, etc	35,000
Superstructure	350,000
	430,000
	\$1,925,000

The importance of placing this division under contract at an early period is strongly urged, in view of the completion of the New York and Erie road, and the contemplated extension of the Baltimore and Ohio railroad to the Ohio river in 1852, which are both regarded as formidable rivals.—Still the advantage is represented to be in favor of the Pennsylvania road, on the score of distance as compared with the route to Cleveland by the New York and Erie and Lake Shore railroads, and on account of its moderate grades, as compared with the Baltimore and Ohio road.

The report says:

"There being no conveyance at present through Pennsylvania, that can compete in time and comfort with the railroad and steamboat lines from Cincinnati, by the lakes, to New York and Boston, the whole tide of travel between the east and west, which far exceeds in amount the calculations of those who have not witnessed it, now flows in that direction. But when our road is finished, and the Pennsylvania and Ohio railroad is extended to the Cleveland and Columbus railroad, which will be ere we reach Pittsburg, the advantages in our favor above mentioned (it the mountain division is completed) must turn the tide of travel back upon us, with increasing numbers, from the reduced fare and decreased time (24 hours from Philadelphia to Cincinnati) which these will enable us to offer, giving abundant sources of revenue from passengers alone, to satisfy the most exacting capitalist."

The whole of the western division, from the Stone Viaduct to Pittsburg, a distance of 85½ miles, is now under contract. The estimate of the cost of this division is as follows:

Graduation, etc	\$1,990,000
Superstructure	875,000
Cost of construction	2,865,000
Engineering	\$115,000
Real estate and land damages ..	95,000
	210,000
Total cost of western division	\$3,075,000

The cost of the whole road, according to the above estimates, would be—

Eastern division, 130 miles.....	\$4,020,000
Mountain " 31½ "	1,925,000
Western " 85½ "	3,075,000

Main line.....246½ "\$9,020,000

In addition to this, the Hollidaysburg branch, 6½ miles in length, is estimated at \$110,000, and the Blairsville branch, 2½ miles in length, \$50,000—making \$160,000; which when added to the above, makes the total amount \$9,180,000.

The profits of the road, as far as it has been in operation, have been diminished by the tax upon its tonnage, imposed by the commonwealth. It is hoped that this restriction upon its operations may be removed, when it is believed it will do a profitable freight business; but even should the restriction continue, it cannot fail (says the report) to yield ample profits to its stockholders from travel and such freights as will pay for the increased speed.

New York.

Ogdensburg Railroad.—The Committee of the Ogdensburg Railroad have issued a circular inviting the stockholders of the company to lend the company \$750,000, the reasons for which are stated as follows:—

The extreme pressure of the money market renders it necessary to fund the floating debt of the company. To this end bonds have been prepared, running ten years from April 1, 1851, bearing seven per cent interest, payable semi-annually, and convertible at any time prior to January, 1860, into stock of the company at par. Seven hundred and fifty thousand dollars of these bonds of one thousand dollars each, are now offered to the stockholders at fifteen per cent. discount. Each stockholder will be entitled to half the amount in bonds which he holds in stock. Some may not find it convenient to take their proportion, and those who risk for a larger amount than they are entitled to, will have their proposition considered in making the distribution, provided the balance is not taken up by parties offering more than 82 per cent.

Of the capital stock there is now paid in.....\$1,500,000
The amount of mortgage bonds is.....1,500,000
The issue of convertible bonds now proposed to stockholders, say.....750,000

Making the capital stock paid in and funded after the disposition of the bonds.....\$3,750,000

The large equipment required for working the road, the bridge over Lake Champlain, the loss on bonds, and interest on funded and floating debt chargeable to construction, will swell the total cost of the road when finished, to about \$4,000,000; but any balance above the \$3,750,000 can be easily managed until met by a sale of the forfeited stock belonging to the company at par.

Cincinnati and St. Louis Railroad.

We are happy to announce to the people of Cincinnati, and the friends of the Ohio and Mississippi railroad, that the construction of this great national thoroughfare is about to be commenced under very favorable auspices. We understand a further section of the road, extending to the valley of the east fork of White river, will be put under contract as soon as it can be properly located. This will intersect the Jeffersonville road. Several of the counties in Indiana engage to prepare the road for the superstructure through their respective limits, and take their pay in the stock of the company. Citizens of Cincinnati, who desire the speedy completion of this road, come forward promptly and subscribe to the stock of this company. Delay no longer, lest the trade and travel of the West be diverted from you.

We call attention to the advertisement in our columns of to-day, for letting forty-five miles of the road. We are informed that a portion of the Illi-

nois division of the line will be immediately put under contract, the surveys just having been completed.—*Cin. Com.*

Monetary.

Condition of the Banks of the United States from 1834 to 1851.—The figures indicate the condition of the banks at a period at or near January 1st of each year. The amount of "bills of other banks on hand," (with the addition or subtraction of the balances due to or from other banks,) is deducted from the circulation:—

Yr.	Num. of banks & branch's.	Capital.	Circulation.	Deposits and other liabilities.	Profits.	Total Liabilities.	Notes & bills of exchange.	Specie.	Stocks, real estate, &c.	Total Resources.	Ratio of circulation to specie.
1834	506	\$300,005,944	\$71,957,299	\$15,666,986	\$21,817,865	\$350,448,084	\$324,119,499	\$26,641,753	\$18,686,832	\$369,448,084	\$2 70
1835	704	231,260,397	81,494,734	103,401,840	20,979,233	367,126,144	366,163,831	40,019,625	28,024,085	437,126,144	1 85
1836	713	251,875,292	106,711,314	141,103,674	38,514,300	538,204,670	459,506,980	43,019,594	40,678,086	538,204,670	1 85
1837	788	290,772,091	115,409,571	163,957,474	40,153,199	610,292,735	525,115,702	37,915,340	47,261,693	610,292,735	3 04
1838	829	317,636,778	93,994,618	144,686,863	42,579,998	598,898,267	486,631,687	35,184,112	78,082,458	598,898,267	2 67
1839	840	327,132,512	108,156,180	153,186,394	23,667,713	612,111,799	499,278,015	45,132,673	74,701,111	612,111,799	2 40
1840	907	363,623,227	91,212,577	120,058,908	34,555,530	604,236,142	474,133,199	35,207,690	59,895,362	604,236,142	2 59
1841	904	333,608,959	76,631,611	107,786,327	26,886,873	534,392,516	386,487,662	34,913,958	113,320,896	534,392,516	2 20
1842	784	260,171,797	59,412,698	75,183,796	26,886,873	421,627,164	332,957,569	28,440,423	69,229,172	421,627,164	2 09
1843	691	228,861,948	46,047,260	60,392,775	20,744,720	350,189,574	254,544,937	43,898,269	64,268,106	350,189,574	1 27
1844	696	210,872,066	59,632,267	90,392,656	18,170,091	379,067,189	254,544,937	33,515,806	71,128,831	379,067,189	1 20
1845	707	206,045,969	74,186,119	93,874,548	18,143,469	392,250,205	288,617,131	44,241,942	59,391,832	392,250,205	1 68
1846	707	196,894,309	89,160,694	102,244,262	22,706,827	411,012,462	312,114,404	42,012,055	56,883,903	411,012,462	2 12
1847	715	203,072,622	88,481,233	96,498,610	24,729,994	412,792,369	312,114,404	46,309,765	67,374,108	412,792,369	2 52
1848	751	204,838,175	112,588,921	108,727,578	45,678,866	456,792,860	344,476,582	46,309,765	65,946,513	456,792,860	3 43
1849	782	207,309,361	104,167,440	97,884,980	23,900,112	433,351,893	332,323,105	43,619,368	57,709,330	433,351,893	3 39
1850	824	217,317,211	119,977,641	118,432,904	18,607,385	474,325,141	364,204,078	45,379,345	64,741,718	474,325,141	3 64
1851	871	227,469,074	133,755,974	133,937,109	32,930,378	529,122,535	412,607,653	48,671,138	66,843,784	529,122,535	2 73

New Hampshire.

Contoocook Valley Railroad.—The debt of this company is about \$120,000, of which about \$60,000 became due in July last. The remainder becomes due in 1855, and is bonded. The legislature, at the last session, authorized the company to issue bonds to the amount of \$60,000, bearing 8 per cent. interest, and payable in ten years. Some of the stockholders have taken bonds, and others refused. Suits were accordingly commenced last week by the creditors of the road, against some

of those stockholders who have refused to take the bonds, on the ground that they are *individualy liable* for all the debts of the corporation.—*Nashua Gazette.*

New York.

Buffalo and New York Railroad.—The Buffalo and New York city railroad, as we learn from the Buffalo Commercial Advertiser, is to be put under contract immediately, between Buffalo and Attica. This, says the Commercial, settles the question in relation to this section of the road, and secures its early completion through the entire length. Between Attica and Hornellsville the road is now rapidly approaching a readiness for the superstructure along the whole line. We learn that it is the intention of the company to have the road in operation between Hornellsville and Portage by the 1st of November, and between Portage and Attica by the 1st of January next.

Erie and New York city Railroad.—A meeting of the Erie and New York city railroad company was held at Jamestown on the 12th inst., at which the following officers were elected:—Benjamin Chamberlain, President; Thaddeus S. Sheldon, Secretary; Robert Newland, Treasurer. Messrs. Samuel Barrett, Augustus F. Allen, and William Hall, were appointed a Committee to draft and report By-Laws for the regulation of the company.

This road is intended to connect the city of Erie with the New York and Erie railroad at the mouth of the Little Valley Creek, in Cattaraugus County, running through the southern portions of Cattaraugus and Chataque, and shortening the distance from the Dunkirk route between this city and Erie several miles.

Ohio.

Marietta and Cincinnati Railroad.—At a meeting of the stockholders of the Marietta and Cincinnati railroad company, held at Chillicothe on the 20th ult., the following gentlemen were elected directors, to serve for the ensuing year:—

Hon. W. P. Cutler, John Mills, Esq., Douglas Putman, Esq., Noah L. Wilson, Esq., John Ballard, Esq., A. B. Walker, Esq., Hon. John Madeira, Hon. Allen Latham, Francis Campbell, Esq., Simon Ratcliff, Esq., A. Hegler, Esq., Hon. Hugh Smart, Hon. Ruel Beeson.

East Tennessee and Georgia Railroad.

This road is now open to Calhoun, on the Hiwassee river, a distance of forty miles from Dalton, the Southern terminus. The Atlanta Intelligencer states that it is expected forty miles more of the road will be completed in December next. This will bring it to the Tennessee river, about 25 or 30 miles from Knoxville.

Virginia and Tennessee Railroad.

A meeting was held in Abingdon, Virginia, on the 28th ult., for the purpose of adopting measures to forward the Virginia and Tennessee railroad, at which it was resolved to call a convention of all the friends of the enterprise, to be held at Abingdon on the 8th day of October. All the counties along the line of the Tennessee and Virginia railroad, in Tennessee, and along the line of the Georgia and Ohio railroad in Georgia, were invited to send delegates.

Kentucky.

Maysville and Lexington Railroad.—We notice that the President of this company has offered for sale the Fayette, Bourbon, Maysville and Mason county bonds. Capitalists can nowhere find better securities than these, and they should command the highest price in the market.

The Hammer Superseded in Blooming Iron.

At the last meeting of the Birmingham Institution of Mechanical Engineers, a paper was read "On a New Machine for Blooming Iron." The working portion of the machine consists of three eccentric, cuspidated, semi-lunar-shaped cams, working simultaneously, and all kept rotating in one direction by wheels and pinions, firmly connected together in a strong frame, and set in motion by a steam engine. The convex sides of these semi-cylindrical cams are deeply grooved and serrated, and their peculiar form is such, that on dropping a bloom of iron into the concavity of the upper cam, as it presents itself, it is immediately drawn into the vortex, or centre of motion of the three cams at the instant when that motion is the largest. As they rotate, the convexities, in consequence of the eccentricities of the centres, approach nearer and nearer—the ridges and rough surfaces, squeezing, rolling and kneading the iron in all directions, like squeezing a sponge in the hand. The cinders and impurities are thus ejected, and fall out beneath the machine; and the cams, in the latter part of their rotation, having closed the space between them to the smallest dimensions in the revolution, the bloom is elongated and ejected in the form of an iron cylinder. For the production of superior iron, it had hitherto been considered that the hammer was indispensable; but for all purposes of efficiency, rapidity of action and economy, this machine, it was assumed, would come into general use. From its strength and simplicity, it would not cost in repairs £20 a year; while a hammer involved expenses of ten times that amount, and the cost of replacing a broken hammer was well known in the iron trade to be a serious item. It turned out a finished bloom, entirely free from cinder in twelve seconds, the engine working moderately; while under the hammer it could not be completed under eighty seconds.—Thus by the machine, the cylindrical bloom, when ejected, was still at welding heat, and could be at once passed through the rolls, while from the hammer it had again to pass through the furnace.—*London Mechanics' Magazine.*

Mineral Veins, &c.

Every mining district has its conducting metaliferous channels, cross-courses, or feeding-pores; and the whole accumulated evidence obtained in all parts of the world clearly proves the fact, that the contents of the veins, or lodes, depend on the character of the rocks they traverse, as represented in the sketches. It is of great importance to bear this fact in mind, because veins, which have been particularly rich at one place, have often led persons to suppose that the continuation of the same lode must lead to equal riches, although such lodes may intersect barren rocks. After the discovery of rich mines, it was supposed that the adjoining sets would be equally productive; but old mining proprietors have, long ere this, been undeceived. To bring forward a sett to the notice of the public on the strength of its being situated near a good mining district, is very deceptive. Every mining establishment ought to be in possession of maps, showing the general bearings, undulations, and variations of their respective productive bands of ground, with the elvans and other rocks carefully laid down in a correct map by their agent—without which the explorations and selections of sets must be attended with great risks. Guess-work, "where it is there it is," is an extremely bad principle to go by, even with a good practical miner; but, when exposed to abuses and changes of agents, the consequences may be easily conceived. After incurring great expense in carrying on works through unproductive rocks, mines have frequently been abandoned, when within a few feet of a bunch of ore, for the want of knowing the character of the ground, flookans, slides, &c. On the other hand, works are carried on in unproductive ground at a great cost without a chance of success, simply because the lode happens to be in the same direction as a neighboring rich mine, or some other vague and indefinite indications; therefore, the practical knowledge of experienced miners reduced into a principle, so as to establish rules to avoid useless explorations, and lead to the discovery of the richer deposits, are objects of the greatest importance. It is essential to the interest of every mining proprietor to know the general character of the dissemina-

tion and local concentration of the minerals in the district, and indispensable to him in forming a judgment of the value of his property, and the mode of working adopted by the miner, to guard him from being led away by loose reports. The more closely and minutely the investigations are made, the more convincing are the results of this grand law of nature; therefore, this general principle of metalliferous crystallization may be safely applied to any mining district in every part of the world, to enable a person to know where the minerals have been principally accumulated, and where scarcity of minerals prevails. These laws of terrestrial physics are, therefore, obviously of vast importance to the practical miner; and the elucidation of the subject to the furthest practical extent is the greatest desideratum which now remains in the science of mining, since the operations carried on for the discovery of minerals not only constitute one of the heaviest expenses of mines, but it is the vague and precarious result of these trials which chiefly stamps the proverbial character of hazard and uncertainty which is attached to the pursuit.

The Koh-i-noor Diamond.

"The Koh-i-noor diamond, or 'mountain of light,' is believed by the Hindoos to have descended from their mythological heroes. It is $1\frac{1}{4}$ inches long, one inch broad, and rises half an inch above its gold setting. It weighs 280 carats, and is said to have weighed when rough 793 carats. This diamond is set in an amulet, with a diamond on each side, about the size of a sparrow's egg. Runjeet Sing has also a ruby of considerable size, with the names of several kings engraved on it, and among others those of Aurungzebe and Achmed Shah. He has also a topaz as large as a billiard-ball, for which he paid 20,000 rupees. The musnud of Aurungzebe was of solid gold, and, with the peacock ornament richly studded with jewels which crowned it, was estimated at 20 millions of gold. Over the palace at Delhi was this inscription:—'If there be heaven on earth it is here.' The Prince Aulungeer, in 1658, deposed his father, Schah Jehan, emperor of Delhi, and usurped his throne. He caused to be constructed the famous 'Tukht-i-tuons,' or peacock throne, which represented in appropriate jewels a peacock, with its head overlooking, and its raised and spread tail overshadowing the person of the emperor when sitting on the throne. The natural hues of the bird were exquisitely imitated by the richest gems of the world, and the eyes were supplied by two celebrated diamonds, the largest known, called (as every Asiatic double name must have a single), 'Koh-i-noor,' the 'mountain of light'; and 'Koh-i-Toor,' 'the mountain of Sinai.' Having completed this throne, relinquishing the name of Aulungeer, or 'Grasper of the Globe,' he assumed that of Aurungzebe, or 'Ornament of the Throne.' He died in 1707, aged 87, and his throne remained in possession of his successors till 1728, when Nadir Shah invaded Hindostan, took and plundered Delhi, and massacred 125,000 men, women, and children. Together with 60 millions of other plunder, he carried off and broke up the peacock throne; but, being assassinated on his return towards Persia, in the year 1729, his treasures fell to his general, Ahmed, chief of the Abdalli Afghans, of Cabul, called also the Doorani, from each man wearing a door, or pearl, in the right ear. He seized on the throne of Cabul; in the confusion of this exploit, the Koh-i-Toor was for ever lost. He kept possession of the Koh-i-noor and, dying, bequeathed it to his son and successor, Schah Timour, who left it with his crown to Schah Zemaum, his eldest son. He was deposed, and his eyes put out, by his next brother, Schah Shujahoolmoolk, who got the Koh-i-noor and the kingdom. He, in his turn, was ejected by Schah Mahmoud; the third brother, who was Schah, or king of Cabul. Schah Shujah, however, retained possession of the diamond, and he and Schah Zemaum, whom he had blinded, took refuge at the court of Runjeet Singh, the Rajah of Punjab, in Hindostan, who at first received them hospitably, and made war on the

* The Koh-i-Toor, "the mountain of Sinai," was plundered by Nadir Shah, afterwards taken from the Persians by the Russians, and is now one of the imperial crown jewels; it weighs 193 carats, and is valued at £369,800.

usurper, Schah Mahmoud, from whom he took Cashmere for himself, which he held. But in a short time Runjeet began to oppress the two ex-kings, extorted all their wealth, and, finally, the Koh-i-noor from them. They then came over to Loodianah, in our territory, where they existed on the annual pension of 60,000 rupees (£6,000) each, and 6,000 rupees (£600) to each of their eldest sons. I saw them at Loodianah, on the Hyphasis, in 1812. Runjeet Singh had the diamond at Lahore his capital. A Bengalee shroof, or banker, named Seelchurd, resident at Loodianah, having occasion to visit Lahore on the Rajah's business, asked his highness for permission to see the jewel, which being granted, Seelchurd fell on his face and worshipped the stone! Its subsequent history and recent capture by the Anglo-Indian army is too well known to need recapitulation.

Ships, Roads, Railways, Canals.

There are employed in the yearly transit of Great Britain, with the world and with her own shores, 33,672 sailing vessels, and 1,110 steam vessels, employing 236,000 seamen. Calculating the value of each ship and cargo, as the value has been estimated before parliament, at £5,000, we have an aggregate value—sailing vessels, steamers, and their cargoes included, of £173,910,000. Further, supposing that the yearly wages of the seamen, including the officers, were £20 per head, the amount paid in wages would be £4,720,000. The railways now in operation in the United Kingdom extend 6,000 miles, the cost of their construction (paid and to be paid) having been estimated at upward of £350,000,000. Last year they supplied the means of rapid travel to above 63,000,000 of passengers, who traversed above a billion of miles. Their receipts for the year approached 114 millions of money, and nearly three-quarters of a million of persons are dependent upon them for subsistence. The turnpike and other roads of Great Britain alone (independently of Ireland) present a surface of 120,000 miles in length, for the various purposes of interchange, commerce, and recreation. They are maintained by the yearly expenditure of a million and a half. For similar purposes the navigable canals and rivers of Great Britain and Ireland furnish an extent of 4,850 miles, formed at the cost of probably £35,000. Adding all these together, we have of turnpike roads, railways, and canals, no less than 130,000 and odd miles, formed at an aggregate cost of upwards of £386,000,000. If we add to this £54,250,000 capital expended in the mercantile marine, we have the gross total of more than £440,000,000 of money sunk in the transit of the country. If the number of miles traversed by the natives of this country in the course of the year by sea, road, rail, river, and canal, were summed up, it would reach to a distance greater than the remotest planet yet discovered.

We extract from the London Builder the organizations and functions of the Juries by whom the prizes are to be awarded in the Great Exhibition:

There are thirty juries, one for each of the thirty classes into which the articles exhibited have been divided, and these juries are formed into six groups. Each jury has a chairman, and has elected from its own body a deputy-chairman and a reporter, the duty of the latter being, as the title tells, to draw up a report upon the class of subjects submitted to his jury. These reports will be published, and if properly made, will describe the state of industry of all nations, and form a permanent record of the Exhibition itself. The juries have to award two medals, the premium size (to be called the "Prize Medal") and the large medal. The small medal has been withdrawn, and will be disposed of by the Royal Commissioners, probably presented to those who, although unrewarded by the juries, are thought to deserve acknowledgment for assistance afforded by them. When a jury has decided on its awards, these awards will have to be submitted to a meeting of all the juries in the same group for confirmation: they will then go to the council of chairmen, to secure uniformity of acting, and will become final as soon as the latter report that they are in conformity to the rules laid down.

The great medal is to be awarded by the council of chairmen only, upon the recommendation made

to that body by the juries: each jury must obtain the sanction of its group of juries to its recommendation of the great medal, before the council of chairmen can take the recommendation into consideration. This medal is to be given only for very pre-eminent and indisputable merit; and the number distributed will be small. The medals, we may add, are to be awarded for excellence only, without reference to countries, or to degrees in the same kind of merit. Instructions as to the grounds on which according to the class, medals are to be awarded, have been given to the juries; and the foreign members of the different juries seem to fall very readily into the work.

American Railroad Journal.

Saturday, September 6, 1851.

The Editor begs to plead his own illness as an excuse for the appearance of the present No. of the JOURNAL.

New York.

Buffalo and New York City Railroad.—This company, having failed to secure the track of the Attica and Buffalo road, have let the contract for the construction of their road from Attica to Buffalo, to Messrs. Lauman, Rockafellow & Moore, who are to receive in payment, one-third cash, one-third bonds, and one-third stock of the company.

Six cargoes of rails have been landed at New York for this company, and part of it was to be delivered at Dansville this week, while other portions are to be received at Hornellsville, Nunda, Portageville, Cuylerville and Attica.

The Warsaw Mirror states, that between Hornellsville and Portageville, "they will commence laying the iron next week." The whole line is under contract now, and will be pushed forward to completion a little more rapidly than any other of equal magnitude has been in this country.

Buffalo and Conhocton Railroad.—The LeRoy Courier, of Saturday last, states that the President and Directors of this road met at Avon last Wednesday, to receive proposals for constructing the road from the Steuben county line through Livingston and Genesee counties to Batavia. A large number of contractors were present, and over one hundred bids were presented. We understand a proposition was made by one man to take the entire contract from the line of Steuben county to Batavia, at fair prices, and assume as part payment therefor, \$100,000 of stock.

Hudson River Railroad.—Before the 1st of October, it is announced that this road will be in operation to Albany. Geo. B. Butler, Esq., secretary and legal agent of the company, has resigned his position, and he becomes a partner and assistant editor of the New York Journal of Commerce.—James Boorman, Esq., of New York, President of the company, resigns his office on the completion of the road, and Wm. C. Young, Esq., the present chief engineer of the road, is to take his place.—When this road is completed, we shall be able to go to Albany in five hours, at most.

Missouri.

Hannibal and St. Joseph Road.—The Marion County Court has made an order for the issue of bonds for \$100,000, the sum voted by the people to be exchanged with the company for certificates of stock.

Pacific Railroad.—The people of Greene county have authorized the county court to subscribe \$100,000 to this important work. The people of Jasper have authorized the subscription of \$20,000.

The Railroad Bridge at Frankfort.

The Frankfort Yeoman announces that this bridge has been completed, and that "the locomotives, with the usual train of cars, passed over it with perfect safety, and without the smallest appearance of injury to the bridge."

Stock and Money Market.

The state of the market remains unchanged.—Money for extraordinary purposes, continues difficult to be had. Bonds of new works are almost a drug in the market, and are sold with great difficulty, and we repeat the advice which we have given to our friends in several of our last numbers, to keep away from eastern markets till we can give notice of a favorable change.

The prospect now is, that money will rule high the rest of the season. It is too late for any important improvement to take place. Fall business is commencing, which will absorb a large amount of capital. Our importations continue large, with unabated shipments of specie. The public mind is greatly excited upon the state of our financial affairs. And even if the present pressure is without reason, it will require time to bring things back into their old channel. There cannot be a doubt, however, that the recent reverse will have a favorable effect in the end. It is necessary occasionally to check our ordinary speed. It is not natural, and the oftener these checks occur, they will accomplish the greatest good, with the least harm.

The Buffalo Express mentions as a new feature in trade, that "the first shipment of corn from the Upper Mississippi, by the way of Chicago and Buffalo, to New York, was made on the 13th of last June, from Fort Madison, Iowa, situated about 200 miles above the mouth of the Illinois river. This consignment, some 13,000 bushels, was purchased by Mr. R. F. Hazard, and by him shipped to G. S. Hazard of this city. At Fort Madison, about 7,000 bushels were shipped in bulk, on board the canal boats Indiana and Heonepin, and the balance in sacks on board steamer Kentucky, which took the canal boats in tow, and proceeded to La Salle, the terminus of the Illinois and Michigan canal. At that point the cargo of the Kentucky was transferred to canal boats, and all brought to Chicago by canal. At Chicago it was shipped on board brig Fashion for Buffalo. The whole cost of transportation from Fort Madison to New York, a distance of some 2,000 miles, was about 28 cents per bushel."

The following shows the Coinage of the Philadelphia Mint for the month of August:

Gold.	Pieces.	Amount.
Double Eagles.....	158,141	\$3,162,820 00
Eagles.....	7,623	76,230 00
Half Eagles.....	44,655	223,275 00
Quarter Eagles.....	125,058	312,645 00
Gold Dollars.....	203,359	303,359 00
Total.....	638,836	\$4,078,329 00
Silver.	Pieces.	Amount.
Half Dollars.....	18,000	9,000 00
Quarter Dollars.....	20,000	5,000 00
Three Cent Pieces.....	352,200	10,566 00
Total.....	1,029,036	\$4,102,895 00
Copper.	Pieces.	Amount.
Cents.....	796,475	\$7,964 75
Total.....	1,835,511	\$4,110,859 75

Gold Bullion deposited for coinage from 1st to 31st August inclusive:

From California.....	\$4,048,800
From other sources.....	96,000

Total..... \$4,144,800
Silver bullion deposited in same time... \$29,000

The total coinage at the Philadelphia Mint from January to August inclusive, amounts to \$31,664,316, of which the gold coinage was \$31,339,080.—The annexed table will show the coinage in each month:

	Gold.	Silver.	3 cent.	Copper.	Total.
Jan..	\$2,620,966	\$76,950		\$7,277	\$2,705,193
Feb..	5,082,987	15,500		16,861	5,115,348
March	6,285,735	6,400		6,537	6,293,672
April	3,176,058	2,400		13,337	3,191,793
May.	3,201,272		37,638	9,699	3,248,599
June.	3,653,248	18,050	28,395	10,165	3,709,858
July.	3,240,495	13,700	21,562	8,215	3,283,992
Aug.	4,078,329	14,000	10,566	7,964	4,110,859

Tot. \$31,339,080 147,000 98,181 80,055 31,664,316

The deposits of the precious metals at the Mint in each month of the present year, were as annexed. The deposits from California, it will be seen, were \$27,097,300:

	Cal. gold.	Other gold.	Silver.	Total.
January...	\$4,940,000	\$60,000		\$5,000,000
February...	2,860,000	140,000	7,700	3,007,700
March.....	2,634,900	37,000	8,400	2,679,400
April.....	2,785,500	75,000	18,000	2,878,500
May.....	3,205,600	65,600	14,800	3,286,288
June.....	3,570,000	60,000	11,700	3,641,700
July.....	3,053,000	77,000	13,800	3,143,800
August....	4,048,800	96,000	29,000	4,173,800

Totals.. \$27,097,800 \$660,600 \$103,400 \$27,810,900

The Evening Journal gives the annexed statement of the quantity of flour, wheat, corn and barley, left at tide water during the 4th week in August in the years 1850 and 1851, as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1850....	105,219	201,892	129,452	18,977
1851....	82,925	71,184	223,405	9,653

Dec.... 22,294 130,708 Inc. 93,953 dec. 9,324

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 31st August, inclusive, during the years 1850 and 1851, is as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1850....	1,157,207	711,794	2,488,212	159,730
1851....	1,810,855	1,350,800	5,285,747	131,613

Inc.... 653,648 639,006 2,797,535 dec. 28,117

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 31st August, inclusive, during the years 1849 and 1851, is as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1849....	1,340,256	894,574	3,662,532	105,237
1851....	1,810,855	1,350,800	5,285,747	131,613

Increase. 470,599 456,226 1,623,215 26,376

By reducing the wheat to flour, the quantity of the latter left at tide water this year, compared with the corresponding period of last year, shows an increase of 781,449 bbls. of flour.

The Oswego Times furnishes the following comparative statement of the shipments by canal during the third week in August, for three seasons:

	1849.	1850.	1851.
Flour, bbls.....	15,095	18,007	30,684
Wheat, bush.....	32,339	20,384	18,976
Corn, bush.....	10,006	24,242	98,480
Ashes, bbls.....	505	269	122
Pork, bbls.....	436	15	620
Wool, lbs.....	33,518	18,945	4,549
Lumber, ft.....	2,150,196	2,687,372	4,588,108

Tolls collected the 3d week in August, with the total from the opening of navigation to August 22, for two seasons:

	3d week in Aug.	Total.
1851.....	\$13,194 47	\$182,199 66
1850.....	8,057 86	139,952 59

Increase..... \$5,136 71 \$42,247 07

From the 13th to the 19th of August, inclusive, 148 vessels passed the Welland canal—74 up and 74 down. Of those passing down, the cargoes of 46 were bound to Oswego, 21 down the St. Lawrence, 4 to Ogdensburg, 2 to St. Catharines, and 1 to Toronto.

New York and New Haven Railroad.—The earnings of the New York and New Haven railroad for August, continue to show a considerable increase over last year. The amount received was, after paying other roads—

Passengers	\$62,817 88
Freight	8,000 00
Earnings	70,817 88
Paid Harlem railroad for 62,334 passengers	4,815 00
Earnings	66,002 15
Net earnings, August, 1850	54,805 00

Increase over 20 per cent. \$11,193 15

Columbia, Penn., Railroad.—The receipts at the office of the Collector of the Columbia railroad, Philadelphia, for the month of August, and for the year thus far, have been as follows:

Amount as per last report	\$230,294 18
Do. month ending August 31, 1851....	49,863 02

Whole amount since Nov. 30, 1850...	280,157 20
Same time last year	244,774 70

Increase

Erie Railroad.—The receipts of the Erie railroad for August are unexpectedly large, and show a considerable gain on the estimates of the company. Compared with July they show a gain of over \$35,000, or more than \$1,200 per day.

Passengers and mail	\$153,793 05
Freight	110,171 08
	263,964 12
Same month, 1850	129,206 12

Increase

The earnings of the Michigan Central railroad for July show a large increase over the corresponding month of last year, as will be seen by the following comparison:

	1850.	1851.
Freight	\$11,324 66	\$23,048 14
Passengers	42,100 51	62,132 46
Miscellaneous	3,159 86	2,041 56
Total	\$56,585 03	\$87,582 16
		56,585 03

Increase

This shows an increase for the last month of nearly 55 per cent.

Virginia Central Railroad.—The receipts of the Central railroad company of Virginia, for the first 6 months, in each of the past two years, were as annexed:—

For passengers	\$30,111 75
For freight	37,058 22
Total	\$68,069 95
Receipts from 1st January to 1st July, 1850:—	
For passengers	\$19,064 97
For freight	14,056 19
	33,121 16

Increase

It will be observed that the increase in the receipts for freight is much greater than in those for passengers.

The following are the receipts of the Xena railroad, for

June, 1851

July, 1851

Cleveland and Columbus Railroad.—The business on the Cleveland, Columbus and Cincinnati railroad continues to increase in a remarkable degree. The receipts for the present month of August, will exceed \$60,000.

The receipts on the Little Miami railroad for the week ending 16th Aug., were..... \$11,292 73
For corresponding time last year..... 8,479 18

Increase

Ohio and Pennsylvania Railroad.—The Pittsburgh Gazette says that the number of passengers carried on the Ohio and Pennsylvania railroad in the week ending Saturday, August 23, was 2,194; or an average of 365 per day. The receipts were \$2,093 92 on the 28 miles of road in use, and the work was done with one engine and one passenger train.

Louisville and Frankfort Railroad.—The receipts in the first fifteen days of August were as follows:—
Receipts from passengers..... \$3,714 20
" " freight..... 1,488 28
" " mail..... 270 83

Total

This is a very fair exhibit for half a month in the dull season of the year, and shows a very great increase on the business of the preceding periods.

Railway Share & Stock List;

CORRECTED WEEKLY FOR THE
AMERICAN RAILROAD JOURNAL.

NEW YORK SEPTEMBER 6, 1851.

GOVERNMENT AND STATE SECURITIES.

U. S. 5's, 1853	100½
U. S. 6's, 1856	105½
U. S. 6's, 1862	110
U. S. 6's, 1862—coupon	113a114
U. S. 6's, 1867	115½
U. S. 6's, 1868	116
U. S. 6's, 1868—coupon	123½
Land Warrants	140a145
Arkansas 6's	52a53
Alabama 5's	91a92
Indiana 5's	78½
Illinois 6's, 1870	65a68
Kentucky 6's, 1871	105a106
Massachusetts sterling 5's	105a106
Massachusetts 5's, 1859	100½
Maine 6's, 1855	103
Maryland 6's	102½
Michigan	—
Mississippi	—
New York 6's, 1865	117a118
Ohio 6's, 1860	110
Pennsylvania 5's	90½

RAILROAD BONDS.

Atlantic and St. Lawrence, 6 per cent.	85
Baltimore and Ohio, 1867	94½
Boston and Providence 6's, 1855	101
Boston and Worcester 6's, 1855, convertible ..	107½
Bost., Concord and Mont. 6's, 1860, mortgage ..	87½
Cheshire 6's, 1860	91½
Connecticut River 6's, convertible	98
Erie 7's, 1859	101
Erie 7's, 1868	107½
Erie income 7's	91
Hudson River 7's, 1853	101½
Michigan Central, convertible, 8's, 1856	104½
New York and New Haven	100½
Norwich and Worcester, mortgage, 1860 ..	60a85
Old Colony, 1854	97½
Ogdensburg 7's, 1859	91½
Portsmouth and Concord	60a85
Passumpsic 6's, 1859	94½
Rutland 7's, 1863	97
Reading mortgage, 1860	80
" " " 1870	75
Sullivan, mortgage 6's, 1855	80
Vermont Central 6's, 1852	96½
" " " 6's, 1856	91½
Vermont and Massachusetts 6's, 1855	86½

RAILROAD STOCKS.

[CORRECTED FOR WEDNESDAY OF EACH WEEK.]

	Sept. 3.	Aug. 27.
Albany and Schenectady	96½	—
Atlantic and St. Lawrence	60a65	—
Androscoggin and Kennebec	30a35	—
Boston and Maine	102	102
Boston and Lowell	109	109
Boston and Worcester	101	100½
Boston and Providence	84½	84½
Bost., Concord and Montreal	29	—
Baltimore and Ohio	71½	—
Baltimore and Susquehanna	36	—
Cheshire	53	—
Cleveland and Columbus	—	—
Columbus and Xenia	—	—
Camden and Amboy	—	—
Connecticut River	60	—
Delaware and Hudson (canal) ..	—	—
Eastern	95	96
Erie	77½	73½
Fall River	92½	91
Fitchburgh	108½	108½
Georgia	—	—
Georgia Central	—	—
Harlem	69	68
Hartford and New Haven	124	—
Housatonic (preferred)	52	—
Hudson River	72	—
Kennebec and Portland	50a55	—
Little Miami	—	—
Long Island	15	14½
Mad River	—	—
Madison and Indianapolis	96	—
Michigan Central	104½	104½
Montgomery and West Point ..	—	—
Michigan Southern	—	—
Manchester and Lawrence	97	89
Morris (canal)	14½	15½
New York and New Haven	107	107½
New Jersey	133	—
Northern	66	66½
Nashua and Lowell	107½	—
New Bedford and Taunton	111	—
Norwich and Worcester	51½	52½
Norfolk County	20	—
Ogdensburg	34	32½
Old Colony	66	66
Passumpsic	80	—
Pennsylvania	—	—
Pittsfield and North Adams	95	—
Philadelphia, Wilm'gton & Balt. ..	28	29
Petersburg	—	—
Richmond and Fredericksburg ..	—	—
Richmond and Petersburg	—	—
Reading	55	53½
Rochester and Syracuse	107	106½
Rutland	53	47
Stonington	43½	42½
South Carolina	—	—
Syracuse and Utica	123	—
Sullivan	25	—
Taunton Branch	108	—
Troy and Greenbush	90	—
Tonawanda	—	—
Utica and Schenectady	130	—
Vermont and Canada	103	—
Vermont Central	34	31½
Vermont and Massachusetts	25½	25½
Virginia Central	—	—
Western	102½	103
Wilmington and Raleigh	—	—
York and Cumberland (Pa.)	20	—

Construction of Steam Boilers.

In the construction of steam boilers, the object being to attain the maximum of strength with the minimum of material, there is an absolute necessity for adhering to form and other considerations usual in the practice of mechanical engineers.—Any increase in the thickness of the plates obstructs the transmission of heat, and exposes the rivets as well as the plates to injury on the side exposed to the action of the furnace. It has generally been supposed that the rolling of boiler plate iron gives to the sheets greater tenacity in the direction of their length than in that of their breadth; but a series of experiments instituted some years since by

Mr. Fairbairn, an eminent English engineer, gives different results; they show that there is very little difference in the tensile strength of boiler plates when torn asunder in the direction of the fibre, or across it. From five different sorts of iron, the following results were obtained:—

	Mean breaking weight in tons in the direction of the fibre.	Mean breaking weight in tons across the fibre.
Yorkshire plate.....	25.77	27.49
Yorkshire plates.....	22.76	26.37
Derbyshire ".....	21.68	18.65
Shropshire ".....	22.82	22.00
Staffordshire ".....	19.56	21.01
Average.....	22.51	23.10

From this it would seem that iron plates may safely be used in the construction of boilers, in whatever direction may best suit the convenience of the maker. The next point to be considered is the best and surest mode of securing them together. At first sight it would appear that riveted joints are stronger than the plate itself, but a little reflection will soon show that this is erroneous; for in punching holes along the edge of a plate, it is obvious that the plate must be weakened to the extent of the sectional areas punched out, and that it is next to impossible, under the circumstances, to retain the same strength in the material after such diminution has been effected, as existed in the previously solid plate. This has also been tested by experiment; and assuming the strength of the plate to be 100, the strength of a double rivetted joint would be, after allowing for the adhesion of the surfaces of the plate, as 70; and the strength of a single rivetted joint, as 56.

In the construction of boilers exposed to severe internal pressure it is desirable to establish such forms, and so to dispose the material as to apply the greatest strength in the direction of the greatest strain. This matter has been the subject of careful inquiry and experimental research. The following is a short abstract of the calculation of Prof. W. R. Johnson, of the Franklin Institute, Philadelphia, the weight of whose opinions entitles them to serious consideration:—

"1st. To know the force which tends to burst a cylindrical vessel in the longitudinal direction, or in other words to separate the head from the curved sides; we have only to consider the actual area of the head, and to multiply the units of surface by the number of units of force applied to each superficial unit. This will give the total *divellent* force in that direction.

"To counteract this, we have, or may be conceived to have, the tenacity of as many longitudinal bars as there are lineal units in the circumference of the cylinder. The united strength of these bars constitute the total retaining or *quiescent* force and at the moment when rupture is about to take place, the *divellent* and *quiescent* forces must obviously be equal.

2nd. To ascertain the amount of force which tends to rupture the cylinder along the curved side, or rather along the opposite side, we may regard the pressure as applied through the whole breadth of the cylinder upon each lineal unit of the diameter. Hence the total amount of force which would tend to divide the cylinder in halves, by separating it along two lines in opposite sides, would be represented by multiplying the diameter by the force exerted on each unit of surface, and this product by the length of the cylinder. But even without regarding the length, we may consider the force requisite to rupture a single band in the direction now supposed, and of one lineal unit in breadth; since it obviously makes no difference whether the cylinder be long or short, in respect to the ease or difficulty of separating the sides. The *divellent* force in this direction is therefore truly represented by the diameter multiplied by the pressure per unit of surface. The retaining or *quiescent* force, in

the same direction, is only the strength or tenacity of the two opposite sides of the supposed bond.—Here, also, at the moment when a rupture is about to occur, the *divellent* force must exactly equal the *quiescent* force."

Mr. Johnson then goes on to show that as the diameter is increased, the product of the diameter and the force or pressure per unit of surface is increased in the same ratio. When the diameter of a boiler is increased, it must be borne in mind that the area of the ends is also increased, not in the ratio of the diameter, but in the ratio of the square of the diameter; and it will be seen that instead of the force being doubled, as is the case in the direction of the diameter and circumference, it is quadrupled upon the ends, or in other words, a cylinder double the diameter of another cylinder, has to sustain four times the pressure in the longitudinal direction. The retaining force, or the thickness of the metal of a cylindrical boiler, does not, however, increase in the same ratio as the area of the circle, but simply in the ratio of the diameter; consequently, the thickness of the metal will require to be increased in the same ratio as the diameter is increased.

The following table exhibits the proportionate strength of cylindrical boilers from three to eight feet in diameter, showing the thickness of metal in each, respectively, required to withstand the maximum pressure of 450 lbs. to the square inch:—

Diameter of boilers.	Thickness of the plates in decimal parts of an inch.
3 feet 0 inches.....	250
3 " 6 ".....	291
4 " 0 ".....	333
4 " 6 ".....	376
5 " 0 ".....	416
5 " 6 ".....	458
6 " 0 ".....	500
6 " 6 ".....	541
7 " 0 ".....	583
7 " 6 ".....	625
8 " 0 ".....	666

In order to ensure safety, every description of boilers used in manufactories, and also those on board steamers, should be constructed to a bursting pressure of 400 to 500 lbs. on the square inch; and locomotive engine boilers, which are subjected to much severer duty, to a bursting pressure of 600 to 700 lbs.

Baltimore and Susquehanna Railroad.

It will be seen by the advertisement in another column, that this company will receive proposals, in whole or part, for a loan of \$100,000. The loan will be made in conformity with the act of Assembly authorizing it, and which has been approved by the stockholders and city corporation of Baltimore. The concerns of this company, it is well known, have been for several years past in a condition of steady improvement; its business operations, including both travel and transportation, have exhibited a gratifying enlargement, and its revenues have shown a corresponding increase.

The following statistics of the operations of the road within the last twelve months are derived from an authentic source, and will be read with interest and gratification by all who take pleasure in the onward progress of our city:—

The gross receipts of the company from October 1st, 1850, to June 30th, 1851, have been as follows:

	From Passengers.	Burden.	Total.
Same time last year.....	\$64,223.23	189,761.70	253,984.92
Increase.....	\$5,239.52	44,649.19	49,888.70
The increase for October, November and December was.....\$ 5,990.32			
" " January, Feb. and March.....24,970.70			
" " April, May and June.....18,927.68			
\$49,888.70			

Under the operation of the law authorizing the funding of the arrearages of interest, the fiscal year of the company hereafter commences with January, and ends with December, so that for the first six months of the present fiscal year the increase in the company's receipts over the same period of last year has been within a fraction of \$43,000.

We take pleasure in pointing to these evidences of the prosperous condition and future promise of this well managed work, as reliable guarantees for the punctual and faithful payment of the interest and redemption of the principal of the loan which the company now proposes to create, and we doubt not that the required amount will be promptly furnished.—*Baltimore American*.

The Southwestern Carrying Trade.

A recent number of the Albany Evening Journal contains an ably written article, from a citizen of Kentucky, in relation to the transportation of the great staple products of the south and southwest, viz: tobacco, cotton and hemp, over the northern route, instead of going as they now do, by the way of New Orleans. He shows by conclusive arguments, that the northern route is the most economical in cost of transportation, by far the most expeditious as to time, and much the safest as to the dangers and risks of navigation. Some of the commission merchants at Louisville have tested the article of tobacco by actual shipments, made at their own risk, by the canal and lake route, and fully satisfied themselves that the northern route has the advantage by some four dollars a hoghead in the cost and expenses of transportation. The cost of shipping a hoghead of tobacco, the average weight of which is 1,200 pounds, via New Orleans, is as follows:—

Drayage at Louisville per hhd.....	\$ 50
Freight from New Orleans varies from \$3 to \$3 50 per hhd., average price say.....	3 25
Insurance to New Orleans per hhd.....	62½
Charges in New Orleans per hhd.....	1 75
Freight by ship from New Orleans to New York.....	7 00
Insurance from New Orleans to New York.....	2 00

Making the total expense.....\$15 12½
Per hhd. The cost of transportation of the same hoghead of tobacco from Louisville via Cincinnati the lakes and the canals, to the Atlantic cities has been:—

Drayage in Louisville per hhd.....	\$ 25
Freight from Louisville to Cincinnati per hhd.....	1 00
Charges in Cincinnati per hhd.....	50
Freights per hhd by canal, lake, &c.....	7 75
Insurance from Louisville to New York.....	1 12½

Total.....\$10 62½

Showing a difference in favor of the lake route of \$4 50 per hoghead—a sufficient margin for a good profit to the large operator.

It will be seen by reference to the two tables above presented, that there is a difference of one-half in the item of drayage at Louisville in favor of the northern over the southern route. The reasons of this difference is thus explained. The falls of the Ohio at Louisville create such an obstruction to navigation as to prevent the large class of boats running between that city and New Orleans, from receiving or discharging freight except at Portland, below the falls, and some two or three miles distant from the regular steamboat landing at Louisville. This distance entitles the draymen to double drayage. The same article of freight going by the northern route, is received on board the Cincinnati boats at the city wharf, where the expense of drayage is but twenty-five cents.

The writer then refers to the item of cotton, and

goes on to show that after the cotton has been transported from its original point of shipment on the Tennessee, Mississippi, or Ohio rivers, to New Orleans, it actually costs more to send it from that port to New York, than the whole expense of transportation from Louisville to New York over the northern route. A bale of cotton will average in weight 500 lbs. The cost of transportation of 100 bales from New Orleans to New York city, would be—

Freight on 100 bales weighing 50,000 lbs., at 50c per 100 lbs.....	\$250 00
Insurance on value, say \$3,000, at 1½ per cent.....	45 00
Commissions, forwarding and drayage at New Orleans, as per established rates, 50 cents per bale.....	50 00

Making total costs and charges of transportation of 100 bales of cotton from New Orleans to New York.....\$345 00

On the northern route, the cost of transportation of 100 bales of cotton from Louisville to New York is as follows:—

Freight on 100 bales, weighing 50,000 lbs., at 57 cents per 100 lbs., (at which rate it is offered by responsible common carriers to be taken for,) is.....	\$285 00
Drayage at Louisville, 6½ cents per bale.....	6 25
Forwarding, 10 cents per bale.....	10 00
Insurance on \$3,000, ½ per cent is.....	15 00

Total.....\$316 25

Thus making a difference in favor of the northern over the southern route equal to *thirty cents a bale* in cost of transportation. There is, however, still another and most material item to be taken into consideration, which when exhibited will make the advantage of the northern over the southern route still greater. This is the item of *Exchange*, which always enters largely into the calculations of the well informed and shrewd merchant. These are the comparative rates between the two cities and New York:—

Louisville exchange on New York at 60 days discount is.....	1 per cent.
Louisville exchange on New York at 120 days discount is.....	2½ "
New Orleans exchange on New York at 60 days discount, average, is.....	2½ "
New Orleans exchange on New York at 120 days discount, average, is.....	5 "

Which exhibits a difference in favor of Louisville, in the simple item of exchange, equal to \$1 15 on each bale, and when added to the thirty cents in transportation as shown by the above table, gives the holder of cotton sending from Louisville by the northern route a saving of \$1 45 per bale, over the holder shipping from New Orleans to the same northern mart.

But the inquiry may arise whether the cotton, when ready for market, can be delivered at Louisville at the same cost of transportation for which it can be sent to New Orleans. The export of cotton from Memphis, Tennessee, to New Orleans, varies from 135,000 to 150,000 bales per annum—the amount gradually but constantly increasing. The distance by river navigation is less from Memphis to Louisville, than it is from Memphis to New Orleans; and it is stated by captains of steamers engaged in the cotton carrying trade on the Mississippi, that a bale of cotton could be freighted from Memphis to Louisville at a less cost than it could be carried from the same point to New Orleans.

For all the cotton coming out of the Tennessee river, which is immense, and some idea of which may be accurately arrived at, from the statement of the fact that the annual exports from Nashville

alone amount to from thirty-five to forty thousand bales, the difference of placing it at Louisville instead of sending it to New Orleans is still more apparent in favor of Louisville.

The following is a comparative estimate of the cost of freighting a hundred bales of cotton from Nashville or other points on the Tennessee river, to New Orleans, and from the same points to Louisville:—

Freight from Tennessee river on 100 bales to New Orleans, at average of \$1.65 a bale.....	\$165
Charges at New Orleans, 50 cts. a bale.....	50
Total.....	\$215
Freight from Tennessee river on 100 bales to Louisville, at average rate of \$1 per bale, is.....	\$100
Charges at Louisville, 16 cts. a bale.....	16
Total.....	\$116

Making a difference upon all cotton sent out of the Tennessee river, when forwarded to Louisville instead of New Orleans, of ninety nine cents a bale, or of ninety-nine dollars upon every 100 bales. Thus it will be perceived that by making Louisville his depot for trans-shipment, instead of New Orleans, the cotton planter will reap a double advantage. He can send his cotton to Louisville cheaper than to New Orleans, while from Louisville it can be forwarded to New York over the Northern route, cheaper than from New Orleans to New York.

The advantage is equally great in the other articles of hemp, pork, lard, flour, &c., which are raised in the great Mississippi Valley.

It is said that the cotton crop this year in the whole South will not fall much, if any, short of three million bales. Of this, there is consumed in the Northern states, for manufacturing purposes, not far from four hundred thousand bales per annum, equal to one hundred thousand tons. Every bale of this cotton brought by the Northern instead of the Southern route, can be placed at the doors of the New England manufacturers at a cent per pound less in cost, than what it can at any time be purchased for when the Southern route of transportation is adhered to.

To be continued

Railroads in Indiana.

The Indiana State Journal gives the following resume of the condition of the various railway projects in this state:—

Bellefontaine Road.—The iron will be laid to Muncie, in all probability, in November. The residue of the road to the state line is mostly graded and all under contract.

Evansville and Vincennes Road.—This is finished, and in operation, for a few miles north of Evansville. It is to connect, by the Wabash road, at Terre Haute, with the great East and West Central road.

Goshen Railroad.—The papers announce that this work, from Goshen to Elkhart was put under contract at South Bend on the 8th ult., to be ready for the superstructure by the first of June next. A corps of engineers are now surveying and locating the route.

Indiana Central Road.—Most of the line, 71½ miles in length, has been let to contractors. About \$150,000 have been subscribed to its stock, and the president and directors are actively engaged in increasing the subscription and advancing the interests of the work.

Jeffersonville and Columbus Road.—The cars are now running on this railway to Vienna, in Scott county, about twenty-seven miles from Jeffersonville.

Knightstown and Shelbyville Road.—Completed last fall and doing a good business.

Lawrenceburg and Upper Mississippi Road.—It is expected this road will be completed at least to Shelbyville the coming year. The first shipment of iron is daily expected, and will be laid down immediately.

Lafayette and Indianapolis Road.—The necessary locomotives and other equipments have been purchased, and with the iron, will be received in a week or two. A considerable portion of the track will be laid this fall. The grading and bridging of the entire route are rapidly progressing.

Lake Michigan, Logansport and Ohio River Railroad.—The engineers are now engaged in making a survey of this road.

Newcastle and Richmond Railroad.—This line is now all under contract, and rapidly approaching completion, from Richmond to Newcastle. The extension from Newcastle to Logansport is under survey, and funds have been subscribed sufficient for its construction. The entire line from Logansport to Cincinnati will be over 160 miles in length.

New Albany and Salem Railroad.—The cars are now running over about 56 miles of this road, to Orleans, and the work is progressing rapidly along the entire line to Gosport, on the west branch of White River.

Northern Indiana Road.—This is an extension of the Michigan Southern railroad, and it is the design of the company to push the road through to Chicago by January next. It will probably be in use at least next spring or summer.

The Madison and Indianapolis Railroad is doing a good business as usual. The last semi-annual report of the company showed an increase of its business over the corresponding six months of the preceding year, of over fifty-one per cent. The track is now in good condition, being all laid with T rail.

Martinsville and Franklin Railroad.—This, we believe, is mostly graded, a portion of it ready for the iron, which is to be furnished by the Madison and Indianapolis road; so that it will speedily be completed.

Peru and Indianapolis Railroad.—The cars are running daily from Indianapolis to Noblesville, and a contract has been made with a New York company to complete it to Peru by November of next year.

Terre Haute and Indianapolis Railroad.—The cars daily run ten miles upon the Eastern end of the road, and workmen are putting down iron at both ends of the line. About twelve miles are in running order at the Terre Haute end.

Wabash Railroad.—This road leads, from Vincennes to Terre Haute. There seems to be little doing in regard to it at present, the energies of the Terre Haute people being entirely devoted to the Eastern and Western road for the present. When that shall have been completed, they will in all probability take hold of the former enterprise, and push it through with their accustomed energy.

Lake Shore Railroad.

The work on this important road is rapidly progressing in Ohio. The Conneaut Reporter understands that the portion between Ashtabua and the Pennsylvania line is to be rapidly pushed forward to completion. The line of the road in Chautauque county is much of it ready for the rails, a large quantity of which have been received during the past few weeks.

Ohio.

The following is a portion of the railroads in operation and in progress in Ohio.

	Railroads in operation.	Railroads in progress.
Cleveland and Columbus.....	135	....
Alfred Kelley, Pres't, Columbus.		
Columbus and Lake Erie.....	61	....
J. Dille, Pres't, Newark.		
Dayton and Springfield (branch).....	24	....
Findlay.....	16	....
Little Miami.....	84	....
Jacob Strader, Pres't, Cincinnati.		
Mad River.....	134	....
E. Lane, Pres't, Sandusky.		
Sandusky and Mansfield.....	56	....
J. G. Forbes, Pres't.		
Xenia and Columbus.....	54	....
A. Kelley, Pres't, Columbus.		
Bellefontaine and Indiana.....	118	....
J. H. Godman, Pres't, Marion.		
Cincinnati and Marietta.....	188	....
W. P. Cutler, Pres't, Marietta.		
Cleveland and Pittsburgh.....	40	58
C. Prentiss, Pres't, Ravenna.		
Cleveland, Norwalk and Toledo.....	78	....
C. L. Boalt, Pres't, Norwalk.		
Cleveland, Painesville and Ashtabula....	71	11
E. B. Ely, Pres't, Cleveland.		
Columbus, Urbana and Piqua.....	86	....
M. G. Mitchell, Pres't, Piqua.		
Cincinnati, Wilmington and Zanesville....	150	....
F. Corwin, Pres't, Wilmington.		
Cincinnati, Hamilton and Dayton.....	60	....
S. S. L'Hommedieu, Pres't, Cincinnati.		
Dayton and Western.....	35	1
P. P. Lowe, Pres't, Dayton.		
Dayton and Xenia.....	15	....
Greenville and Miami.....	50	....
E. B. Taylor, Pres't, Greenville.		
Hamilton and Eaton.....	36	....
A. Haines, Pres't, Eaton.		
Hillsboro.....	37	....
J. M. Trimble, Pres't, Hillsboro.		
Iron.....	50	....
C. Briggs, Pres't, Ironton.		
Junction.....	110	1
E. Lane, Pres't, Sandusky.		
Ohio and Indiana.....	126	....
Willis Merriman, Pres't, Bucyrus, Ohio.		
Ohio and Mississippi.....	20	....
A. T. Ellis, Pres't, Vincennes, Ia.		
Ohio and Pennsylvania.....	185	....
Wm. Robinson, Pres't, Pittsburgh, Pa.		
Ohio Central.....	140	....
J. H. Sullivan, Pres't, Zanesville.		
Scioto and Hocking Valley.....	100	....
J. V. Robinson, Pres't, Portsmouth.		
Steubenville and Indiana.....	121	....
D. Kilgore, Pres't, Steubenville.		

Pennsylvania.

Pittsburg and Erie Railroad.—The Mercer Luminary learns that the entire line of the Pittsburg and Erie railroad, from the town of Erie to the junction with the Ohio and Pennsylvania railroad at Enon valley, was contracted for at Erie, on the 13th ult. There was quite an animated competition among bidders, and it is said the work has fallen into competent hands.

Indiana.

Evansville Railroad.—A meeting was recently held at Vincennes, which was attended by a large number of the citizens of Knox and Gibson counties, in favor of the immediate completion of this road. Judge Hall, the President of the company, delivered an address, showing that the affairs of the company were in a prosperous condition, and he promised that the road should be put under contract from Princeton to Vincennes this fall if a sufficient amount of subscriptions of stock could be procured. Resolutions were adopted to make vigorous

efforts to raise the necessary means to accomplish this desirable object.

Georgia.

Western and Atlantic Railroad.—The defective rails on this road have been nearly all removed, and the track re-laid with good ones. The passenger and freight receipts are quite large; and two new passenger cars, manufactured at Augusta, have recently been put on the road to accommodate the increasing business.

Ohio.

Steubenville and Indiana Railroad.—The township of Jefferson has voted a subscription of \$100,000, and the township of Newark, in Licking Co., \$100,000, to this work.

Canandaigua and Corning Railroad.

It is said that the rails of this road are all laid, and the cars were to have commenced running last Monday.

Railroad Subscription.

Livingston County has voted \$25,000 to the Hannibal and St. Joseph Railroad, in addition to a large private subscription.

The Electric Light.

Much has been said and written upon the application of the powerful light produced by artificial electricity to the purposes of illumination. Many varieties of apparatus have been invented, to all of which there has hitherto been some great objection. Perhaps the greatest difficulty to be surmounted has been that of rendering the light steady and permanent by mechanical means, so that it shall not require any attendant. This difficulty, at least, seems to have been obviated by the invention we are about to describe.

The light is called "Stait's Patent Electric Light," after its inventor. It is produced from a galvanic battery of moderate size, embracing in its construction and elements several features, which are claimed to be improvements, the object of which is to render the battery constant, continuous, and regular in its action, and economical in its cost. By means of solid copper wires the electric fluid is conveyed to the lamp, which may be placed on a table or suspended from the ceiling. In this lamp are two cylinders of carbon, which are used as electrodes, that is to say, the current of electricity is passed from one to the other as they stand end to end, their ends being separated from one-twentieth to one-half an inch, according to the power of the current applied; and these cylinders are moved by a clock work arrangement, in proportion as they are consumed, at a speed which is regulated by the currents. To render the light continuous, it is necessary that these two pieces of carbon should first be brought into actual contact, so that the current may pass and then be separated to a short distance. This is accomplished, and here is the grand feature of the invention, by the current itself, without manual aid. As the carbon gradually wears away, at the rate of about an inch in two hours, the same regulated distance between the two electrodes is preserved by like means. The apparatus for effecting this self regulation is an electro-magnetic instrument, placed directly under the plate of the lamp, through which the current of electricity is caused to pass. The principal of this instrument is very ingenious, in some degree resembling a galvanometer; the galvanic current, passing through a coil of wire, magnetises a bar of soft iron, which is passed through the coil; and in proportion as the current is strong or feeble, the magnetised bar rises or falls. When the current is in excess, it actuates an escapement, and the two electrodes are drawn to the required distance apart; and when the current passing is less than the regulated quantity, the motion is reversed, and the electrodes are drawn nearer together.

Thus the light is rendered steady and constant, while no more of the fluid is allowed to pass than is developed in light, effecting a great economy of battery power. To prevent injurious vibrations or sudden movements of the iron bar, it is provided with a rack, wheel work, and fly. Another im-

provement consists in giving the upper electrode the form of a circular disk made to revolve slowly in contact with a fixed scraper, which keeps the edges clean and free from the particles of carbon projected upon it from the lower electrode. The carbon is prepared by forming a powder of charcoal into paste with melted brown sugar, pressing it into iron moulds, and baking it in the moulds at a red heat, and afterwards in a crucible at a white heat.

There have been several public exhibitions of this light, all of which have been successful. In one case it was exhibited in the large rooms in Hanover Square, London. The rooms were, as usual, lighted with chandeliers of wax candles, with a considerable number of oil lamps; the total amount of light being considered to be equal to 200 or 300 wax candles. On the lecture table was the light apparatus, covered with a tall glass shade. All things being made ready, the galvanic circuit was completed, and in a few seconds the whole apartment was filled with such a blaze of diffusive light, as caused the now dimly burning candles and lamps to assume the muddy and lack-lustre aspect they bear in ordinary sunlight. Every object in this large room was brilliantly illuminated, and as an assistant turned the light on and off at pleasure, the transition was as violent as from broad day to evening twilight. The paintings on the ceiling were finely displayed; and, what was very remarkable, the tone of the colors was precisely similar to that which they are seen to possess in daylight. All the delicate intershadings of the yellows, grays, flesh tints, and even of greens and blues, were brilliantly defined, and in all respects conveyed the daylight impression to the eye. The light was about equal to that of 700 or 800 standard wax candles, yet a lady's bonnet might have covered the entire apparatus; and the actual source of light did not occupy an area of more than an inch in every direction, if so much. The rays were then concentrated by a powerful lens, and directed upon some pictures, which were placed for the purpose on the side of the room, and the colors could be as clearly seen as by the light of the sun.

By means of a glass prism, a spectacle yet more beautiful was shown: this was the display of the prismatic spectrum, the entire number of the rays being present, and in brilliancy not to be distinguished from the same as shown by the decomposition of the true solar light. Perhaps one of the most striking displays of the character of the electric light followed. The electrodes were immersed in a globe of water, and still the light continued gleaming forth in all its brilliancy. Those who are familiar with the oxyhydrogen light, and the peculiarly white and somewhat intense light of the camphene lamp, might have felt doubtful of the result of a contrast with these; but the electric effulgence outshone both to a remarkable degree. It was stated at the time, that a volume of light equal to that of 10,000 wax candles could be evolved by the apparatus from a square inch of actual illuminating surface. It was said that a light of from one candle to 100,000 might be obtained and sustained by this new system; and with regard to the cost of production, the light equal to 100 wax candles was obtainable at the rate of a penny an hour, or about as it is stated by the inventor, one twelfth part of the cost of gas for the same period, and producing the same degree of illumination.

The character of the electric light presents several remarkable interesting features, most of which belong to no other artificial light, whatever, and assimilate it to that of the sun itself. The heat evolved is vastly disproportionate to the light produced, as may be conceived from the fact, that the lamp, when pouring forth a volume of light equal to 800 candles, did not emit more heat than that of one Argand lamp equal to six or seven candles. The light has been displayed, not only in air and under water, but also in alcohol, ether, sulphuric acid, carbon, and in atmospheres of carbonic, nitrogen and hydrogen. The apparatus constructed for domestic use gives a light equal to from eight to forty candles.

There is another point which appears to be important in considering the applicability of this beautiful light to the illumination of streets or great areas, and that is its diffusibility. The ordinary modes of illumination are incapable of giving lu-

minosity to the solid and aqueous particles in the atmosphere for any considerable extent, but the electric light effects this admirably, for even if a person places himself in the shadow under a wall he can easily see to read; so that the argument brought up by some, that in attempting to light large spaces with a single light, much of the area must be thrown into the shade, is of no weight.

But there is one chemical peculiarity about this light which demands a brief notice. It is found to possess those chemical powers of decomposition, which have been regarded as peculiar properties of the solar light, and which are known under the name of *actinism*. Preparations of silver, which turn black when exposed to the sun's light, blacken also before the electric light; and the chemical union of mixed gases, hydrogen and chlorine, has been effected by placing a jar containing them in the light of the electric lamp.

The Great Railway in Egypt.

The Viceroy has made final arrangements for the construction of a railway between Cairo and Alexandria, and has signed an agreement for that purpose with Mr. Bothwick, now in Egypt, on the part of Mr. Robert Stephenson. Mr. Bothwick intends returning to England, to send out a staff of engineers to commence operations forthwith. This undertaking will confer inestimable advantages on Egypt by bringing forth the resources of the country, besides facilitating the transit of passengers and merchandise to and from India. It is calculated that the line will be completed in about two years and a half. The whole length will be about 130 miles, and it will cross the Nile at the barrage, where a substantial bridge is already nearly finished, having been made by French engineers with the object of damming the Nile for the better irrigation of the land—an attempt in which they have signally failed after having spent an immense amount of money.

Probable Future Substitutes for Coal, &c.

We have a confident hope, however—or rather a firm belief—that long before our coal fields are really exhausted, discoveries will be made, both of new motive powers and new sources of heat or caloric, which will make all future generations independent of those clumsy and dingy resources. Motive power we think, will probably be supplied, either directly by such omnipresent and inexhaustible elements as electricity and galvanism, or by the employment of some gas, far more elastic than steam, and capable of being called into action and again condensed by slight mechanical impulses, or by charges of temperature, incalculably less than are now necessary for the management of that comparatively intractable substance; but, even if we should still require to use steam, we are persuaded that means will be devised for its generation, or rather for the production or evolution of heat for that and all other purposes far less onerous, indirect, and precarious, than the combustion of coal. This may probably be effected without any process of combustion at all; either by the great agents of galvanism or electricity already referred to; or by the friction, hammering, or rolling of solid and practicable indestructible bodies; or by the forcible compression of common air, or of other elastic fluids; or by the chemical combination of different substances; while, if combustion must still be resorted to, might it not be constantly maintained without the tremendous expense of the working and transportation of fuel, by merely contriving a method of burning the inexhaustible, omnipresent, and eternally reproduced element of hydrogen, as it exists in the great ocean, and in all our lakes, rivers, fountains and tanks, and tubs of rain-water with the equally omnipresent, inexhaustible, and constantly reproducing oxygen of the circumambient atmosphere? These, we are aware, may now strike many (perhaps most) people as mere Utopian or Laputan fancies; and undoubtedly they are, as yet, but vague and general suggestions. But when we consider how much wilder and more audacious (as less warranted by any analogous experience) similar anticipations of electric telegraphs, photographic painting, or railway locomotives, must have appeared but fifty years ago, we really cannot consent to put them in such a category; but, on the contrary, confess to a certain

feeling, both of pride and confidence, in thus recording what we cannot but consider as a truly prophetic, though it may be but a dim and somewhat indistinct, vision of a good and glory to come.

Bridging the Nile.

The editor of the Boston Medical and Surgical Journal, now on a visit to Egypt and Nubia, gives the following account of the bridge in progress of construction across the Nile near Cairo:

"A French engineer is constructing a beautiful bridge across the river, where the water is both deep and swift. The arches are of large brick. Another appears to be building over the Damietta branch, as seen in the distance. Mud machines, all iron, worked by steam; pile drivers, and machinery of all kinds suitable for carrying on a heavy business; besides immense piles of stone, brick, lumber and other materials, independently of laborers, soldiers, carts, horses, boats and mules, give the spot for six miles round, an active and bustling appearance. Six years, we are informed, have elapsed since the piers were commenced. This is the first bridge, it is believed, ever built across the Nile. It was commenced by Mahommed Ali some years since, and a fear is entertained that it will never be finished. The diving bell is an extraordinary machine, with which sixty men are at once sunk to the river-bed to drive piles, lay the stones, &c. The water at the lowest point is thirty feet deep, and the mud thirty more below that, down through which the foundation of the pillar is sunk, in iron boxes, till its weight lodges on the firm bottom. The whole length of piers for receiving the arches, is ninety feet. Last season 25,000 men were employed, at present only 2,000, the Pacha having used up his funds in building and furnishing costly palaces in all directions. Every three months the Governor of a district is called upon for a certain number of villagers for this public work."

To Engineers.

A NEW WORK on the Marine Boilers of the United States, prepared from authentic drawings, and illustrated by 70 engravings, among which are those of the fastest and best steamers in the country, has just been published by B. H. Bartol, Engineer, and is for sale at the store of

D. APPLETON & CO.,
Broadway.

September 1, 1851.

Wanted,

BY the Montreal Mining Company, a Manager for their Establishment at the Bruce Mines, Lake Huron.

Applications stating terms, and enclosing certificates of character and ability, will be received by the undersigned until the 1st October next.

By order.

H. D. COCKBURN, Secretary.
Montreal, August 27, 1851.

To Contractors.

THE SUNBURY AND ERIE RAILROAD COMPANY invite proposals for grading and bridging the line of the road, for a double track, from the City of Erie to Williamsport, in Lycoming county, in a substantial and workmanlike manner, complete in every respect for the superstructure.

Proposals should be addressed to D. L. MILLER, Jr., President, Philadelphia, on or before the 20th of Ninth month (September) 1851. Contractors will state what proportion of the Stock of the Company, if any, they will take at par in payment.

It is believed that the superiority of the harbor of Erie, the favorable position of the route, and the shortness of the distance secured by this, compared with any other railroad from the Lakes to the seaboard, will render this road as profitable, and its stock as good an investment, as that of any ever constructed in the United States.

A copy of EDWARD MILLER's Second Report will be forwarded to those to whom this Circular may be addressed.

A MASS CONVENTION of the friends of this great project will be held in the City of Philadelphia on the 25th of Ninth month (September), at which all interested are invited to attend.

3436

To Contractors.

Cincinnati and St. Louis Railroad.

SEALED proposals will be received at the Office of the Company till Wednesday, the 1st day of October next, for grubbing, grading and bridging forty-five miles of the Ohio and Mississippi railroad, from Mill Creek, in Cincinnati, to a point twenty miles west of the city of Aurora, Ind.

Plans, specifications, &c., may be examined by Contractors, at the Office of the Company, in Cincinnati, from the 20th of September, to the day of letting.

By order of the Board,

ABNER T. ELLIS, Pres't.

Cincinnati, August 16th, 1851.

To Chief Engineers, Directors of Railroads, Canals, etc.

A Civil Engineer and Surveyor, who has been professionally engaged under the British Government, East India Company, etc., is desirous of obtaining employment as an Assistant. No objection to the South or West. Address for one month to C. E. & S., American Railroad Journal office. August 16, 1851.

Railroad Iron.

THE undersigned offer for sale 2,000 tons of Railroad Iron, to arrive at New York in the month of September next. It is of a most approved pattern and quality, and weighs about fifty-five pounds to the yard.

CHOUTEAU, MERLE & SANDFORD.
No. 51, New Street.

New York, August 9.

TO CONTRACTORS.

Belpre and Cincinnati Railroad.

Engineer's Office,

Chillicothe, July 30, 1851.

SEALED PROPOSALS will be received at the Engineer's Office, in Chillicothe, until the 18th day of September, 1851, for the Graduation, Masonry and Bridging of 42 miles more of their road;—25 miles being between Greenfield and Blanchester, and 17 miles east of the 11 miles now under contract east of Chillicothe.

Plans, Profiles and Specifications will be ready for examination, at the Engineer's Office, on and after the 10th day of August. Blank Proposals will be furnished to Contractors, and all necessary information given upon the line or at the office concerning the quality and quantity of work.

W. P. CUTLER, Pre'st.

A. KENNEDY, Chief Engineer.

Virginia Locomotive and Car Works.

Wolfe Street and River Potomac, Alexandria, Va.
SMITH & PERKINS, Proprietors.

MANUFACTURE

Locomotive Engines and Tenders.
Marine and Stationary Engines and Boilers.
Chilled Car Wheels and Axles.
Patent Chilled and Wrought Slip-tire.
Machinery and Castings generally.

The undersigned having erected very extensive shops, and procured the most modern machinery and tools, are prepared to execute orders for Locomotive Engines, Cars, and Machinery of all kinds, with despatch, and on the most favorable terms.

R. C. SMITH,

Late of the Alexandria Iron Works.

THATCHER PERKINS,

Late Master of Machinery on the Balt. & O. R.R.
July 22, 1851.

Railroad Paint.

FOR depot buildings, bridges, burthen cars, wheels and axles, pipes, steam joints, fences, and every description of work requiring protection from the action of the elements. Price per barrel of 300 pounds, nine dollars.

Orders addressed to J. M. HALL, 36 South street, New York, will receive prompt attention.

CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by POWERS & WRIGHTMAN, manufacturing Chemists, Philadelphia.
Jan. 20, 1849.

Bridges & Brother, DEALERS IN RAILROAD AND CAR FINDINGS, 64 Courtlandt street, New York.

Having established a general Depot for the sale of articles used in the construction of Railroads, Locomotive Engines and Railroad Cars, we would invite your attention to our establishment. We have already in store a good assortment of CAR FINDINGS and other articles used in the trade, and feel justified in saying, that should you desire anything in our line, we can supply on terms perfectly satisfactory, and in the event of your desiring to order, you may feel assured that your terms will be as good as though you were here to make your own purchases.

Among our goods may be found Railroad Car Wheels, Axles, Jaws and Boxes, Nuts and Washers, Bolts, Brass Seat Hooks and Rivets, Window and Blind Springs, Lifters and Catchers, Door Locks, Knobs and Butts, Ventilators and Rings, Car Lamps, Coach and Wood Screws, Jack and Bed Screws and Babbitt's Metal; also Plushes, Damask, Enameled Head Linings, Cotton Duck for Top Covering in width sufficient without seams, Curled Hair and all other articles appertaining to cars.

Also a new and valuable CAR DOOR LOCK, well adapted to the Sliding Door. This is decidedly the best yet introduced.

LOCOMOTIVE ENGINE LANTERNS, the best article made in the country. Whistles, Gauge and Oil Cocks, Hemp Packing, American, Russian and Italian. We are also agents for Lightner's Patent Journal Box for Car Axles, that invaluable invention, for the economical use and preservation of Car Journals.

Coach VARNISH and Japan of the best quality. We would also offer our services for the purchase as well as for the sale of goods on commission.

Both members of our firm have had the experience of many years in the manufacture of Railroad Cars, and our Senior was a member of the well known house of DAVENPORT & BRIDGES, Car Manufacturers, Cambridgeport, Mass. With our knowledge of matters pertaining to Railroads, we feel quite confident in giving satisfaction to both buyer and seller, and hope that through assiduity and attention to any business entrusted to our care we shall merit a continuance of confidence and patronage.

BRIDGES & BROTHER.

July 22, 1851.

Lightner's Patent Axle Boxes.

THE Undersigned are Agents for, and offer for sale, Lightner's Patent Axle Boxes, for Railroad Cars and Tenders, which have, by thorough experience, been demonstrated to be one of the most valuable improvements ever introduced in Locomotion. The saving effected in oil alone, will in a few months pay the first cost of these boxes, independent of other advantages. They are now in use upon the following, among other roads, viz:

Boston and Worcester, Boston and Providence, Boston and Fitchburg, Nashua and Lowell, Providence and Worcester, Northern, N.H., Cheshire, Manchester and Lawrence, Concord, N.H., Concord and Claremont, Ogdensburg, (Northern, N.Y.) Stonington, New London Willimantic and Palmer, New Jersey Central, New Hampshire Central, Worcester and Nashua, Fitchburg and Worcester, Connecticut and Passumpsic, Lowell and Lawrence, Salem and Lowell, Wilton Branch, Newburyport.

Below will be found the certificates of a number of gentlemen, whose opinions will be good authority in every part of the country.

Office Boston and Prov. R. R.,
Boston, Dec. 28, 1849.

Mr. JOHN LIGHTNER,

Sir,—It affords me pleasure to say, that after two years' trial of your boxes, I am fully and entirely satisfied of their superiority over any other pattern we have used. This superiority consists in economy of oil and freedom from "heating." I have tried every pattern of box in use, of any note, and do not hesitate to say, that you have devised one which in every respect combines greater advantages than any other within my knowledge; these advantages are so manifest, that I am fitting up all

our cars with your boxes, as fast as practicable.

Annexed, is a statement of an experiment with your boxes, the result of which may be of use to your interests.

Ten passenger cars, running 72 wheels, fitted up with Lightner's boxes used 41½ pints of Patent Oil, at 50 cts. per gallon, ran 43,099 miles, equal to 5.18 pints per wheel for 43,099 miles. Speed, 30 to 40 miles per hour.

Very respectfully yours,

W. RAYMOND LEE, Supt.

I have examined the above statement of Mr. Lee, and fully concur with him in his opinion of the superiority of Lightner's box.

GEORGE S. GRIGGS,
Supt. Machine Shop B. & P. R. R.

Boston, July 26, 1849.

This is to certify that J. Lightner's axle boxes for railroad cars and locomotive tenders, have been in use on the Boston and Worcester railroad one year, and I unhesitatingly pronounce it, in my opinion, the best and most economical one in use, requiring less oil, of easy application, not susceptible of derangement, as in most kinds in use. When requiring repairs or renewal, the same may be done in one-fourth of the time usually occupied for that purpose. The box requires oiling not oftener than once a month—is kept quite free from dust, and consequently wears much longer than those generally in use.

D. N. PICKERING,
Supt. Motive Power, B. & W. R. R.

Office of Boston Locomotive Works,
December 12th, 1849.

The Boston Locomotive Company have been using J. Lightner's patent axle boxes under the tenders of their engines for several months, and find them more highly spoken of by the railroad companies that have used them in regard to economy in the use of oil, their durability and their ease of adjustment, than any other boxes which they have used. We therefore do not hesitate to recommend them to all railroad companies.

DANIEL F. CHILD,
Treas. Boston Locomotive Works.

Taunton Locomotive Works,
Taunton, July 7, 1849.

Mr. H. F. ALEXANDER,

Dear Sir,—Your favor of yesterday came to hand in which you ask what success we have met with, in using Mr. Lightner's patent box for cars, engines, &c.

We have put it in use on the Boston and Providence railroad, New Bedford and Taunton Branch railroad, Central railroad, N. J., Norfolk County, Rutland and Burlington, and as yet we have not had one complaint from them; and from what we have used of it, and witnessed, we do not hesitate to say that it is superior to anything in use for that purpose. It is simple in its construction, and easy of access, and the reservoir is held close to the shaft, and the oil and journal is perfectly secure from dust; they will run from four to six weeks without replenishing the oil. The brass in the box is changed very much easier than by any other plan that we have seen.

Very resp. yours,

W. W. FAIRBANKS, Agent.

Office Providence & Worcester R. R. Co.,
Providence, Dec. 17th, 1850.

H. F. ALEXANDER, Esq.,

Sir,—The "Lightner patent boxes" for cars and locomotives have been in use under a portion of the passenger cars and engines of this company for upwards of two years, and have given very great satisfaction.

Though combining many excellent qualities, their great superiority consists in the economy of oil.

The result of experiments upon this road shows the consumption of oil by the use of this box, to be not more than one sixth part the quantity consumed by the use of the common box.

With the common box, eight passenger cars, 64 wheels, running 90 miles per day, consumed in 12 months 520 gallons of oil, being an average of 8½ gallon per wheel per annum.

With the Lightner box the same cars running the same number of miles per day, during the same space of time consumed 73½ gallons of oil, being an average of 1½ gallon per wheel per annum.

So manifest are its advantages over any other box used by this company, it is intended to place it under all our cars as soon as practicable.

Besides the saving of oil, as they afford complete security from dust, we think them more durable than any other box in use.

Another advantage resulting from the use of this box is, cars run more easier than with the common box. The saving in fuel which it would effect, would of itself, we think be a sufficient inducement to use this box in preference to any other known to us.

Very respectfully,

ISAAC H. SOUTHWICK, Supt.
JOHN B. WINSLOW,
Supt. Machine Shop, P. & W. R. R.

Cambridgeport, April 5th, 1851.

H. F. ALEXANDER, Esq.

Sir,—This may certify that I have been engaged in the manufacture of railway cars since 1834, and have built for the different railroad companies cars of all descriptions to the amount of three millions of dollars, and have used on the above cars all kinds of journal boxes, and find that none give better satisfaction than the "Lightner patent box," both on account of the saving of oil and the arrangement for taking out and re-placing the composition by means of the sliding key, and other conveniences which no other box possesses.

Yours respectfully,

CHARLES DAVENPORT.

Worcester, March 17th, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—This is to certify that I have been for some years past engaged in building cars, and that I have tried most, if not all of the patent boxes, and have found Lightner's patent superior to all others as far as the saving of oil is concerned, also the ease with which they are fitted and exchanged in case they get out of order.

For the last three years, I have put them under all of the cars I have built, and in every instance they have given the most entire satisfaction.

Yours truly,

OSGOOD BRADLEY.

Office Union Works, So. Boston,
May 23d, 1851.

This certifies that I have applied Mr. J. Lightner's patent axle boxes to my locomotives and tenders for the past two years. I consider them superior to all others,—economical in their use, and possessing many important advantages not found in any other boxes.

SETH WILMARTH.

Office 15, R. R. Exchange, Boston,
June 1, 1851.

This is to certify, that we have known the success of Lightner's patent journal boxes upon various roads in New England the past three years, and have been led to examine their peculiar construction.—We are well satisfied of their merits, and have adopted them upon our small gravel cars, and take pleasure, as we ever have done, in recommending their use upon all roads where we are employed in the construction.

GILMORE & CARPENTER,
Contractors.

Amoskeag Manufacturing Co. Machine Shop,
Manchester, May 31, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—We are using the Lightner box on all the engines and tenders we build, and we are satisfied that it is the best box in use, and recommend the same to all those who purchase engines at our works.

Yours respectfully,

O. W. BAYLEY, Agt.

This is to certify that the Fitchburg railroad company having become satisfied of the superiority of J. Lightner's patent Axle Boxes for Railway Cars and Locomotive Tenders adopted the same.

and are bringing them into general use upon their road.

One year's experience with the above improvement, has fully convinced me that there has never been anything offered to the public for that purpose which possess such intrinsic value; in fact, this is an improvement which seems to overcome all the difficulties found in all the various kinds now in use. It possesses very many advantages over all others: Some of which are [first] the first cost is much less than that of most boxes in use. [Secondly] 75 per cent is saved in oil; one gill applied to each Journal once a month, or one quart to an eight wheel car, is all these boxes require per month [Thirdly] no dust can gain access to the Journal, which is constantly lubricated with clean oil; hence the saving in repairs of Journals and composition bearings, is a matter of importance. [Fourthly,] its construction is truly simple—not complicated, having nothing liable to become loose by constant and severe service. [Fifthly] for convenience there is nothing which approaches this improvement.—The composition bearings may be removed from the Journals of an eight wheel car, by one man, and returned, or duplicates, in twenty minutes, while under the car: the same would require two men, at least half a day with other boxes in use.—The trucks and wheels using these boxes, are free from oil and dirt, usually seen upon all railroad cars, at great expense to the corporation.

NATH'L JACKSON.

Supt. Car Building and Repairs, F.R.R. Co.

Boston, March 9, 1849.

I hereby certify, that I have examined a box for Car Journals, invented by Mr. Lightner of Roxbury, Mass, and I have thought so well of it that I have adopted it on our railroad, I have known of its success on other roads.

S. M. FELTON,

Supt. F. R. R.

Office of the Central R. R., N. J., }
Elizabethtown, May 1849. }

H. F. ALEXANDER, Esq.,

Dear Sir:—Your favor, [wishing to be informed how we liked Lightner's patent axle boxes for R.R. Journals,] has been duly received; in answer we would say, we have used the boxes on Locomotive tenders one year, more or less, and on our cars some six months. I consider them the best boxes in every respect, I have ever used, or even seen used on any other roads—for safety, durability and the economy pertaining to all the details connected with the boxes and Journals of R. R. Car wheels; and we shall adopt them upon this road.

Yours Respectfully,

JOHN O. STEARNS.

Supt. Central Railroad Co., N. J.

Manchester, N. H., Nov. }
1st, 1850. }

H. F. Alexander, Sir,

I have used "Lightner's Boxes" under all the Cars of the Manchester and Lawrence railroad, and feel no hesitation in saying that I think them to be the best boxes now in use.

Yours, &c.,

THEODORE ATKINSON, Agent.

Cheshire R. R. Office, Keene, }
March 5th, 1851. }

Mr. H. F. Alexander,

Sir,—Lightner's Patent Boxes have been used on the Cheshire R. R. about a year, and have given the highest degree of satisfaction.

All the Passenger Cars now in use, and a considerable number of Merchandise Cars are furnished with them, and they will take the place of the Common Boxes on all the cars as fast as circumstances will permit.

Very Resp't.

L. TILTON,

Supt. Cheshire R. R.

Boston and Worcester Railroad, }
Boston, April 1st, 1851. }

H. F. Alexander, Esq.,

Dear Sir,—Lightner's Patent oil saving box for railroad cars, has been adopted by this corporation; we are taking out the common and substituting the

Lightner's at the rate of fifty boxes per month; it will soon take the place of all others, as it is decidedly preferable to any heretofore used by this corporation.
G. TWITCHELL, Supt.

Statement of amount of oil used on 32 8-wheel freight cars, on the Boston and Providence Railroad (with Lightner's Boxes) from March 10, 1849, to February 27, 1851, and upon 12 8-wheeled passenger cars from September 8, 1849, to February 27, 1851.

FREIGHT CARS.

Amount Oil.	No. months.	Amount Oil.	No. months.
1.—21 pts.	10	17.—23½ pts.	14
2.—19 " "	6	18.—23½ " "	11
3.—25 " "	13	19.—36 " "	21
4.—18 " "	7	20.—22 " "	10
5.—22 " "	12	21.—38½ " "	24
6.—24 " "	13	22.—29 " "	23
7.—20 " "	11	23.—35½ " "	23
8.—21 " "	11	24.—37½ " "	23
9.—23½ " "	10	25.—51 " "	23
10.—21 " "	9	26.—31½ " "	24
11.—20 " "	9	27.—28½ " "	23
12.—21½ " "	11	28.—36 " "	23
13.—19 " "	8	29.—50½ " "	24
14.—25½ " "	17	30.—50 " "	23
15.—20½ " "	10	31.—41 " "	23
16.—31 " "	18	32.—38½ " "	23

Total, 925½ pts. 510

PASSENGER CARS.

1.—19½ pts.	18	7.—30 pts.	18
2.—25½ " "	18	8.—25½ " "	18
3.—33½ " "	16	9.—29 " "	18
4.—19 " "	15	10.—46½ " "	17
5.—15 " "	15	11.—9 " "	9
6.—22 " "	18	12.—65½ " "	17

Total, 340 pts. 197

Averaging 1 4-5 pints of oil for freight, and 1 7-10 for passenger cars per month only!

All orders and enquiries promptly attended to.

BRIDGES & BROTHER,

No. 64 Courtlandt st., New York.

July 25, 1851.

To Boiler Makers, Engineers, etc., etc.

PATENT LAP-WELDED IRON TUBES,

Manufactured by the

BIRMINGHAM PATENT IRON TUBE CO.

UNDER

PROSSER'S PATENT,

from one and a quarter to eight inches in diameter.

These tubes are well known for their superiority over all other descriptions for Locomotive, Marine and other Steam Engine purposes, for which they are used very extensively in Great Britain and on the Continent of Europe.

For sale in quantities to suit purchasers, by

WILLIAM BIRD & CO.,

44 Wall st., New York.

July 26, 1851.

To Railroad Companies.

THE undersigned has discovered and patented an imperishable, cheap, and sufficiently elastic substance, to be introduced between the sill and rail, so that the stone sill can be used in place of the wooden sill: entirely overcoming that rigidity where the rail is laid directly on stone. Address

J. B. GRAY, Philadelphia.

July 10, 1851.

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To Contractors.

Peru and Indianapolis Railroad.

PROPOSALS will be received at the office of the Peru and Indianapolis Railroad, in Noblesville, until the evening of the 13th of August next, for the Grading of the line of the above road from Noblesville to Peru, a distance of fifty miles. Also the masonry for Bridges over the Wabash, Big Pipe and White Rivers.

The proposals are to be addressed to W. J. HOLMAN, Esq., Chief Engineer, at the Company's Office, where plans and specifications of the work may be seen. Payments will be made monthly in cash, reserving 15 per cent. till the contracts are completed.

Indianapolis, July 12, 1851.

European and North American Railway.

THE undersigned, the three persons first named in the first section of an act passed by the Legislature of Maine, and approved the twentieth day of August last past, entitled "An Act to incorporate the European and North American Railway Company," and being specially authorised therefor in and by said act, hereby give public notice that, for the purpose of receiving subscriptions to the stock of said company, as established by the act aforesaid, according to the provisions thereof, not exceeding forty thousand shares, books of subscription will be opened under the direction of the undersigned, according to the regulations prescribed, at the time and places following, viz:—On WEDNESDAY, the Twentieth day of August next,

At Calais, Maine, with Noah Smith, Jr., Esq.

Eastport, do. " Col. Bion Bradbury.

Machias, do. " Walker & O'Brien,

Ellsworth, do. " Seth Tisdale, Esq.

Oldtown, do. " Geo. P. Sewall, Esq.

Bangor, do. " Geo. W. Pickering, Esq.

Orono, do. " Hon. Israel Washburn, Jr.

Waterville, do. " Hon. Timothy Boutelle.

Brunswick, do. " Prof. William Smyth.

Augusta, do. " B. A. G. Fuller, Esq.

Belfast, do. " John Y. McClintock, Esq.

Portland, do. " John B. Brown, Esq.

Portsmouth, N.H. Hon. I. Goodwin.

Salem, Mass. Stephen A. Chase, Esq.

Boston, do. " Francis Skinner & Co.

Lowell, do. " John Wright, Esq.

Worcester, do. " Charles Washburn, Esq.

Providence, R.I., " Billings Brastow, Esq.

Hartford, Conn., " Hon. C. F. Pond.

New Haven, do. " Allen Prescott, Esq.

New York, N.Y., " R. & G. L. Schuyler, No.

2 Hanover street.

Albany, do. " John V. L. Pruyn, Esq.

Troy, do. " Hon. John D. Willard.

Philadelphia, Pa. " Hon. Wm. C. Patterson.

Montreal, Canada, " Hon. John Young.

Quebec, do. " J. B. Forsyth, Esq.

Said books will remain open for ten successive

days at the places and with the persons aforesaid.

Dated at Portland, this sixteenth day of June,

A. D. 1851.

ELIJAH L. HAMLIN,

ANSON G. CHANDLER,

JOHN A. MOOR.

Trautwine on R. R. Curves.

By JOHN C. TRAUTWINE, Civil Engineer, Philadelphia, Pa.

IN press, and will be published in a few days; accompanied by a Table of Natural Sines and Tangents to single minutes, by means of which all the necessary calculations may be performed in the field.

This little volume is intended as a field-book for assistants; and will be found extremely useful, as it contains full instructions, (with wood cuts) for laying out, and adjusting curves; with Tables of Angles, Ordinates, etc., for Curves varying from 13 miles, down to 146 feet Radius.

A portable Table of Natural Sines and Tangents to minutes, has for a long time been a desideratum among Engineers, independently of its use in laying out curves.

The volume is neatly got up in duodecimo; and handsomely bound in pocket-book form.

Sold by Wm. Hamilton, Actuary of the Franklin Institute, Philadelphia. Price \$1.

Also in press, and will be issued in a few weeks, "Trautwine's Method of Calculating Excavation and Embankment."

By this method, which is entirely new, (being now made known for the first time) the cubic contents are ascertained with great ease, and rapidly, by means of diagrams, and tables of level cuttings. Thin octavo; neatly half bound, \$1. For sale by Wm. Hamilton.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

Notice to Contractors.*Steubenville and Indiana Railroad.*

PROPOSALS will be received at the Office of the Steubenville and Indiana railroad company in Steubenville, until the first day of October next, for the Grading and Masonry of the first division of the road extending from Steubenville to the Connotten valley and also for the construction of the entire road between Steubenville and Coshocton; and also distinct proposals for the construction of that portion of the road extending from Coshocton to Newark.

The entire length of this line is about 110 miles, and it contains work of all descriptions, in great variety, some of which is quite heavy.

Proposals will be received for the Grading and Masonry of the first division entire or in sections of about a mile each, the Company reserving the privilege to make such disposition of the whole work, as may appear most conducive to its interests.

Plans, profiles and specifications can be seen at the office of the Company after the 15th of September, and further information may be obtained on application to J. Blickensderfer, jr., Chief Engineer, or to the undersigned,

D. KILGORE, President.

Notice to Contractors.*Engineers Office, E. T. & V. R. R. Company, Greenville, E. T., June 5th, 1851.*

PROPOSALS will be received until the 1st day of October next, for the Grading and Masonry of that part of the E. T. & V. Railroad between the Eastern terminus of said road at King's Meadow, and Rheatown, in Greene County, a distance of about forty-seven miles. A large amount of very heavy work, both in Grading as well as Masonry, will be found on this division, offering strong inducements to able Contractors.

Maps, Profiles, and Specifications can be seen at this Office, on and after the 20th of July next.

The Company reserve the right to reject all, or any proposals that they deem unsatisfactory.

Proposals should be directed to the Treasurer and Secretary of the E. T. & V. Railroad Company, Jonesborough, E. T.

LLOYD TILGHMAN,
Chief Engineer.**Railroad Lanterns.**

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.

August, 16, 1849.

6m33

Railroad Iron.

THE Subscribers, Agents for the Manufacturers, are prepared to contract for the delivery of Railroad Iron at any port in the United States or Canada, or at a shipping port in Wales.

WAINWRIGHT & TAPPAN,
29 Central Wharf.

Boston, June 1, 1851.

Bowling Tire Bars.

40 Best Flange Bars 5½x2 inches, 11 feet long.
40 " " 5½x2 " 7 feet 8 in. long.
40 " Flat " 6x2 " 11 feet long.
40 " " 6x2 " 7 feet 8 in. long.

Now in store and for sale by

RAYMOND & FULLERTON,
46 Cliff street.**To Railroad Companies,
Machinists, Car Manufacturers, etc., etc.**CHARLES T. GILBERT,
NO. 80 BROAD ST., NEW YORK,

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Orders are invited; and all inquiries in relation to any of the above articles will receive immediate attention

THE Fourth Annual Exhibition of AMERICAN MANUFACTURES, by the MARYLAND INSTITUTE for the Promotion of the Mechanic Arts, will be opened in Baltimore on the 20th October, 1851.

The Exhibition will be held in the SPLENDID NEW HALL of the Institute, (fronting on Baltimore street) now being rapidly completed. Their edifice is centrally situated, chaste in its architecture, solid in its construction, and is by far the largest and most complete building in the United States, devoted to the Mechanic Arts. It may be added that this building is 355 feet long by 60 in breadth, with an average height of 68 feet, containing some twelve apartments, the largest of which is 255 feet by 60, and that the cost will be over \$70,000.

To this Exhibition, the Managers ask the attention of all engaged in industrial pursuits throughout the country, and cordially invite them to contribute specimens of their best productions for public inspection, and to compete for the prizes offered by the Institute. These prizes consist of GOLD and SILVER MEDALS, DIPLOMAS, etc., which were last year distributed as follows:—Gold Medals, 16; Silver ditto, 90; Diplomas, 60; besides 85 articles of Jewelry, etc., to ladies. Fair play will be scrupulously observed towards all, and every facility of Steam power, shafting, fixture, labor, &c., &c., will be amply provided free of expense. The machinery will be under a special superintendent, and a fine display of it is looked for. The last exhibition of the Institute was visited by more than 40,000 persons, and with their vastly improved accommodations and alterations, this number will be doubled at the coming display, embracing many Virginians, Pennsylvanians, and other strangers from the South and West.

Joshua Vansant, President.

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Samuel Sands, Rec. Sec'y.

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(The last line in *Italics* are the Committee on Exhibition.)

The Hall will be opened for the reception of goods on MONDAY, 13th October; on the next Monday, 20th, at 7 P. M., the Exhibition will be formally opened to the public, and will positively close on Wednesday, 19th November. Articles for competition must be in the Hall by Thursday night, Oct. 15, unless delayed in shipment after starting in ample time.

Those who intend depositing, will give the Committee or the Agent, notice as early as possible, stating the nature of the goods, and probable amount of room required, to exhibit them to advantage.

Circulars, containing a view of the new Hall and the full regulations of the Committee, with special information, if required, may be had promptly, by addressing the undersigned, or the Institute's Agent, J. S. Selby, Baltimore, post-paid.

ADAM DENMEAD,

Chairman Com. on Exhibition for 1851.

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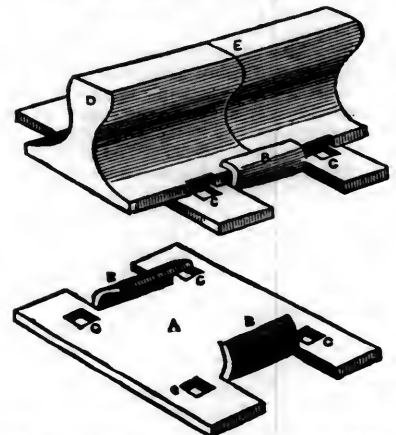
The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

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May 9, 1851.

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ARE prepared to make WROUGHT IRON RAIL ROAD CHAIRS, of various sizes, at short notice.

By use of the WROUGHT IRON CHAIR, the necessity of the wedge is entirely done away—the lips of the chair being set, by means of a sledge or hammer, close and firmly to the flange of the rail.

The less thickness of metal necessary in the Wrought Iron Chair gives much greater power and force to the spikes when driven—and consequently a much less liability to the spreading of the rails by reason of the spikes drawing or becoming bent.

The less weight necessary in the Wrought Iron Chair, will enable us to furnish them at a cost much below that of CAST IRON CHAIRS.

DESCRIPTION OF THE ABOVE CUTS.

Figure 1 is a perspective view of the rail secured in the chair, and fig. 2 is a perspective view of the chair itself. D, E, are sections of two rails placed together, and secured at the joint on the chair by the jaws B, B. The chair is bolted down by spikes C, C. In fig. 2, the chair is represented as made of a single block or plate A of wrought iron.

The chair is set in its proper place on the track, spiked down, and the ends of the two rails brought together within the jaws as represented in fig. 1.

For further information address,

N. C. TROWBRIDGE, Secretary,
Poughkeepsie, N. Y.

June 1, 1851.

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THE Subscriber offers his services to Railroad Co's and Car Makers for the purchase of equipment and furniture of roads and depots and all articles and materials required in the construction of cars, with cash or approved credit. No effort will be spared to select the best articles at the lowest market price.

He is sole Agent for the manufacture of the ENAMELED CAR LININGS, now in universal use. The best Artists are employed in designing new styles, and he will make to order pieces with appropriate designs for every part of the car, in all colors, or with silver grounds and bronzed or velvet figures.

He is also Agent for Page's Car Window Sash Fasteners, which is preferred by all who have used it to any other.

CHARLES STODDER,
75 Kilby st., Boston.

June 20, 1851.

3m.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

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ASSISTANT EDITORS,

J. T. HODGE, *For Mining and Metallurgy.*

GEN. CHAS. T. JAMES, *For Manufactures and the Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & Co., 136 NASSAU ST.

Saturday, September 13, 1851.

Completion of the Portland and Montreal Railroad.

Assurances were held out to the people of Portland, and to the stockholders of the Atlantic & St. Lawrence railroad company, prior to the annual meeting, that the entire line might be completed in the autumn of 1852, in season for the fall business of next year. This expectation should not be encouraged, unless the proper measures are now taken to make the accomplishment of this result reasonably certain.

It is not too late even now to secure this most desirable consummation. The Parliament of Canada has just passed an amendment to their Railway Facility Bill, granting the Colonial guarantee of the *principal*, as well as the interest, on one half the cost of their portion of the line. These securities have been negotiated with the *Messrs. Barings* of London above par, and the funds suf-

ficient to build their road are now at the command of the Canadian company. They are able and anxious to construct their portion of the work in season for the transaction of the fall business next year—or by October, 1852—if our portion of the line can be built at the same time.

Our company has some forty miles more of distance to build than the Canadian company. After passing Berlin Falls, at which place heavy rock cuttings are encountered, there are no physical difficulties that need to delay the work at all. From Berlin Falls to the Connecticut river, the grading is very nearly finished, with the exception of the rock cutting before spoken of. It is supposed that this point will not prevent the opening of the road to the Connecticut river the coming winter.

The action of the Board of Directors, the present month, will determine the question whether or not the road shall be opened next season. If the determination of the Board is not promptly made, the needful measures put in progress, the location perfected and made so as to enable the contractor to open the deep cuts next winter, and the equipment ordered forthwith, we cannot hope for the completion of the road prior to the fall of 1853.

The loss of interest for one year, on the present investment in the road, will be greater in amount than any sacrifice which prompt and decisive measures will entail upon the company. The New York and Erie railroad company built and equipped 127 miles of their road, required to finish their road to Lake Erie, in less than a single year, and the facilities for its construction were less than those found upon the line of the Atlantic & St. Lawrence railroad company.

It is not too much to expect that some assistance might be obtained from the proceeds of the public lands of Maine in connection with an application by the friends of the European and North American railway, for a similar purpose to the next Legislature.

Besides this, many States are looking to the public domain of the United States for assistance to their public works. The grant of alternate sections of land in aid of the Mobile and Chicago railroad, by the last Congress, may tend to the adoption of a general policy, on the part of the United States Government, which shall give to each State its share of the proceeds of the public lands for works of internal improvement. Such a policy

should find Maine a claimant for a full share of the proceeds, if not the first to urge its adoption.—There are no enterprises more entitled to this assistance than the two great international roads of Maine.

What we particularly require now is, an elaborate report upon the position, the advantages, the prospects of the Portland and Montreal railroad under the present condition of affairs. The recent adoption of the 5½ feet gauge for all Canada, and the appropriations just made by the Canadian Legislature of \$16,000,000 for the building of their Main Trunk Line, are by far the most important occurrences in relation to our road which have taken place for years.

If suitable measures are to be adopted at the present time, it is believed that the funds now wanted to complete the road might be advantageously obtained in the large markets. At any rate, a year ago it would have been an easy task to have done so, and the prospects of the road have been most favorably affected by the doings in Canada before spoken of.

The Boston Courier of Saturday says, there is a rapid increase in the importation of foreign merchandise into Boston for the Canadian market.—The great railway jubilee to come off next week in Boston has more reference to measures in progress to secure the trade of Canada than any thing else.

If Portland was fully impressed with the importance of an early opening of the Montreal railway, there would be no doubt of its accomplishment next year. P.

"Railways 1812."—Honor to whom Honor is Due.—Col. Stevens.

H. V. POOR, Esq.

A letter written by Robert R. Livingston, to show what was thought of railways forty years ago, has been going the rounds, and is copied into your paper from the National Era, "addressed to a gentleman who had asked his opinion, etc." I propose to give you the name of this individual, with letters from Gouverneur Morris, and the great De Witt Clinton, "Commissioners of Inland Navigation for the State of New York," when Col. Stevens enclosed a "Memorial to the Commissioners for Exploring the Route of Inland Navigation, dated 24th February, 1812," which Governor Clinton acknowledges the receipt of in fewer words than Mr.

Livingston discusses the subject in his letter quoted by you 11th March, 1811.—It should be 1812.

"ALBANY, 2d March, 1812.

"I have received your interesting communication addressed to the Commissioners of Inland Navigation, etc., and shall lay it before the board at their first meeting.

With my best compliments,

I am yours respectfully,

DEWITT CLINTON.

John Stevens, Esq."

The Memorial, with Mr. Stevens' "answer to the objections of Robert R. Livingston, Esq.," are now before me, in a pamphlet of 42 pages, entitled, "Documents tending to prove the superior advantages of Railways over Canal Navigation.—Printed by T. & J. Swards, No. 30 Pearl street, N. Y., 1812."

It appears Col. Stevens prepared his "eight documents," with an "Introduction," to lay before Congress, after he had failed in the State of New York to get Messrs. Livingston, Morris and Clinton to entertain his "ingenious proposition"—meaning from their remarks, no doubt, *visionary*.

Gouverneur Morris, under date of Albany, 16th March, 1812, writes Col. Stevens:

"I am directed by the Board of Commissioners to transmit the enclosed copy of a report by the committee, to whom was referred your communication, recommending the construction of a wooden railway.

I avail myself of the opportunity, to present the assurance of that respect, with which I have the honor to be, sir,

Your obedient servant,

GOUVERNEUR MORRIS."

Of this report, which I may give you entire, I now present you the commencement, and the close. It should be stated in connection, that Col. Stevens, of the Revolutionary Army, was born 1750, and died 1838. He was the boon companion, associate, and often the host of Livingston, Morris and Clinton; consequently, they could not treat him as a crazy man; they therefore introduce their report with compliments to his mechanical talents.

"The committee, to whom was referred John Stevens, Esq.'s, communication, recommending a wooden railway, report that they have considered said communication with the attention due to a gentleman whose scientific researches and knowledge of mechanical powers, entitle his opinions to great respect, and are sorry not to concur in them.

"Mr. Stevens proposes a railway, on which a steam engine* is to propel, by a force equal to the competent number of horses, 100 tons, at the rate of four miles an hour.

"As horses move on the earth, when drawing a weight, it is believed that an equal power must, to produce the same effect, have sufficient hold on the earth: and it is doubted whether an engine in a wagon can work it forward with as much advantage as horses on a road.

"If the engine turn the wheels, and propel the weight by their friction on the railways, it may be questioned, whether the effect will equal expecta-

* At page 16, Col. Stevens observes—"A small engine then of 10 inches diameter, worked with steam, the elastic power of which was 50 lbs. to the circular inch [equal to 70 lbs. the square inch] would possess a power equal to 5000 lbs. on the whole area of the piston, moving with the velocity of three feet in a second. This exceeds the power of 20 horses; but one horse, as above stated, can transport 8 tons, and 20 horses 160 tons."

tion. The rims of the wheels (however accurate) will, it is apprehended, impede (by their friction) the progressive motion." * * * Then follows a page of like sapient objections. The report closes—"and thus we are definitely led to ask, whether a railway can be constructed of sufficient strength. It is proposed that 100 tons be put in motion on it, at the rate of four miles per hour, which is nearly two yards in a second. * * * But, if it can, the committee conceive that it must be composed of materials more solid and durable than wood." * * * [Col. Stevens proposed "*bar iron rails, half an inch thick, and four inches broad.*"] Mark the close of this singular report. "Moreover, it is self-evident that the same way will not do for carriages going and returning, the expenses, which would (it is conceived) for a single way, exceed that of a canal, must be doubled, and would therefore render the construction unadvisable, were it sanctioned by experience.

A true copy from the minutes.

[Signed.]

JOHN L. MORTON,

Secretary of the Canal Commissioners."

Document VIII. is a full "answer to the report of the committee." I would send it to you, did I not value it too highly as a railway curiosity, to trust it to the mail. What think you of his stating to Congress (page 6)—"The extension and completion of the main arteries of such a system of communication would by no means be a work of time.

* * * It would be exempted totally from the difficulties, embarrassments and delays incident to the formation of canals. * * * To the rapidity of the motion of steam carriages on these railways, indefinite limit can be set. * * * The Proas of the Pacific ocean are said to sail at the rate of more than 20 miles an hour. * * * If then a Proa can be driven through so dense a fluid as water 20 miles an hour, (800 times more dense than air,) I can see nothing to hinder a steam carriage moving on these ways with a velocity of 100 miles per hour. This astonishing velocity is considered here as merely possible. It is probable that it may not in practice be convenient to exceed 20 to 30 miles per hour. Actual experiment, however, can alone determine this matter, and I should not be surprised at seeing steam carriages propelled at the rate of 40 to 50 miles per hour." How true to the letter, September 1, 1851.

JOS. E. BLOOMFIELD.

Self-Registering Magnetic Needle.

One source of error has constantly attended magnetic observations in the most perfectly constructed observations. The approach even of the observer has been sufficient to produce a disturbance in the magnetic needles or bars. This error, however, no longer exists. Each magnetic bar is made to carry a little mirror, which reflects the light of a lamp upon a piece of photographic paper kept constantly moving behind an opaque plate having but one small vertical opening. On this, for every minute of the twenty-four hours, each vibration of the needle is faithfully recorded. The chemical radiations of an Argand lamp supply the observer's place; and at the same time, as it records every change in the phenomenon of terrestrial magnetism, it is made to mark the most delicate alterations in atmospheric pressure, and to note every increase or diminution of temperature. At Greenwich, the magnets, the barometers, and the thermometers are all registered by the chemical power of light; and M. Faye and Gonjon, at Paris knowing the error of the human eye in observations on a bright object, have substituted the Daguerreotype plate for the purpose of ascertaining the actual diameter of the sun, and they propose to the principal observatories of Europe to determine by a similar method, the absolute time. Electricity now determines the longitude, and marks the transit of a star, and the

sun's rays perform equally important offices to aid the natural philosopher in his delicate research for the truths which are as yet obscure.—*London Athenaeum*.

From the London Mechanics' Magazine.

On Anhydrous Steam, and the Prevention of Boiler Explosions.

BY DR. HAYCRAFT, GREENWICH.

In the London Mechanics' Magazine, Mr. Frost, of New York, has with much talent developed his views on dry or anhydrous steam, which on the supposition of its having its own atomic constitution, he denominates *stame*. He has given experiments which open a vast field for improvement, and his conclusions lead us to believe that the power of the steam engine may be prodigiously increased. Having about twenty years since, entertained nearly the same views as Mr. Frost, and having abundant reason to modify them, it may not be amiss to give an historical detail of the principal facts on which those opinions were founded. It will be at least advantageous to the reader, by warning him of those errors by which I have been misled, and will at the same time open to him the right path to improvement.

Being induced by the experiments of Broughton, who supposed that steam was ten thousand times rarer than water, and also by those of Desaguliers, who put it down at fourteen thousand, I experimented by weighing steam in a copper ball, and afterwards weighing the same after having immersed it in boiling oil for some time, for the purpose of superheating and rarefying the steam. The particulars of this experiment I need not detail, as it is, I now perceive, liable to the same objections as Mr. Frost's, which I will afterwards explain. The result was, that by exposing steam to the temperature of boiling oil, its specific gravity appeared to be lessened to about one-tenth; that is, it expanded to about ten times its former bulk.

Encouraged by this apparently satisfactory experiment, I had a small steam engine constructed, with a cylinder of 4 inches, and furnished with a tubular condenser, by which I could measure exactly the quantity of steam consumed. The cylinder was furnished with a jacket, which was supplied by a small high-pressure boiler.

On working the engine with ordinary steam, it required eighty five revolutions to fill a given measure with the condensed steam; but on applying steam to the jacket of about 500 lbs. pressure, it required 920 revolutions to fill the same measure—the engine in both instances carrying the same weight on the paul. In this experiment, which was often repeated, it appeared that dry steam, or Mr. Frost's *stame*, is ten times more economical than ordinary or hydrated steam.

Having succeeded thus far, a high pressure engine was erected, with a nine-inch cylinder and a three foot stroke: the cylinder was so constructed that a fire could be made round it, and at the same time the supply of steam passed through tubes exposed to the heat of the furnace flues. The engine worked very well for some time, and with surprising economy of fuel; but as might be expected, the parts exposed to high temperature gave way, and the engine became useless.

Afterwards I had a small engine with the cylinder immersed in a mercury bath, with a metallic piston; this engine also gave great satisfaction for a time. It however occurred to me one day to make a calculation of the actual working of these engines; and I found to my astonishment, that although my rarefied steam or "*stame*" had, as I believed, ten times the rarity of ordinary steam, yet its performance was in all these cases about equal to what it should be, supposing it to have the rarity ascribed to it by Watt—namely, 1728 times greater than that of water. On examining this subject carefully, I fortunately recollected the remarkable admission of Watt, that in his best engines there was a consumption of steam double of what was required by calculation. We have here two remarkable facts: one is that a large engine, of Watt's best construction, consumes twice as much steam as it should by calculation; and the second is that a small engine, carefully made, requires ten times as much as is sufficient under a different management.

This must be explained either by supposing there

is some waste in the usual mode of operating with steam, or that, by superheating it, there is an absolute expansion of its volume.

To settle this latter point, the following experiment was made, which, though performed many years since, has never been published. The experiment was designed to ascertain the density of steam, but chiefly to determine what effect a superheating of it would produce.

A graduated tube was filled with mercury, the upper end being closed, and the lower immersed in a basin of mercury. Oxygen and hydrogen were introduced in the proportions which constitute water, to a certain mark which was noted.—Two coated wires being introduced at the lower end, the gases were detonated, and of course, reduced to water. The whole was placed in an oil bath, gradually heated to 210°, when steam was formed filling the tube to a point marked. On this, a calculation was made which came so near 1728, the expansion assigned by Watt, that I was satisfied of its general correctness. Having ascertained this point I proceeded to determine the other, which to me was of the greatest importance, namely, how far an additional temperature would expand the steam, expecting that, at all events, it would have as much effect as is ascribed to it by Gay Lussac and Dalton namely, as doubling the volume for every 480°.—My surprise was indeed great, when I found that an increase of 10° made no perceptible difference in the volume of the steam. I then gradually raised the temperature of the oil bath to 285° without perceiving the least expansion; indeed, it appeared very slightly to have contracted its bulk—arising, I suppose, from the expansion of the glass tube. I did not raise the temperature higher—my apparatus unfortunately not admitting of it—and I was completely satisfied that an additional temperature of 75° did not expand the steam. The experiment was several times repeated with the same result.

How can this experiment be reconciled with those of Mr. Frost, who finds that an addition of 4° doubles the volume of the steam? There is such an air of candor about Mr. Frost's communications, that I am disposed to give full credit to the facts which he details; and the only way I can think of to reconcile the discrepancy, is to suppose that some mismanagement has taken place either in his experiments or mine. On examining his apparatus, as represented in figs 4 and 5, page 252, No. 1390, and his mode of using it, I find that the whole syphon is filled with water, which being converted into steam at a high temperature, the superabundant water escaping, is thereby filled with steam. The syphon being then hermetically sealed up, was suffered to cool; an engineer's vacuum, as he aptly terms it, is formed. Now, in this process it must be observed, that the whole interior of the syphon must be covered by very minute globules of water. The mercury is then introduced, which would fill the syphon with the exception of these minute globules, which would be everywhere interposed between the quicksilver and the inner surface of the tube. Then, on applying heat at the boiling point, the globules of water at the upper part of the syphon only are converted into steam; the remainder is kept in the aqueous form by the weight of the column of mercury incumbent upon it so that it is no wonder that an addition of 4° temperature would convert some of the globules of water into steam of double the whole column. The other instruments used by Mr. Frost are still more complicated, and I fear in their use would give rise to the same errors; and, as all the experiments were conducted in nearly the same manner, the results would be similar in them all. In such experiments the utmost care should be taken to operate in perfectly dry tubes.

Having said thus much in reprehension of the mode in which Mr. Frost's experiments were conducted, I will gladly take this opportunity of acknowledging the great importance of the experiments themselves, and of the relation of oil of turpentine, and the fixed oils to minute globules of water exposed to high temperatures. His papers deserve a most attentive perusal, especially his remarks on boiler explosions, to which we shall refer.

We shall now be able to return with advantage to the fact, that in the small engine spoken of, as

an additional temperature does not expand the steam, and as when the steam was superheated the engine consumed only the quantity that it should have done by measurement, it will follow that the same engine, when it was worked with ordinary steam, and consumed ten times as much as in the former case, must have consumed ten times as much as it ought to have done by measurement.—Then comes the question, What occasions the loss? The same question applies to the other case, namely, What occasions the loss of one half of the steam which, we have seen, was the opinion of Mr. Watt himself, in his best engines? It has been stated that Watt ascribed this loss to unavoidable leakage by the piston, &c.; but on consulting several engineers on the subject, it appears that no very considerable loss could happen from this cause, as he took great pains in the finishing of his cylinders and pistons. It also appears that he had at least a suspicion of the true cause, which will be hereafter explained; namely, a cooling which takes place within the cylinder. The evidence of this is, that he took great pains to prevent it by clothing the working cylinder with non-conducting substances, and even by surrounding it with steam in a jacket.

While conversing with my brother on this subject, he remarked that he thought the cylinder was cooled by the evaporation which took place within it during the time of the vacuum, as the interior surface must be covered with a film of water every time the steam is admitted. The cause of the evil now appeared quite clear. The engine at first starting is, of course, colder than the steam; it therefore becomes loaded with the water; a vacuum is made in the cylinder; the water within is rapidly converted into steam; it derives its combined caloric (100°) from the metal of the cylinder and piston; these are cooled down by the abstraction of as much caloric as entered into the composition of the steam thus evaporated. Again, the supply steam is admitted into the cooled cylinder, and is condensed until the apparatus is raised to its own temperature; and not till then does it begin to act. Hence arises a fresh deposit of water, which is again evaporated with a production of cold; and thus the process continues as long as the machine acts. And here it may be noted, that this process constantly takes place in double-acting engines, for the vacuum process is constantly occurring either above or below the piston. On the other hand, in the bastard or Cornish engine, the vacuum takes place alternately, and only during one-half of the time the machine is in action. This may well account for the general economy of this machine. In addition to which, the adaptation of the steam-jacket—a fact now ascertained—will, as Mr. Frost observes, explain their vast superiority. The clothing of the boilers and steam pipes, and of the cylinder, together with the management of the furnaces, may also be considered subsidiary to their effect. Having thus ascertained the cause of the great waste of steam, it now became the question, How was it to be remedied? It was evident the plans hitherto pursued would not be practicable. It would be impossible to surround the cylinder with steam of the pressure of 500 lbs.; and I had ascertained that less would not effect the object even on so small a scale. Also, I had found that passing steam through metal pipes, exposed to the action of the fire, or of heated flues, was attended with practical difficulties which were insurmountable. It then occurred to me that as it was only required to raise the temperature of the cylinder a trifle above the condensing point, this might be effected, provided the whole of the supply steam were raised to an equal temperature, and that all uncombined water were prevented entering with it. In order to effect this it was necessary to have a very extended surface applied to the heating steam. I found afterwards that a fagot of tubes, being surrounded by the same steam that heated the jacket, answered the purpose. This fagot, being inclosed in a portion of the steam pipe, or in the heating boiler, I called a steamer.

The apparatus was applied to an engine belonging to Mr. John Penn. This engine was employed in turning one pair of millstones, and it was ascertained, by measuring the coals and wheat, that the consumption was 3.6 lbs. coals for each bushel of wheat ground.

This, considering the smallness of the engine, and its being of low pressure, is less than in any

engine yet known; for even Wolf's engines on a large scale, with high pressure and expansion cylinders, consume from 3 lbs. to 6 lbs. for each bushel. I have since ascertained by calculation that this engine expended little above 8 per cent. more than it should by measurement, while even the Cornish engine expends 33 per cent more than the proper quantity.

On experimenting, however, with this engine, I found I had not produced the maximum effect. In order to explain this clearly, I will state the mode by which this was ascertained. The index of the injection valve was set to a given point; the temperature of the injection water was ascertained, also that of the hot-well; the difference of these in any one experiment compared with the difference between them in another, the quantity of the injection being constant, will give exactly the comparative quantities consumed in each case. By experimenting in this way, I found that on raising the pressure of the heating boiler from 30 lbs. to 60 lbs and even to 120 lbs. on the square inch, the temperature of the hot-well still diminished. This put me to contrive again; for it was evident that such high pressures were inadmissible, and yet I was desirous of producing, if possible, the maximum effect. A plan then occurred of a priming or separating-box of a very simple construction, which, by giving a circular motion to the supply of steam before entering the siccator, would, by the centrifugal force acquired by the free water which always rises from the boiler, be separated and fall to the bottom of the apparatus. This priming box was consequently applied when I was gratified by observing its effect; for on raising the temperature of the heating boiler from 29 lbs. to 90 lbs., no diminution of temperature took place in the hot-well. This was a full proof that the maximum power of the steam was produced. The pressure of the heating steam was afterwards diminished to 15 lbs. on the square inch, on which an increase of temperature took place in the hot-well of 5 per cent. The pressure in the supply boiler was 6 lbs., so that a difference of about 9 lbs., or about 18°, is sufficient to enable steam to produce nearly its full dynamic effect. This difference would suffice, but by increasing the surface of the tubes in the siccator, the maximum effect may be easily produced at a less temperature.

About this time the matter came under the notice of the Admiralty, and the lords were pleased to grant a sum for experimenting on this engine. The experiments were conducted on the same plan as before, except that a dynamometer was applied, which was loaded to indicate about 18 horse power; which same power was also shown by the indicator. The experiments were under the inspection of the Comptroller and Inspector of Steam Machinery, and performed by Mr. Wright, one of the engineers of the Admiralty. The experiments were comparative, and showed the expenditure of steam under equal loads; first of the engine without steam in the jacket, then with ordinary steam in the jacket, and lastly, with the siccator, &c., as above described added to the engine. The temperature given to the injection water being ascertained, and the power being inversely as these quantities, it appears that the apparatus produces a saving of 25 per cent. compared with the engine with ordinary steam in the jacket, and of 46 per cent. compared with the engine without steam in the jacket.

These quantities, however, must not be considered as indicating the whole of the saving which would be produced by the application of anhydrous steam to engines in general; for this reason, that the engine on which the experiments were performed was so arranged as to produce the best possible effect without its use; for in addition to the engine being made by a first-rate engineer, there was abundant steam room in the boiler, the steam pipe was large and inclined downwards to the boiler, besides which the steam was applied to the jacket, not as is usually done, but in the same way as in the Cornish engines, or rather in a somewhat superior manner, as the cylinder cover was covered with steam, and every pains taken to insure the perfect action of the old method. On the other hand, in locomotive, or even in marine engines, where there is a confined steam space,—and especially in locomotives, in which an enormous power is forced from small boilers,—there must be a very

serious loss by the use of steam hydrated in a very high degree. The value of the anhydrous steam in these cases can hardly be appreciated.

The makers of locomotives appear to be aware of this in some degree, as in the newest engines the steam room is increased by means of large steam chests, &c., as much as the confined space will admit; but after all is done, the almost ruinous expenses of repairing these machines, attest the evil effects arising from the present system. Capital would be well engaged in carrying out this plan with respect to locomotives and marine engines.

In consequence of these experiments, which were repeated in a variety of ways, a recommendation was made to apply the apparatus at the Government expense. This was about being done when its progress was arrested, in consequence of new regulations respecting experimental matters.

To be continued.

Enormous Increase of the Iron Business in Wales.

The increase of the iron business is, probably, unexampled in the history of the world. The population during the 40 years, from 1801 to 1841, increased in Newport from 1,423 to 13,766; in Treveethin, from 1,742 to 14,942; Aberystwith, from 805 to 11,272; Bedwelly, from 619 to 22,413. This is the progress in Monmouth; in Glamorgan the increase has been, if not the same enormous proportion, still enormous in itself. Thus, during the same period, the increase at Merthyr has been from 7,705 to 34,977; at Cardiff, from 1,870 to 10,077; at Swansea, from 6,831 to 16,787. The progress in the actual trade is shown by the returns to be equally astonishing; in 1820, the iron sent from the works for shipment to Newport, was 45,462 tons, in 1847, 240,637. The quantity at Cardiff in 1820 was 50,157 tons; in 1817, it was 220,953; and this is exclusive of a quantity of iron shipped from smaller ports which owe their existence to the last 20 years. We scarcely believe that any other country could show a similar result in one branch of business. The quantity of coal sent in 1846 from the four ports of Cardiff, Swansea, Llanelly, and Newport, amounted to 1,847,318 tons. The value of the shipments of iron alone from the counties of Monmouth, Glamorgan, and Carmarthen, was estimated in 1847, at £4,000,000.

Application of Hot Air in the Smelting of Iron.

At the smelting furnace of Plous, in Wurtemberg before employing the hot air, the consumption was 100 kilos, (2 cwt.) of ore, 40 cubic feet (48½) of charcoal, and the produce under the old system, was 3,000 kilos, (3 tons), while with the hot air, it is on an average 37,500 kilos (34 tons). At Konigsbronn, in the same kingdom, to obtain 108 livres (1.17 cwt.) of bar iron with cold air it required 20 cubic feet (24½ England c. f.), and with hot air only 17 cubic feet (20½). The temperature to which the air is raised is, however, much inferior to the lowest standard in this country; for at Plous, according to Berthier, the temperature of the heated air is only 150° or 200° [302° 492° Fahr.], while at the Clyde-Iron-works, the usual test or the standard temperature is the melting point of lead, or 606° Fahrenheit. This is the lowest point to which the heat is allowed to fall, for it may in general be much higher; yet, even with this disadvantage in Germany, we see that the expenditure of the combustible matter has been reduced one-fourth with a sensible increase of the product. The effect of the heated air has commonly been attributed to the absence of the cooling power which was exercised by the cold air on its being introduced in contact with the heated contents of the furnace. Berthier denies that this is the mode in which it operates. He thinks that the phenomena which result from the employment of hot air proceed from the greater activity of the combustion in the furnace than when the air has not been previously heated—that is to say, that with the same weight of air there is more oxygen absorbed in the first case than in the second. If this opinion is correct, it follows that less hot air will be required than of cold air for the combustion of an equal quantity of charcoal in the furnace, and that the air which proceeds from the latter being possessed of little oxygen, cannot support combustion.

Now, the exhaustion of the oxygen in the air is a point of essential importance, when we wish to obtain a very strong heat; for the azote of the air only assists in producing a loss of the portion of the heat developed by combustion. Hence, the less air that is consumed, the less does this cause of cooling operate. Besides, the affinity of gas for solid substances is increased by the heating of the gas. It has been said that effects similar to those produced by heated air may be obtained by the employment of cold air, sufficiently compressed, or what would be extremely powerful, the use of hot air compressed to such a degree as experience might point out.

Magnetic Action on Railway.

It is well known that an opinion has prevailed among scientific men for a few years, that railway axles, after having been used for some time, become crystallized by galvanic action, and are then very easy of fracture. The subject was brought before the last meeting of the British Association by Mr. Greener, who, without questioning the fact, stated that the axles were affected with electricity generated by the bearings and the journal while in rapid motion. He said, that by subjecting inferior iron to currents of electricity, it was soon changed into a crystalline state, and lost its tenacity.

Mr. Stephenson said, that it was dangerous to assume facts and reasoning from the assumptions of Mr. Greener. With respect to the influence of vibration on the structure of iron, he considered that there was good room to doubt that the bearing force or pressure upon metals caused crystallization. It was by no means proved that railway axles were subject to the passage of currents of electricity, and therefore—granting the assumption that the passage of the electric current changed the character of the iron—there was a link wanting in the chain of reasoning, inasmuch as it was not proved that axles were subject to this electric influence. Moreover, he was inclined to doubt whether, if a piece of iron was at first perfectly fibrous, vibration would ever change the structure of the metal. The beams of Cornish engines, for example, were subject to vast pressure; they never become crystallized; the connecting-rod of a locomotive was subject to great vibration, strain, and pressure, vibrating eight times a second when the velocity is forty miles an hour; he had watched the wear of a rod for three years, and no change was perceptible in the structure of the iron.

Electro-Metallurgy.

This has already become an important branch of industry; and the advantages which plating by the agency of electricity possesses over the older process will be readily understood when it is stated that previous to this discovery, raised surfaces, and especially high relief, which are cast, could not be produced on articles of plate in any other metal than pure silver. Hence, plating was confined to articles having a plain surface; or when applied to ornamental designs, such as a salver, or a dish with a raised border, the relieved portion was formed of a thin stamped surface of silver, filled with base metal, and attached to the body of the article. It is evident that this process was extremely limited in its application to ornamental manufacture; but by the electro system, the subtlety of the agent employed in plating carries the particles of decomposed metal to every crevice of the composition, and hence no elaboration of ornament, height of relief, or complication of design presents the slightest difficulty to the electro-plater.

The following is a brief description of the process of plating:

The base, or body upon which the pure silver is deposited, is a white metal, approximating to silver in color and density of structure. The troughs are three parts full of a solution consisting of dissolved or decomposed silver, and an alkali called cyanide of potassium; this forms the plating solution. The articles to be plated are suspended

in the solution by wires in contact with rods connected with the electric current, derived from a permanent magnet. A steady, inexpensive, and never failing current of electricity is evolved from the machine. The importance of uniformity cannot be overrated, as it enables the operator to calculate with precision the quantity of metal deposited in a given time.

The article to be plated having been suspended in the liquid, the magnetic current is passed through it; and the result of the action is that the solution is decomposed, the metal separated from the potash, and gradually deposited on the surface of the article—the thickness of the coating being determined by the duration of the immersion, the quantity of the solution, and the strength of the current. In the process of plating, the solution of course becomes exhausted of the metal. To keep up the supply, plates of pure silver are suspended in the liquid, and the silver dissolves as rapidly as the deposition on the articles takes place, atom for atom. Bi-sulphuret of carbon is added to the solution, to give the articles a polished appearance, so that they do not require burnishing.

The process of gilding is very similar; with this difference, that in order to expedite the operation, the solution is heated. It is at once evident that such is the command of the operator over the thickness of the coating, that the quality of the plated article depends altogether upon the character of the manufacturer; and upon that also depends the permanency of the plating. In the hands of a skilful operator, the covering adheres so firmly as to become one body with the metal on which it is deposited. If therefore, there ever is in any electro-plated articles a tendency to skin or peel off, the fault arises from the bad quality of the metal employed, or from the carelessness or incompetence of the operator, not from any defect in the system.

Progress of Manufacture.

The increase of manufacturing industry in Great Britain in sixty years is shown by the following table of the raw materials used in that kingdom:

	In 1790.	In 1849.
Wool.....	3,245,352 lbs.	76,756,173 lbs.
Silk.....	1,253,445 "	6,881,861 "
Hemp.....	592,306 "	1,061,263 "
Flax.....	258,222 "	1,806,786 "
Cotton.....	30,574,374 "	758,841,650 "

Origin of the use of Steam in Propelling Boats.

The last Patent Office report furnishes some very interesting information in regard to the origin of the use of steam in propelling boats, and is not generally known. It is presented in documents found in the archives, and addressed to the Legislatures of Virginia, Maryland, New York and Pennsylvania, and to private individuals, whose dates range from 1784 to 1788.

From these documents it appears that within the period stated, two persons, James Rumsey and John Fitch, got it into their heads that they could propel boats by steam, and a contest rose between the two as to whom the right thus to run boats belonged as the first discoverer. In September, 1788, Rumsey presented a petition to the honorable representatives of the commonwealth of Pennsylvania, praying that "he be granted the exclusive right to the steamboats," which petition was opposed by John Fitch, who represented that the right was already vested in him by a special act of the Assembly, passed on the 28th March, 1787. Mr. Fitch in March, 1787, also obtained from the Legislature of New York, the exclusive right to run steamboats on the waters of the state. These grants were made after the committee had seen his boat and machinery, not then completed, but which he completed the next year, so as to run his boat on the Delaware river, at the rate of four miles an hour. On another trial run between Philadelphia and Burlington

ton, she made twenty miles in three hours and ten minutes. But though Fitch got the start of Rumsey in New York and Pennsylvania, the latter headed him in Virginia and Maryland. The Legislature of the state vested in James Rumsey the exclusive right to run steamboats, by an act dated January 22d, 1785, though the application was brought before the body as early as November 11th, 1783.

Lecture on Minerals at the Crystal Palace.

The following is an abstract of a lecture delivered by Prof. Ansted at the Crystal Palace, in June last, on the metals. He commenced with iron, as the most important, and proceeded to show how it was obtained, and the modes by which, when produced, it was reduced, so as to be serviceable to mankind. Iron was rarely found native; it was occasionally discovered, but when that occurred it was generally in the form of meteorites, which were now very scarce in Europe. In South America many blocks had been seen; this, however, might arise from the circumstance that as that was comparatively a new continent, it had not been so well explored as countries in the other hemisphere. The largest mass of this meteoric iron hitherto found, had been said to weigh 30,000 lbs. All impure iron contained carbon in greater or less quantities. The different kinds of iron were then described. Cast iron was hard, but wanted toughness; it was like glass, being brittle and easily broken; there was a great similarity in their component parts between cast iron and steel. Wrought iron could be twisted into a knot, or beaten out into thin plates; a wire drawn out to one-twelfth of an inch was capable of supporting the weight of 550 lbs. Iron, though not generally found in a pure state, was present in all vegetable matter, in all earthly minerals, and there was not a clay which did not contain some portion of iron. One of the most important of the ores was the magnetic, which consisted of the peroxide and protoxide of iron; this was found in Scandinavia; in that country there were about 350 furnaces in blast, and the annual production in round numbers might be estimated at 50,000 tons. The mine of Dannemora, which was one of the most celebrated, had been worked upwards of three centuries.

Russia likewise produced superior ores, as well as India. Nearly all the Sheffield cutlery was made from magnetic iron. In the island of Elba there is a large mountain mass, about two miles in circumference and 500 feet in height; the production, however, was not very large, which arose principally, from the difficulty of obtaining fuel. Two remarkable mountains of this kind were to be found in the United States, on the borders of the river Missouri. The ores most commonly found in England were of that species denominated hematites. Allusion was made to bog-iron ore, which contained much less sulphur than other varieties, and when fused with charcoal made the best iron. The ores in France were mostly hydrates; and the French iron, though good of its kind, was made at a monstrous cost. The spathic iron of Styria was also mentioned; the ores were first exposed for some time to the air, and then iron was run down by a single fusion. The metal from this carbonate of iron was then fit for use, and the Styrian scythes were known over the world, and formed a considerable article of the export trade from Austria. Another species of iron was iron pyrites; this, from the great quantity of sulphur it contained, was of no value for iron, but was used for the manufacture of sulphur. Notice was taken of various alloys; among others Franklinite was mentioned, which

was an ore of iron and zinc. The conversion from iron to steel was then gone into, and the different methods of obtaining shear, blister and cast steel, with their several qualities, fully discussed.

Copper was next in importance to iron. It had been longer known than that metal; and in every country had been used for tools, previous to a knowledge of iron being acquired. It was remarkable for its sonorosity and tenacity, as well as for the purposes to which it could be applied in the arts and sciences. It was found in several combinations, and in various localities. The common ore of copper was the yellow pyrites, which was first calcined, and afterwards reduced by different processes to the copper of commerce. Copper was found in combination with nearly every other metal, and its ores were numerous. Vitreous copper ore had been found in some quantity in Silesia and Saxony. Large quantities of native copper had been found in the United States, on the borders of Lake Superior. The uses of copper, when manufactured, were too well known to require enumerating.

Silver was a metal likewise of great utility and beauty, but which on account of its value and comparative scarcity, did not enter so much into consumption as other metals. The ores of silver were sometimes found native; but this was not generally the case. The most common were the sulphurets; but it was often mixed with antimony, bismuth, and other substances. Great quantities had been obtained from South America, as well as Sweden and Norway; and not an inconsiderable amount was derived from the lead ores produced in England and Spain. Silver was excessively malleable, which adapted it to a great variety of uses. The oxide of silver gave an intense yellow color, and was used in the higher order of porcelain. The nitrate of silver was employed in medicine; and the bromines and iodides were extensively used in daguerreotyping.

Lead was rarely found pure; its texture was close, and it was distinguished by a total absence of tenacity. It was generally found combined with sulphur, and usually called galena; it was a most valuable metal, and adapted to a variety of uses. The production in England might be estimated at about 55,000 tons per annum. The fusibility of lead was well known, as well as the various uses to which it was employed as an alloy.

Tin occurred in but few localities; its great place of production in England was Cornwall. The tin mines of that county were well known to have been worked at a period anterior to the Romans. It was also found in limited quantities in the United States, Bohemia, France, Greenland, Sweden and Galicia in Spain. The principal locality for tin in Asia, was the island of Banca and peninsula of Malacca. About 5000 tons were raised yearly from the islands of the Indian archipelago, and about the same quantity in England. The different modes of dressing and smelting, were then described at some length.

The production of zinc in England was not far from 1200 tons per annum; it was also imported from Germany. Its ores were known under the name of calamine and blende. Cadmium had been found in Silesia associated with it; and there was some probability it might be used extensively for galvanic purposes.

Mercury, and the scarcer metals—palladium, rhodium, osmium and iridium—were then alluded to, in their natural state as well as metallic form.

The professor mentioned the different descriptions of minerals with which they were found associated; but our limits preclude a more detailed account.

Bridge Across the Medway.

From the London Architect, for June, 1851.

On the Pneumatic Method adopted in constructing the Foundations of the new Bridge across the Medway, at Rochester. By John Hughes, Assoc. Inst. C. E.

This bridge was described as being designed to consist of three large openings, a central one of 170 feet in width, and two others, each of 140 feet in width, spanned by cast iron segmental girders, and of a passage to admit masted vessels to the upper part of the river, across which a moveable bridge would be placed. Each of the river piers occupied an area of 1,118 square feet, and rested upon a series of cast iron cylinder piles, 7 feet in diameter, placed 9 feet apart longitudinally, and 10 feet transversely, so that there were fourteen under each pier. The cylinder piles in the abutments were 6 feet in diameter, of which the "Strood" abutment required thirty, and the "Rochester" abutment 12. Each pile was composed of two, three, or more cylinders, 9 feet in length, bolted together through stout flanges; the bottom length had its lower edge bevelled, so as to facilitate the cutting through the ground. The bed of the river was originally presumed to consist of soft clay, sand, and gravel, overlaying the chalk, and accordingly the application of Dr. Potts' pneumatic method of forcing the cylinder piles into the ground, which had been successfully carried out in similar positions, was contemplated; but after a few trials, the ground was found to consist of a compact mass of Kentish ragstone, so that the mere atmospheric action upon the piles, induced by a partial vacuum, would be ineffective in such a situation. It was therefore decided, that the pneumatic process should be reversed, so as to give each pile the character of a diving-bell; for which purpose one of the cylinders, 7 feet in diameter, and 9 feet in length, had a wrought iron cover securely bolted to it, through which two cast iron chambers, D shaped in plan, with a sectional area of about six square feet appropriately called "air locks," projected 2 feet 6 inches above the top of the cylinder, and 3 feet 9 inches below the cover. The top of each "air lock" was provided with a circular opening 2 feet in diameter, with a flap working on a horizontal hinge, and an iron door, 2 feet by 3 feet 4 inches, with vertical hinges below the cover; each air lock was also furnished with two sets of cocks, the one for forming a communication between the cylinder and the chamber, and the other between the chamber and the atmosphere. Compressed air was supplied to the cylinder pile by a double-barreled pump, 12 inches in diameter, and 18 inches stroke, driven by a six horse power non-condensing steam engine. At first the expelled water was made to pass to the river, from beneath the lower edge of the piles, but when the stratum became so compact as to oppose a high degree of resistance to the passage of the air, an outlet was formed through the side of the uppermost cylinder, by the introduction of a pipe having the form of a syphon, the long leg of which reached the bottom of the pile, and was subject to the pressure of the condensed air, on the surface of the water within, whilst the short leg leading into the river, had the effect of relieving the amount of compression, provided a vacuum was once obtained in the body of the syphon. Such an effect was readily produced by connecting the summit with the exhausted side of the air pumps, by a pipe, which could be opened or closed at pleasure. To insure the down motion of the pile, and to give it a weight which should be at all times superior to the upward pressure, two stout trussed timber beams were laid on the top of the cylinder, in a direction suitable for bringing the adjacent piles into action as counterbalance weights, by four chains passing over cast iron sheaves.

Two light wrought-iron cranes were fixed inside the cylinders, the jibs of which swept over the space between the air locks and windlasses, inside and outside, for the purpose of hoisting the loaded buckets, and lowering the empty ones.

The method followed in working the apparatus was found to be so simple in detail, as to be perfect-

ly intelligible to all the workmen employed. The pumps being set in motion, the flap of one of the air locks and the door of the other, were closed; a few strokes compressed the air within the pile sufficiently to seal the joints, and whilst the pumping was in progress, the men passed through the air locks to their respective stations. When the water was shallow, the pile descended, by scarcely sensible degrees, as fast as the excavation by hand permitted; when the water was deep, the excavation was carried down full 14 inches below the edge of the pile, which then descended, at once, through the whole space, as soon as the pressure was eased off.

The most perfect certainty and success had attended the employment of this simple system, and as it promised to afford considerable assistance to engineers in the prosecution of similar works, the author laid the account before the Institution with the sanction of Mr. Cubitt, President Inst. C. E., the engineer-in-chief, and Messrs. Fox, Henderson & Co., the contractors for the work.—*Proc. Inst. Civ. Eng. May 13th, 1851.*

Railroads—Cheapness and Rapidity of Travel.

One of the most extraordinary features of this progressive age, is the comfort, rapidity, safety and cheapness with which great distances may be traversed in an almost incredibly short space of time. This fact will be especially apparent to western people, who, a few years ago, were in the habit of visiting the east by means of steamboats and stage-coaches. A trip of a thousand or fifteen hundred miles, one-half of which, perhaps, was to be performed in stage-coaches, with all the accompaniments of rough roads, sleepless nights, stiffened limbs and aching heads, was by no means a trivial affair. Nothing short of urgent business could ordinarily induce one to undertake such a journey. In those days, travellers from the west to the east, made it a point to avail themselves of steamboats, to the greatest practicable extent.—Hence the usual route was up the Ohio to Wheeling or Pittsburgh, and thence by stage to Philadelphia or Baltimore. But the opening of the lines of railroad from Cincinnati to Lake Erie, and thence to New York, and the construction of the Central railroad of Michigan, have wrought a vast revolution in the lines of travel. Now, if one wishes to go from St. Louis, Louisville, or Cincinnati, to Baltimore, Philadelphia or Washington, he would scarcely once think of the route by Wheeling or Pittsburgh. Being at Cincinnati, he can go by way of Cleveland to New York in less than 48 hours, and thence through Philadelphia and Baltimore, to Washington in about fifteen hours more. In other words, he can go to Washington by this route, sooner than he could go from Cincinnati to Pittsburgh by boat. The result is, that for the present the Pittsburgh and Wheeling routes, are in a great measure abandoned, while the tide of travel over the railroads to Lake Erie, is almost incredibly great. Consequently, New York and Boston are now practically nearer, and more accessible to the people of the West and a large portion of the South, than either Philadelphia or Baltimore; indeed, they can be reached quite as soon as Pittsburgh or Wheeling. Formerly the road from the West to New York and Boston was through Baltimore and Philadelphia. Now, however, it is precisely reversed; and the road to the latter cities is through the former ones. This extraordinary revolution in the routes of travel is, of course, attributable solely to the railroads of Ohio, New York and Massachusetts. These States, with profound sagacity, have made a vigorous effort to secure the rich trade of the West. Thus far, they have outstripped their rivals, and it is perfectly evident that unless Philadelphia and Baltimore bestir themselves most industriously, in pushing their railroads westward, they are destined to lose the greater part of the western trade they have heretofore enjoyed.—Nothing but the most vigorous action on their part can avert from them this great calamity. If once their trade with the West is lost even temporarily, it will be extremely difficult to build it up again.—Their customers will have formed new business connexions at New York and Boston, which can not be easily disrupted, when permanently formed. In truth, the most superficial observer cannot fail

to perceive that to compete successfully with their rivals, Philadelphia and Baltimore must, *without delay*, establish direct railroad communication with Cincinnati and St. Louis. We are astonished that the people of the two former cities have not long since foreseen this necessity and acted upon it.—They should not content themselves with reaching Cincinnati. This would by no means accomplish the ends desired. It would leave the trade of the rich States of Indiana, Illinois, Missouri and Iowa, to seek a vent through the railroads of Illinois and Indiana to the lakes, and thence to New York and Boston. They should, therefore, at once push a line or lines of railway directly to St. Louis, so as to afford the shortest and most direct route from the West to the East. Baltimore and Philadelphia should contribute liberally towards these roads, for several reasons—1st, because it affords the only means of preserving and increasing their trade;—2d, the people of the west have but little surplus capital which can be devoted to such improvements, whilst in the cities we have named, there are always ample means seeking investment. 3d, It would be an excellent investment of capital, and would return large and certain profits to the stockholders. During our recent visit to the east, we formed the acquaintance of Col. James Cook, the President of the Parkersburgh company, and were gratified to learn from him, that there was every probability of the early completion of this very important link in the line between Baltimore and St. Louis. Indeed, we regard it as past all doubt, that Baltimore will very soon be in direct communication by railroad with Cincinnati. But she should not be content with this. The road from Cincinnati to St. Louis must be made, and Baltimore and Philadelphia are deeply interested in its construction. They should remember that a railroad will soon be completed from Galena to Chicago; that another is being built from Rock Island to Chicago; that the Mississippi will again be tapped at Burlington, Iowa, by a road from Peoria, Illinois; that Quincy is constructing a road to the Illinois river, and that the great Central railroad of Illinois from Chicago to Cairo, will very soon be completed. Let them take a map and see how completely these roads, all pointing to Chicago, will drain the trade of Illinois, Iowa, Wisconsin and Missouri, and they cannot fail to perceive the absolute necessity of a great central road, running directly from the heart of the West to the East, in order to secure the trade of those States.—*St. Louis Intelligencer.*

For the American Railroad Journal.

Railroad Controversy in Indiana.

We understand that an injunction has been granted by a Judge in Northern Indiana, on the application of the Michigan Southern line of roads against the Michigan Central and New Albany and Salem railroad companies to restrain them from prosecuting their works in Northern Indiana in the direction of Chicago. By the law of Indiana, no injunction can issue unless there be ten days' notice given to the adverse party to appear and show cause against it, unless a case of pressing emergency be made out, which renders it unsafe to allow of the giving of notice. The Michigan Central and New Albany and Salem railroad companies are engaged in building about 130 miles of road in Indiana, 40 of which are between Michigan city and the Illinois line; and this latter is in a very forward stage of construction. Yet the emergency was made out to be so great, and the danger that that road would be made before the ten days expired was so imminent, that the Judge not only granted the injunction without notice, but he would not even delay action until the counsel for the defendants might arrive, which he was told would be in a few hours, as the friends of those companies had immediately dispatched messengers and telegraphic dispatches for them.

Hon. Hugh White and E. C. Litchfield, with their counsel, went to the extreme North-western county of Indiana to make the application, passing through Detroit and La Porte, where they knew the counsel for the defendants resided; saw and conversed with them, or one of them, but never intimated their object. They proceeded by stealth, knowing their claim would not bear discussion, and fearful of an hour's delay, lest counsel should arrive before the injunction should be made.

The counsel for the defendants arrived a few

hours after it was made, one of them having travelled by express two nights to get there, and moved, as we understand, to modify the injunction upon giving ample security to the complainants for all damages in case their bill was sustained, which Judge Chamberlin declined to do, upon the ground that it would amount to a dissolution of the injunction, which could not be had except upon answer, though admitting that the facts stated in affidavits submitted, if stated in an answer, would make a strong case for a dissolution, and admitting, as we understand, that the claim of an exclusive right around the Lake by the complainants could not be maintained.

The counsel for the defendants, therefore, immediately took an appeal from the order granting the injunction, which suspends its effects for thirty days by the law of that state, and in the meantime will probably file their answer, and procure a dissolution of the injunction. The work, therefore, upon the road, we understand will not be suspended.

The argument which seemed to have been used with so much effect by the counsel for the complainants, was, that money was tight in the market, and unless they could keep up the opinion that they had a monopoly around Lake Michigan, they could not raise sufficient to continue their work.

Michigan City, Sept. 1, 1851.

U.

Experience of English Railways.

From Lardner's Railway Economy, lately published, we gather some interesting facts relative to the working of the English railways:—

Analysis of 100 Accidents, produced by Imprudence of Passengers.

	Killed.	Injured.	Total.
Sitting or standing in improper positions.....	17	21	28
Getting off when train is in motion.....	17	7	24
Getting up on train in motion.....	10	6	16
Jumping off to recover hat or parcel.....	8	5	13
Crossing the line incautiously.....	11	1	12
Getting out on wrong side.....	3	3	6
Handing an article into train in motion.....	1	0	1
	67	33	100

The incautious railway passenger may derive a salutary lesson from this table. He will see from it that two thirds of the accidents resulting from imprudence are fatal to life, and that nearly seven of every ten of such accidents arise from sitting or standing in an improper or unusual place or position, or from getting on or off a train while in motion.

This latter circumstance should be most carefully guarded against, for it is a peculiarity of railway locomotion that the speed when not very rapid always appears to an unpractised passenger to be much less than it is. A railway train, moving at the rate of a fast stage coach, seems to go scarcely as fast as a person might walk.

It appears from an analysis of the return of accidents, made by the Railway Commissioners, that in every one hundred accidents the following is the proportion of the causes which produce them:

Accidents from collision.....	56
“ broken wheel or axle.....	18
“ defective rail.....	14
“ switches.....	5
“ impediments on road....	3
“ off rails by cattle on line..	3
“ bursting boiler.....	1
	100

From the following table it appears that short traffic constitutes the staple of the railway passenger traffic.

Year.	Aver. daily mileage	Aver. number of passengers booked.	Aver. distance travelled by each passenger.
1846....	2,184,300	119,975	18.22
1847....	2,205,494	139,440	15.74
1848....	2,484,944	159,134	15.66
1849....	2,978,535	194,854	15.30
1850....	3,290,864	228,265	14.41

It appears from the official returns lately published, that the proportion of the revenues of the rail ways, arising from merchandise, has been gradually increasing.

In the following table we have given the receipts of the last six months of each of the last three years.

Total receipts from	Percentage of total receipts by	Goods,
Passengers Goods, &c.	Total. Passengers, &c.	
1848..3,283,302	12,461,663	57.40 42.60
1849..3,455,217	12,695,243	6,350,460 54.40 45.60
1850..3,817,403	13,329,079	7,147,733 53.43 46.57

On comparing the gross revenue produced by the railways of the United Kingdom with the total length of lines under traffic, it will be apparent that the increase of traffic has proceeded in a much less ratio than the extent of the railways. In the following table we have given in the first column the average length of railways under traffic in each of the last three years, and in the second column, we have given the gross receipts of the last six months of each year:

Railways under traffic.	Increased per Receipts.	Increased per centage of railways open	Increased per centage of receipts.
1848..5,007	5,740,965		
1849..5,740	6,350,460	14.6	10.5
1850..6,464	7,147,378	25.4	12.5

It appears, therefore, from these results, that while the railways were increased in length 14.6 per cent. in 1849, as compared with 1848, and 25.4 per cent. in 1850, as compared with 1849, the revenue proceeding from them was increased only 10.5 per cent. in 1849, as compared with 1848, and only 12.5 per cent. in 1850, as compared with 1849.

The First Locomotive ever used in the United States is still in good running order on the Little Schuykill railroad. It was built in Liverpool, England, by Edward Bury. At that time it was necessary to send a man from England to put the engine in running order on the road. It was but twenty years ago that Edward Bury's engine was placed upon this road. Since then, the iron track has been extended throughout our land; the fierce breathing of the iron horse is heard in almost every valley; the ingenuity of our own Mechanics enables them to supply our own engines, and even furnish them to nations across the ocean.

Railroads in Northern Kentucky.

The Kentucky Whig, published at Mount Sterling, in Montgomery county, published an article recently in favor of a railroad from Lexington to the Big Sandy river, which would pass through the counties of Fayette, Clarke, Montgomery, Bath, Fleming, Carter, and a corner of Greenup. The charter granted by the Kentucky Legislature for a railroad from Lexington to Big Sandy, making Owingsville, in Bath county, an intermediate point, probably contemplates a route through Bourbon, via North Middletown, in that county. This route would leave Clarke and Montgomery counties out of its track; and it is in this view, we presume, that the *Whig* declares itself in favor of an amendment to this charter, so as to strike out the requirement that the railroad shall run by intermediate points, or else that a new charter more acceptable to Clarke and Montgomery, be obtained.

The Maysville Eagle, in commenting upon this project, suggests that a railroad from Mount Sterling to Paris would be more attainable, and more available when attained. Such a road would run through a rich productive country, the people of which are abundantly able to construct it, and the business of which would sustain it. Reaching Paris, they could connect with the Maysville and Lexington road, uniting the interior of Kentucky and Tennessee with the Atlantic seaports; the Covington road, leading to Cincinnati; and a road from Paris via Georgetown to Frankfort, on the direct route to Louisville. These roads will be

finished, in all probability, as soon as Montgomery will find it practicable to make any connection whatever. And there is probably no other way in which so great advantages could be secured to that county with so little outlay.

The Southwestern Carrying Trade.

Continued from page 571.

The writer recommends that the different transportation companies invite the attention of the south to this route, by authorized publications or advertisements. It requires some degree of effort to turn the channels of trade in a new direction; but if the proper inducements be held out, the carrying trade must eventually take that route which is the cheapest and most direct. Much of the merchandise of those sections already takes this route, and it is the *producing interest* which must be operated upon and influenced in order to attain the full results desired. The tobacco and hemp grower and the cotton planter must be led to see that it is for their interest to seek this new outlet for the products of their industry; and ere long the effects will become visible in the large accession to the business of our channels of western communication.

The writer also proposes a small discriminating rate of toll in favor of all tobacco manufactured and unmanufactured, cotton, hemp, pork, lard and flour shipped from Louisville, and points south of that, to the Atlantic cities over the northern route. It is not the amount of discrimination made in the rate of tolls that will exert the desired influence upon the agricultural interests of the south that is wanted to secure the success of this project; but the mere fact that a discrimination is made in their favor at all, will command their attention and tend in a great measure to remove preconceived prejudices against all other modes of reaching the seaboard than by way of New Orleans.

He goes on to assign some reasons why this action should be taken by the canal board and the different transportation companies, as follows:

"It should be borne in mind that the Erie canal is by no means the only artificial avenue by which the southwest can reach the seaboard, even when they have determined to ship by the northern instead of the southern route. And it is proper that the canal board should bear this in mind, as well as the canal transportation companies, in whatever action they may conclude to take, should this vast trade be considered as worthy an effort on their part to secure it. During much of the navigable portion of the year, tobacco, cotton and hemp, can be sent direct from Louisville to Pittsburgh, and hence by the Pennsylvania canal to Philadelphia; but your route has the advantage in time and cost of transportation, if you see fit to employ it. There is also another more immediate rival route in the Erie railroad, and which must claim public attention in our section unless you offer to the southwest the superior advantages cheap tolls and cheap transportation upon your canal will hold out.—There is also a choice whether, upon reaching Toledo from Cincinnati by the Ohio canal, we shall send our staple products by sail vessels to Oswego, and thence by canal to Albany, or go by steam to Buffalo and thence through the entire length of the Erie canal. The Oswego route is now the cheapest, owing to the lake transportation sail vessels afford from Toledo to Oswego; but the delay by sail vessel navigation, and its increased hazard, will always give the preference to the Buffalo route, which is not only more speedy, but can be made the most economical. And although it may matter but little to the State of New York whether the products reach the tidewater by encountering her public works at Buffalo, or by striking them at Oswego, yet, in either contingency, it requires some exertion should be made to turn the southwestern carrying trade over either the one route or the other. Groceries have been sent by the Oswego route this season from New York to Cincinnati

and Louisville, in the space of thirty days, at from fifty to sixty-five cents per hundred pounds; while drygoods, hats, boots, shoes, and other light goods, have been carried to the same points in sixteen days, from New York to Buffalo by canal, then by steam lake navigation to Sandusky or Cleveland, and thence by railroad to Cincinnati, at from a dollar to a dollar ten cents per hundred pounds. The Albany route, therefore, has a double advantage, if rightly employed by your public functionaries and citizens, over either the Erie railroad route, or the route by the Ohio river and the Pennsylvania canal. This must appear obvious to the most casual observer."

There is another article of perhaps equal importance with cotton and tobacco, the freight on which would yield a handsome revenue; this is the article of pork. During the last season, there were slaughtered and packed at Cincinnati, about 250,000 hogs, and at Louisville nearly 200,000. Whatever portion of this large number of hogs goes into mess or prime pork, or into lard, that is put up on northern account, or destined for the New York, Boston or Philadelphia markets, as well as canvased hams, should come by this route; yet the southern route now gets the whole of it.

With regard to the rates of toll, the remarks of the Journal's correspondent are so well-timed and appropriate that we give them entire:

"Upon examining the rates of toll charged upon different articles freighted upon the canal, I find a very great distinction made between unmanufactured and manufactured tobacco. The toll upon the former is fixed at one mill per mile, while manufactured tobacco, not being specifically enumerated, is embraced under the head of "*non-enumerated articles of merchandise*," and is subjected to a toll of eight mills. This would subject Kentucky manufactured tobacco, which has now become a large article of export, owing to its successful competition in markets on the seaboard with the Virginia and Maryland manufactured tobacco, to a toll seven times greater than the raw material has to pay, and would drive it entirely from this to other routes. Here the canal board can make a discrimination in favor of Kentucky manufactured tobacco reaching the tide water either by the Buffalo route or the Oswego route, that would designate to the southwest the policy the great State of New York intended pursuing, to invite the carrying trade of that section to avail themselves of the advantages of the northern route; and which, in my judgment, would turn at once large quantities of this species of freight through the Erie canal. It is no longer a doubtful problem whether Kentucky can successfully compete with Maryland and Virginia in manufacturing her own product, and sending it even into the markets heretofore monopolized by those States. The character of her tobacco is established, and there has been no difficulty in her selling advantageously all that has been prepared for immediate use; the consequence is, that there will be at least double the quantity manufactured the coming season in Kentucky for export, that was ever put up before in that State. And as an item of freight, it is worthy the notice that I propose the canal board shall take of it, in discriminating by a reduction of tolls upon all Kentucky manufactured tobacco going from Louisville or other points in the State, to tide water by the northern route and over our State public works. Upon the same article going from tide water, the toll could of course remain as it is.

As an excuse for delay, it may be said that it will be better to await action until your canal enlargement is completed. I cannot look at it in this light. In the rivalry that is now going on between the different States to secure the advantages to be derived from the southwestern trade, procrastination will be sure defeat to the State that adopts it. I notice that Pennsylvania is already contemplating an early revision of her canal rate of tolls and a large diminution from those as now charged; and may it not be from the apprehension that their canal cannot compete with yours when its contemplated enlargement is completed? Pennsylvania knows that if she can once get the carrying trade

of the southwest turned over her canals, and commercial relations fully established with the tobacco, hemp and cotton grower, that it will in all probability be a struggle of years for New York to get it away from her. New York, therefore, should be the pioneer in sending great staples of the southwest to the Atlantic cities over the northern route and through her canal; and when the trade is, by her exertions, turned in this direction, the vastly superior advantages that her enlarged canal will give her over any other sister State, will enable her to retain that trade in spite of all future competition."

American Railroad Journal.

Saturday, September 13, 1851.

Mr. Poor is still prevented by illness from attending to his accustomed duties.

Massachusetts.

Ware River Railroad.—We learn from the Hampshire Gazette, that the annual meeting of the Ware River railroad corporation was held at Barre, on the 4th instant. The length of the road surveyed to Barre is 25 miles, and the engineer, Gen. Palmer, estimates the entire cost of this part of the road, including everything save engines, cars, etc., for operating the road at \$375,000, or \$15,000 per mile. The following persons were chosen directors of the corporation for the year ensuing: Hon. Thomas W. Williams, New London; Hon. Artemas Lee, of Templeton; Messrs. Jacob B. Merrick, of Palmer; S. Gilbert, Chas. A. Stevens, Joseph W. Hartwell, and Arthur L. Devens, of Ware, William Mixer of Hardwick, John Smith of Barre, George Williams of Hubbardston, Milton S. Morse of Winchendon.

The meeting was addressed by Messrs. Williams of New London, Hyde of Ware, Caldwell of Barre, Williams of Worcester, Palmer, the engineer and Mixer of Hardwick. On motion of Mr. Hyde of Ware, it was voted, that the directors be requested to make vigorous efforts to obtain subscriptions, so as to enable them to put the 1st section—from Palmer to Ware—and if possible the 2d section—from Ware to Barre—immediately under contract.

North Carolina.

Raleigh and Gaston Railroad.—The South Side Democrat, published at Petersburg, Va., says:

"The fate of the Raleigh and Gaston road is by no means determined. It seems to be the general impression that its re-construction will certainly be accomplished, and that the requisite amount of money has been subscribed. This is not true. Of the \$400,000 to be raised in order to secure to the company the rights and privileges of the amended charter of last winter, but \$300,000 are yet subscribed. It is understood that some ten or twenty thousand dollars worth of stock will be taken by the contractors for the iron for the road; and if this is done, still \$80,000 will remain to be provided, before the re-construction of the road is certain."

The Democrat appeals to the citizens of Petersburg to give the further aid required, as the opportunity of securing the re-construction of the work, if now neglected, may never be again presented.—The citizens of Petersburg have already made liberal contributions to re-build the road, and if they will advance the remaining \$80,000 required, it will give Petersburg a controlling voice in the management of its affairs.

Kentucky.

Louisville and Frankfort Railroad.—James Guthrie has been elected president of the Louisville and Frankfort railroad company, in place of John I. Jacob, resigned.

Steamer Line between Virginia and Europe.

There has been, for several months past, considerable talk about the establishment of a line of steamers to ply between James River and some foreign port. We see by recent Virginia papers, that there is a probability that something will soon be done besides talking on the subject. The merchants of that state have appointed a convention, which was to have been held in Richmond city on the 10th inst., to further the project of a line of steamers from Norfolk to Antwerp. The march of internal improvements, which enables the produce of the interior to reach the seaboard in a more speedy manner, requires corresponding facilities of transportation to foreign markets. According to the Richmond Times the tonnage engaged in the direct foreign trade between Europe and the waters of the James river, is already sufficient to give lucrative employment to two steamers of fifteen hundred tons burden each. Add to this the travel which a steamship line between Norfolk and Europe would secure, and the increase of transportation that it would certainly stimulate into being, and it is evident that the proposed enterprise would be a successful and profitable one.

Virginia.

Seaboard and Roanoke Railroad.—We learn from the Norfolk Herald that this work has been completed in the most substantial and superior manner to its junction with the Petersburg railroad, at Gray's, and is now within two miles of the Roanoke at Weldon Bridge. As the company have all the materials of iron and timber in place, these two miles will be finished in a few weeks.

South Side Railroad.—This work is completed about six and a half miles from its commencing point in this city, and is progressing fairly. We took a ride on it a day or two ago, and were very much pleased with the style of its execution. It will no doubt be one of the most agreeable roads for travellers, when finished, in the United States. The rails and timbers are of the very best description, and laid down very securely. The motion of the cars will be smooth and easy—free from all the roughness and harshness which are experienced on some of the roads of the country, and which are so unpleasant to passengers. The company have just commenced the erection of a spacious depot on their fine lot opposite the market house, which will be a great improvement to that part of the city.—They are also constructing a turning platform, upon a new and superior plan, by which the management of a locomotive upon it will be greatly simplified.—*Petersburg Intelligencer.*

Indiana.

Indianapolis and Peru Railroad.—We learn from the Indianapolis Journal, that the section of this road from Noblesville to Peru, the Northern terminus, has been awarded to contractors, who will shortly be on the ground with their hands and implements. The New York company that have undertaken to complete it have arrived, and are determined to push the work on to completion with all possible speed. It is the calculation to have it completed by the 1st of November, 1852.

Indiana.

Lawrenceburgh and Upper Mississippi Railroad.—At a meeting of the stockholders of this company, held at Greensburg on the 1st inst., the following officers were elected for the ensuing year:—President, George H. Dunn; Secretary, William G. Dunn; Treasurer, Columbus S. Severson; Directors, George H. Dunn, David Nevitt, Walter Hays, of Lawrenceburgh; James B. Foley, Samuel Bryant, James Hamilton, Greensburg; — Marshall, Milford; David Lovett, St. Omer; James M. Ray, Indianapolis.

Ohio.

Central Ohio Railroad.—The board of directors of this company for the ensuing year, as elected by the stockholders at their recent meeting on the 26th ult., are as follows: John H. Sullivan, S. R. Hosmer, James L. Cox, Edward Ball, Wm. Galliher, Daniel Brush, George James, Thomas Maxfield, Levi Claypool, Wilson Shannon, Thomas Blanchard, George B. Wright, Wm. Dennison, Jr.

At a subsequent meeting of the directors, J. H. Sullivan, Esq., was re-elected President, Daniel Brush, Treasurer, and Samuel J. Cox, Secretary.

Thomas Maxfield, Esq., having declined serving on the board of directors, the vacancy will be filled hereafter.

Cincinnati, Hamilton and Dayton Railroad.—This road will soon be ready for the cars. The distance to Dayton is 50 miles, and the fare is fixed at \$1 50. It is supposed that it will be in operation before the close of the present month. The design of the board of directors is to finish the road if possible, before any portion is opened for travel.

Stock and Money Market.

We notice but slight variation in the money market. This commodity still commands very high rates; and, except what is absolutely necessary for ordinary business purposes, can with difficulty be obtained, even upon first class paper. Bonds of new works, if disposed of at present, must be sacrificed. All attempts to negotiate securities under existing circumstances will, we are convinced, prove abortive. The present scarcity of money, together with the uncertainty of the future, prevents any new engagements being entered into. The present nominal quotations of bonds of new roads, are no criterion by which to judge of their market value. We trust, however, that the crisis is at least at hand, it not already past; though, from the lateness of the season, it is doubtful whether much, if any change for the better will take place. A large amount of money is absorbed in the fall business. The shipments of specie have been unusually large the past week.

The Evening Journal gives the annexed statement of the quantity of flour, wheat, corn and barley, left at tide water during the 1st week in September in the years 1850 and 1851, as follows:

	Flour. bbls.	Wheat. bush.	Corn. bush.	Barley. bush.
1850...	90,120	129,771	104,073	43,946
1851...	72,877	74,343	132,523	45,950
Dec....	17,243	55,428	Inc. 28,450	2,004

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 7th Sept., inclusive, during the years 1850 and 1851, is as follows:

	Flour. bbls.	Wheat. bush.	Corn. bush.	Barley. bush.
1850...	1,247,327	841,565	2,592,285	203,676
1851...	1,883,752	1,432,046	5,418,270	177,563
Inc....	636,405	590,481	2,825,985	dec. 26,113

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 7th Sept., inclusive, during the years 1849 and 1851, is as follows:

	Flour. bbls.	Wheat. bush.	Corn. bush.	Barley. bush.
1849....	1,421,339	995,034	3,759,897	111,044
1851....	1,883,732	1,432,046	5,418,270	177,563
Increase.	462,393	437,012	1,658,373	66,519

By reducing the wheat to flour, the quantity of the latter left at tide water this year, compared with the corresponding period of last year, shows an increase of 754,501 bbls. of flour.

Cleveland, Columbus and Cincinnati Railroad.—The receipts of this road from passengers were, for

August.....	\$38,557 26
July.....	35,827 67
Increase.....	2,729 49
Passengers and freight (partly estimated).....	61,000 00
July.....	51,600 00
Increase.....	9,400 00

Columbus and Xenia Railroad.—The receipts of this road from passengers were, for

August.....	\$14,907 06
July.....	14,119 55
Increase.....	787 51

The total receipts in August were, \$21,700.

Rutland and Burlington Railroad.—The earnings of the Rutland and Burlington railroad for the month of August, were as follows:

Passengers and mail.....	\$17,113 47
Freight.....	18,340 00
	35,453 47
Same month last year.....	22,919 97
Gain—about 55 per cent.....	12,533 50

Michigan Central Railroad.—The earnings of the Michigan Central road for August were:

1851.....	\$98,000
1850.....	78,000
Increase—over 25 per cent.....	20,000

The aggregate earnings for the first eight months of the year are.....\$650,000

Same time last year.....468,000

Increase—nearly 40 per cent.....182,000

Little Miami Railroad.—The receipts on the Little Miami railroad from the 25th to 31st August, were.....\$11,821 36

For corresponding week last year.....8,836 74

Increase—30 per cent.....2,984 62

Norwich and Worcester Railroad.—The receipts for the month of August were:

	1851.	1850.
Through travel.....	\$1,811 42	\$1,299 17
Local.....	10,831 04	12,070 17
Freight.....	13,528 65	11,277 18
Mail, etc.....	1,051 46	1,814 16
	27,022 57	26,466 68

Louisville and Frankfort Railroad.—The receipts upon this road for August were as follows:

From passengers.....	\$7,697 05
From freights.....	3,292 64
From mails.....	541 66
	11,531 35

This shows an increase upon July of 11 per cent from passengers, and over 200 per ct. from freight.

Ohio and Pennsylvania Railroad.—The number of passengers conveyed over the finished portion (28 miles) of the Ohio and Pennsylvania railroad last week was 3,107; cash receipts \$1,662. This is the largest amount of passenger traffic we remember to have ever known under similar circumstances, and over a like length of new road.

Rutland and Washington Railroad.—The earnings of the ten finished miles of the Rutland and Washington railroad, from Rutland to Castleton, for July and August show a large increase over previous months. The earnings were \$5,415, which gives about 7 per cent. net on the cost of the road.

The earnings of the Madison and Indianapolis railroad for the week ending Sept. 6th, were \$7,600

Same week, 1850.....4,750

Increase, 60 per cent.....\$2,850

Virginia Central Railroad.—The Virginia Central railroad company shows an increase of the receipts for the six months from the 1st of January, 1851, over the same months of preceding year of \$34,948 41.

Auburn has voted 810 out of 846 to lend its credit for \$300,000 to the Auburn and Binghamton railroad.

The annual tables of the trade and navigation of Canada for 1850, show the total imports to have been \$16,981,068, of which \$6,594,860 were from the United States. The exports amounted to \$10,679,992, of which \$4,951,256 were to the United States.

Annexed is a comparative statement of the net receipts of tolls upon the Ohio canals from Nov. 15 to Aug. 15, in the years 1849-50 and 1850-51:

	1850.	1851.
Ohio canal.....	\$190,307 09	\$250,681 05
Marion and Erie canal..	171,655 07	180,420 37
Muskingum Improve- ment.....	23,285 19	28,610 45
Hocking canal.....	4,282 70	6,878 90
Walhelling canal.....	742 57	1,521 73
	\$399,272 62	\$468,112 50
		399,272 62

Amount of increase in 1851.....\$68,839 88

Railway Share & Stock List;

CORRECTED WEEKLY FOR THE

AMERICAN RAILROAD JOURNAL.

NEW YORK SEPTEMBER 13, 1851.

GOVERNMENT AND STATE SECURITIES.

U. S. 5's, 1853.....	100½
U. S. 6's, 1856.....	105½
U. S. 6's, 1862.....	110
U. S. 6's, 1862—coupon.....	113a114
U. S. 6's, 1867.....	115½
U. S. 6's, 1868.....	116
U. S. 6's, 1868—coupon.....	123½
Land Warrants.....	140a145
Arkansas 6's.....	52a53
Alabama 5's.....	91a92
Indiana 5's.....	79
Illinois 6's, 1870.....	65a68
Kentucky 6's, 1871.....	105a106
Massachusetts sterling 5's.....	105a106
Massachusetts 5's, 1859.....	100½
Maine 6's, 1855.....	103
Maryland 6's.....	102½
Michigan.....	—
Mississippi.....	—
New York 6's, 1865.....	117a118
Ohio 6's, 1860.....	110
Pennsylvania 5's.....	91

RAILROAD BONDS.

Atlantic and St. Lawrence, 6 per cent.....	85
Baltimore and Ohio, 1867.....	94½
Boston and Providence 6's, 1855.....	101
Boston and Worcester 6's, 1855, convertible.....	107½
Bost., Concord and Mont. 6's, 1860, mortgage.....	87½
Cheshire 6's, 1860.....	91½
Connecticut River 6's, convertible.....	98
Erie 7's, 1859.....	101
Erie 7's, 1863.....	107½
Erie income 7's.....	91
Hudson River 7's, 1853.....	101½
Michigan Central, convertible, 8's, 1856.....	104½
New York and New Haven.....	100½
Norwich and Worcester, mortgage, 1860.....	80a85
Old Colony, 1854.....	97½
Ogdensburg 7's, 1859.....	91½
Portsmouth and Concord.....	80a85
Passumpsic 6's, 1859.....	94½
Rutland 7's, 1863.....	97
Reading mortgage, 1860.....	80
" " 1870.....	75
Sullivan, mortgage 6's, 1855.....	75
Vermont Central 6's, 1852.....	96½
" " 6's, 1856.....	88
Vermont and Massachusetts 6's, 1855.....	86½

RAILROAD STOCKS.

[CORRECTED FOR WEDNESDAY OF EACH WEEK.]

	Sept. 3.	Sept. 10.
Albany and Schenectady.....	96½	—
Atlantic and St. Lawrence.....	60a65	—
Androscoggin and Kennebec.....	30a35	—
Boston and Maine.....	102	104½
Boston and Lowell.....	109	109
Boston and Worcester.....	101	100½
Boston and Providence.....	84½	87
Bost., Concord and Montreal.....	40	—
Baltimore and Ohio.....	71½	—
Baltimore and Susquehanna.....	36	—
Cheshire.....	53	—
Cleveland and Columbus.....	—	—
Columbus and Xenia.....	—	—
Camden and Amboy.....	—	—
Connecticut River.....	60	—
Delaware and Hudson (canal).....	—	—
Eastern.....	95	96
Erie.....	77½	78
Fall River.....	92½	92½
Fitchburgh.....	108½	108½
Georgia.....	—	—
Georgia Central.....	—	—
Harlem.....	69	68½
Hartford and New Haven.....	124	—
Housatonic (preferred).....	52	—
Hudson River.....	72	71½
Kennebec and Portland.....	50a55	—
Little Miami.....	—	—
Long Island.....	15	14½
Mad River.....	—	—
Madison and Indianapolis.....	96	—
Michigan Central.....	104½	104
Montgomery and West Point.....	—	—
Michigan Southern.....	—	—
Manchester and Lawrence.....	97	89
Morris (canal).....	14½	15½
New York and New Haven.....	107	106½
New Jersey.....	133	—
Northern.....	66	66½
Nashua and Lowell.....	107½	—
New Bedford and Taunton.....	111	—
Norwich and Worcester.....	51½	49½
Norfolk County.....	20	—
Ogdensburg.....	34	33½
Old Colony.....	66	66
Passumpsic.....	80	—
Pennsylvania.....	—	—
Pittsfield and North Adams.....	95	—
Philadelphia, Wilm'gton & Balt.....	28	29
Petersburg.....	—	—
Richmond and Fredericksburg.....	—	—
Richmond and Petersburg.....	—	—
Reading.....	—	55½
Rochester and Syracuse.....	107	106½
Rutland.....	53	45½
Stonington.....	43½	42½
South Carolina.....	—	—
Syracuse and Utica.....	123	—
Sullivan.....	25	—
Taunton Branch.....	108	—
Troy and Greenbush.....	90	—
Tonawanda.....	—	—
Utica and Schenectady.....	130	—
Vermont and Canada.....	103	99½
Vermont Central.....	34	35½
Vermont and Massachusetts.....	25½	27
Virginia Central.....	—	—
Western.....	102½	102½
Wilmington and Raleigh.....	—	28½
York and Cumberland (Pa.).....	20	—

Pennsylvania.

Bridge across the Conemaugh.—The Johnstown [Pa.] Mountain Echo says.—The Iron Bridge upon which the Pennsylvania railroad crosses the Conemaugh river at this place, is a structure well worthy of notice. The bridge is 330 feet in length, with five spans of 76 feet each, and two truss frames in each span of 7 1-2 feet high. Each span is divided into 18 panels, 16 of which are four feet and the other two four and a half feet long, leaving at each end panels of one and a half feet. Each panel has one main brace of one and a quarter, and two counter braces of one and a half round iron, well secured at the top and bottom to angle blocks by

large nuts. The upper cord or cast piece is made of cast iron, in lengths of twelve feet, the area, a section of the chord, being fifteen and a half inches. The lower chord is made of four bars of wrought iron, each three quarters—six and a half inches lying edgewise one and a half inches apart. The arches are of cast iron, and are secured to the posts in each truss-frame by strong bolts. The arches weigh fifteen tons. Its capacity for sustaining immense weight may be judged from the fact that a locomotive weighing twenty-five tons, standing on the centre of a span, caused it to yield only 15-1000 of a foot. This bridge has been pronounced by competent judges to be the most beautiful structure in the world.

For the American Railroad Journal.

**Cincinnati and Seaboard Railways.—No. III.
H. V. Poor, Esq.**

Sir,—Of the nine railway routes, or modifications of routes, now directed upon the city of Cincinnati, from the seaboard, and through that city to St. Louis, by the Ohio and Mississippi railway, (325 miles in length) all will gain the Ohio river, with a gauge of 4 feet 8½ inches width from iron to iron.

The New York and Lake Railways, though ultimately reaching Cincinnati, do not, as has before been explained, come within the scope of these articles.

Arrived at the line of the Ohio River, all the rival routes herein referred to, (excepting one) have such interior connexions, or legal obligations, as will require their gauges to be changed to the Ohio state gauge of 4 feet 10 inches; that one is the Baltimore and Ohio railroad, which may soon run on through Cincinnati to St. Louis, by properly availing of the aid of other companies, *with an unbroken gauge*.

Arrived at Cincinnati, the further progress westward of the business of all these Eastern lines must be by a movement upon the state gauge of Indiana, 4 feet 8½ inches, the same upon which they left the sea-coast; and this necessarily produces two breaks of gauge, between the Mississippi and the sea.

The gauge of Ohio then, by the gauge of her general laws, 4 feet 10 inches, and its adoption by all but one of her railway corporations, presents a barrier to the extension of the Eastern railway system, over her territory, and imposes the necessity of two portages or breaks of gauge, upon all through lines from East to West, with the single exception to which we have referred.

During the long pending examination of this subject, before the gauge commission of the British parliament, it seems to have been admitted, that every break of gauge, was at least equivalent to a ferry interposed in the line.

But this typical view of the question had reference principally to a passenger business, or to the transportation of troops, and munitions of war.

Upon a heavy freight business the practical effect of a break of gauge, is less easily estimated, and not yet known in this country by experience, in uniting great railways of adverse gauges, and prolonging through them a large freight business, such as Western and Seaboard railways in the United States have reason to expect.

When it is recollected that the breaks of gauge usually occur where the goods, *in transitu*, will pass from the custody of one corporation to another, the difficulty will evidently be augmented; as that fact will render necessary a double registration of the articles, when unpacked from the cars of the one, and repacked in the cars of the other, in order

to fix definitely the responsibility of loss, or breakage, upon the proper parties.

This breaking bulk, this handling, this inspection, this double registration by a clerical force of both companies, and the final repacking in the cars of the receiving company, cannot reasonably be expected to consume less time on the average, than one day, between the arrival and departure of the freight trains on either side of the break of gauge.

This simple hypothesis will give us a practical estimate of the effects of a break of gauge, upon the goods business of a railway, and of its measure in equivalent distance—which we cannot be far wrong in estimating at *one days' run of the freight train, lost by every break of gauge*.

The cost of unpacking and repacking, at each break of gauge, will also be considerable, probably, at least, a half dollar per ton; but it is not our intention at present to enter upon that branch of the subject.

Twenty-four hours' run of a modern freight train upon a railroad, cannot fairly be estimated at less than *three hundred miles*. And this, then, is the measure, in equivalent distance, of the effect of a single break of gauge, upon the freight business of a railroad line.

The loss of time caused to the passenger business by a break of gauge—involving shifting cars, changing baggage, &c.,—may be estimated at about half an hour lost, or, in equivalent distance, say, *fifteen miles*.

The Baltimore and Ohio railroad company, by availing themselves of the independent charter existing in Southern Ohio, have the ability to obtain an unbroken gauge, through Parkersburgh and Belpre, directly into the city of Cincinnati, and thence through the Ohio and Mississippi railroad, (of 4 feet 8½ inches gauge) westward to the banks of the Mississippi river, opposite the city of St. Louis.

The gauge of 4 feet 8½ inches, capable of being thus brought out to the west *continuously and unbroken* from the Seaboard, through Baltimore, and connecting at that city with the numerous sea-coast railroads, running north and south by the same gauge,—from Maine to Carolina—would give to that great artery of business, an importance it would not otherwise possess—an importance far transcending the pretensions of any of the rival lines from the seaboard to the western country.

Now, supposing the Baltimore railroad line to be prolonged through Cincinnati to St. Louis, *with an unbroken gauge*, it would have an advantage over the competitor lines—all of which require at least two breaks of gauge,—and this advantage, in equivalent distance, may be estimated at *thirty miles in the passenger business, and six hundred miles in the carriage of freight*.

This line, at the highest estimate of its length, even when measured from the point of Philadelphia to Cincinnati, being but a few miles longer than its shortest rival—and as all those rivals must encounter two breaks of gauge—the immense superiority that an unbroken gauge would give it, over all the other Cincinnati and Seaboard railways, must, we think, be evident to all disinterested men.

From the port of Baltimore many articles of west-

* The existence of this charter has lately been denied by a partizan of the Hemphill line,—but nevertheless, it may be found on the statute book of Ohio,—it will be availed of by the proper parties, at the proper time, and will be found quite sufficient for its object.

ern produce can be shipped, both foreign and coast-wise, and many of western consumption can come by the sea, with as much advantage as any city on the Atlantic coast can offer.

Add to this the physical fact, that the far reaching inland sweep of the waters of Chesapeake Bay, brings the Atlantic tide at Baltimore, nearly one hundred miles nearer the centre of western commerce than at any other seaboard port, and the commanding position of that city, and the leading importance of her railway west, must be evident to a demonstration.

Consequently, amongst all the Cincinnati and Seaboard railroads discussed in these brief articles, it seems to the writer, (who has no special interest in any) that the Baltimore and Ohio Railroad, if extended to Cincinnati and to St. Louis, without breaking its gauge, will far surpass its rivals in the business it will do, and in the benefits it will confer upon our common country.

DIAGONAL.

Ohio.

Central Ohio Railroad Company.—We have received the third annual report of the president and directors of this company, from which we gather the following facts:—In May, 1850, twenty-four sections of the route from Zanesville to Newark, were let to contractors, and in the November following, the remainder of the line to Columbus was also placed under contract. The work has made good progress since that period. Section 13, with an embankment of about 60,000 cubic yards, is now being finished up for final estimate. Section 17, embracing the heavy cut through the "Black Hand Rock," as it is called, was commenced on the 4th of July, 1850, and in just twelve months from that day the cut was carried through the rock. This work is probably the most imposing in Ohio, being a cut of about 700 feet in length and 64 in depth at the deepest place, of solid rock. This section cost about \$3000 less than was estimated at the letting, and under an improved line. Several sections west of Newark are of a very heavy character; one embracing an embankment of 246 000 cubic yards.—There is probably no other section in Ohio of half the amount of work of this.

With the exception of the bridge across the North Fork of Licking, the whole road between Zanesville and Newark, with ballasting on, will, within a few days, be ready for the rail. If the iron be received in due season, the chief engineer confidently hopes to have it laid, and the road in operation between Zanesville and Newark in the month of October next. And with the exception of two sections, the remainder of the line to Columbus is in a state of forwardness that is very satisfactory—some 18 miles being already complete; and the whole is expected to be ready for operation on or about the first day of April next.

A portion of the rail purchased in England has arrived in this country, and is on its way from New York to Zanesville.

In December last, the president was instructed to issue \$450,000 of the mortgage bonds of the company and with the avails of their sale procure the rails and equipment necessary for the western division of the road. He succeeded in disposing of them on terms very satisfactory to the board.

These bonds were issued on the first of February last; have 10 years to run from that date, interest payable semi-annually in New York. The mortgage covers only the portion of the road between Zanesville and Columbus.

The president also sold to the same parties who purchased the company bonds, \$180,000 of bonds issued to the company by the counties of Muskingum and Licking, and the city of Zanesville. These brought 92 per cent., a higher rate than has been obtained for similar securities, in large amounts, up to that time or since.

Under instructions of the board, surveys were commenced upon the various routes between Zanesville and Wheeling that had been indicated as available. The surveys were interrupted by the refusal of Belmont county to make the subscription of \$100,000 called for. The complexion of the question in that county has been materially changed since then; and with a persuasion that he would do her share of the work, an order has been given for the recommencing the survey. The three parties ordered will be placed in the field immediately.

The amount of the stock promised in Franklin county, although not all formally subscribed, is provided in part by reliable individual subscriptions to the extent of near forty thousand dollars, with a formal obligation upon the part of the Columbus and Xenia railroad company, to subscribe the balance of the \$100,000 asked of that county. This obligation of the Columbus and Xenia railroad company is to be available before the completion of the road to Columbus. It is accompanied with a counter obligation on the part of the Central company to take an equal amount of stock in their road, to be made available before the completion of the extension to Dayton.

The following is the present condition of the affairs of the company:—

Whole amount of stock subscribed.....	\$508,600 00
Whole amount of stock paid in.....	306,643 70
	\$201,956 30
Amount paid for construction including cross ties.....	\$192,531 62
Engineering expenses locating western division, including instruments.....	11,141 10
Engineering, eastern division.....	3,680 84
Right of way.....	6,731 78
Machinery.....	10,986 72
Depot and machine shop grounds.....	3,050 35
Machine shop buildings.....	950 18
Wood.....	221 86
Salaries.....	4,324 19
Contingencies.....	1,469 70
Office furniture.....	188 08
	\$235,296 40
Apparent balance of cash on hand.....	71,347 30
	\$306,643 70

The reason for stating the apparent balance is that the nature of the understanding with the counties and towns subscribing, is of rather a complex character, and the true balance can not be struck until the settlement of the bond account with those parties; and this can not well be done until the whole of the proceeds of the bonds are drawn for, and the question of interest, discount and exchange adjusted.

Wisconsin.

Milwaukee and Mississippi Railroad.—Twenty miles of the Milwaukee and Mississippi railroad, west from Milwaukee, have been completed, and are now in operation, and in three months time about eighteen miles more will be finished. The length of this road will be about 200 miles, and the cost, with a heavy T rail, so far as constructed, is only about \$12,000 per mile. The authorised capital of the company is \$3,000,000, of which nearly \$1,000,000 has been subscribed by the people of Wisconsin.

Hillsborough, Sept. 2nd, 1851.

Dear Sir,—In your paper of August 23d, an article signed "Philadelphia," on the Hempfield and Marietta connection with Cincinnati, versus the Baltimore and Parkersburgh railroad connection with the same, attracted not only my attention but my admiration. "Philadelphia," no doubt, is an educated book engineer, of the first class, as he deals largely in the sophisms of the profession, and to some extent enlarges the facts, when necessary to sustain his position of the latter. I shall only notice one of his extravagant assertions, based no doubt "on the information of some unscrupulous friend of his favorite route." He asserts there is no such charter for a direct road from Parkersburgh to Cincinnati, as Baltimore alludes to—that the Hillsborough charter precludes the company from such a route, and under the new constitution of Ohio no charters will be granted. I am happy to inform Mr. "Philadelphia," that we have all we want as to charter, and that a road will be built under our charter, direct from Parkersburgh to Cincinnati, on a route from ten to fifteen miles shorter than any route heretofore projected, and to satisfy the fastidious on this subject of charter, I request you to publish the following.

Yours, &c.,

PARKERSBURGH.

AN ACT

To amend an act entitled "an act to incorporate the Hillsborough and Cincinnati railroad company."

Sec. 1. Be it enacted by the General Assembly of the State of Ohio, That the Hillsborough and Cincinnati railroad company shall have the power, and is hereby authorized to extend its road to the city of Marietta, and from thence to any point above the mouth of the Muskingum on the Ohio river, and to cross the same, to cross or join any other railroad, to construct a branch to Greenfield, Frankfurt and Circleville, or either of them, and any other branch or branches deemed necessary by the company—in all which cases the said company to enjoy all the privileges and be limited by the restrictions contained in the original charter.

Sec. 2. That the capital stock of the Hillsborough and Cincinnati railroad company be, and the same is hereby increased to five millions of dollars.

Sec. 3. So much of the act to which this is an amendment as conflicts with the act be, and the same is hereby repealed.

JOHN F. MORSE,
Speaker of the House of Representatives.
CHARLES C. CONVERS,
Speaker of the Senate.

March 12, 1851.

Secretary of State's office,
Columbus, March 13, 1851.

I hereby certify the foregoing to be a correct copy of the original roll on file in this office.

HENRY W. KING,
Secretary of State.

Railroad Subscriptions.

Jackson township, in Muskingum county, Ohio, on the 29th ult., decided to take stock in the Steubenville and Indiana railroad company, to the amount of \$20,000.

Somerset township, in Perry county, Ohio, has subscribed \$23,000 to the Cincinnati, Circleville and Zanesville railroad.

Athens county, Ohio, has voted a second \$100,000 to the capital stock of the Marietta and Cincinnati railroad. The citizens of Chillicothe have also voted, by a large majority, an additional subscription of \$50,000 to the same road.

The city of Cincinnati has appropriated \$600,000 to the Ohio and Mississippi railroad company, and \$100,000 to the Covington and Lexington railroad.

Gauge of Railroads.

We are permitted to publish the following letter from the acting manager of one of the most extensive locomotive machine-shops in the country.

The discussion of the proper gauge for a railroad, although of no practical application in the Eastern States, is important to the extreme Western States, many of which are by their position, entirely disconnected from other railroads:—

PATTERSON, NEW JERSEY,
August 6th, 1851.

H. C. SEYMOUR, Esq., Chief Engineer of the State of New York, Albany. N.Y.

Dear Sir,—Your favor of the 4th inst. is received and contents noticed respecting different gauges, &c.

I was at one time, some years ago, of opinion that a narrower gauge than five and a half feet (5½ ft.) was preferable: at that time engines were much smaller, and run at a much less speed than at the present time. On account of the increased size of engines for freight, and the increased speed and size of passenger engines, we find great difficulty in putting in a boiler sufficiently large to generate steam to supply cylinders of a sufficient size to run the speed that is required, and take the load required.

There is another serious objection to a four feet eight and a half inch (4 ft. 8½ inch) gauge; and that is, to arrange the different parts of the engine properly without raising the boiler much higher from the track than is desirable.

I have found in many cases, when we have built large engines for a narrow gauge, we have been compelled to make the boiler and flues very long; and on account of the great length of the flues, the expansion and contraction of the flues has been so great that it has been impossible to keep them tight, which is a very serious objection.

I have built engines for roads from four feet eight and a half inches (4 ft. 8½ inches) gauge to seven feet [7 feet] gauge, and I am satisfied that a six feet [6 ft.] track is preferable to a four feet eight and a half inch [4 ft. 8½ inch], or a five feet track. I consider a five and a half feet [5½ ft.] gauge preferable to a six feet (6 ft.) gauge.

A five and a half feet [5½ ft.] gauge is sufficiently wide to put in a boiler of proper dimensions, and also to arrange all the different parts of an engine as heavy as is desirable.

We have engines in our shop at the present time building for six feet (6 ft.), four feet eight and a half inches (4 ft. 8½ in.), and five feet four inches (5 ft. 4 in.) gauge; and I think the five feet four inches (5 ft. 4 in.) gauge is preferable to either of the other gauges, and I think two inches more, making it five and a half feet (5½ ft.), would be no objection. I am decidedly in favor of a wider gauge than four feet eight and a half inches (4 ft. 8½ in.)

There is another serious objection to a narrow gauge, the being compelled to raise the engine so high from the track, that in going round a curve it causes the engine to roll much more than it would if it was a wider gauge; in consequences of which it throws more weight on the outer rail which increases the friction and wear and tear of the engine and road, more than the wide gauge, and causes a loss of power at the time when the greatest power is required to take the engine and train around the curves. I think you would be able to take a much heavier train over a road of five and a half feet [5½ ft.] gauge, than you would over one of four feet eight and a half inches [4 ft. 8½ in.]

I also think that it would cost less to keep the track with the wide gauge in repair than it would the narrow one, on account of the weight of the engine and cars being more equally divided on the rails.

Very Respectfully, yours, &c.,

Pennsylvania.

Catanissa, Williamsport and Erie Railroad.—We learn from the Miner's Journal that the work on this road is rapidly progressing, under the supervision of Richard Osborne, Esq., Chief Engineer. The grading, in all probability, will be so far completed this fall as to enable them to put down a portion of the track, and undoubtedly the whole road will be completed in a year from the present time.

Maine.

Buckfield Branch Railroad.—At the annual meeting of the stockholders of the Buckfield Branch railroad, holden on the 30th ult., the following gentlemen were chosen directors:—Virgil D. Parris, Cyrus Thompson, Noah Prince, Ira Gardner, Washington Long, Albert D. White, Aaron Parsons, Moses Marshall and Calvin Bridgman. At a subsequent meeting of the directors, Virgil D. Parris was unanimously elected president.

Iowa.

Dubuque and Keokuk Railroad.—Mr. Eaton, the present Engineer-in-chief of the Dubuque and Keokuk railroad North, organized a surveying party on the 2d inst., and proceeded to locate the route from Dubuque westward, to the point where the first location was made permanently, by resolution of the board of directors. It is the intention of the directors, to put a portion of the work under contract this fall, and to push the construction of the road onward towards Cedar Rapids, with energy and spirit.

Illinois.

Peoria and Mississippi Railroad.—Upon a careful survey by the engineer of the old road from Peoria to Farmington, which was purchased by this company from the state of Illinois, it has been discovered that a portion west of the Kickapoo, for a distance of nearly three miles, had an ascending grade of one hundred feet to the mile. This unexpected result renders the use of that road extremely doubtful. The board of directors held a meeting at Peoria recently, and adjourned to meet at Knoxville on the 3d of October. In the mean time the survey will be vigorously prosecuted at Knoxville, and the route from Knoxville to Burlington will be carefully examined by the engineer, so that he will be able to lay before the board, at its next meeting, a full report of the probable cost of the entire road. The board, in the expectation that the friends of the road will meet the emergency, have advertised for proposals for the bridges and grading of the eastern division of the road.

Railroad Route.—From a source entirely reliable, we learn that the board of directors of the Central railroad company, at their meeting in New York, on Thursday of last week, decided that the Northern route, by the way of Scale's Mound, should be adopted in the approach of this great work to Galena!

We are now able to congratulate the citizens of Galena on the prospective realization of the hopes they have so long entertained. The prosperity of the city is now secured! No change or combination of circumstances (the railroad being built) can prevent its growth. Galena will, in five years, number 15,000 people. We hazard the conjecture, not under the influence of the momentary excitement produced by this intelligence, but as the result of a long entertained and deliberate conviction!

In the location of the Eastern branch, the directors have decided to run along the Eastern line of the state, to make a junction with the Michigan Southern road, as near as possible to the Western boundary of Indiana. Within the next ensuing nine months, one hundred miles of the upper part of the Eastern branch, will be constructed. That branch leaves the main trunk, at or near Vandalia. —*Galena Jeffersonian.*

Steam Boilers, and the Causes of their Explosions.

The following is an abstract of a lecture delivered in Leeds, England, by W. Fairbairn, Esq., C.E., F.R.S., on the causes of the explosion of steam boilers, and the remedies applicable for the prevention of these accidents. He endeavors to show not only what are the probable causes of explosion, but also what are not the causes. So many theories, some of them exceedingly problematical, have been brought forward on the occasion of disastrous explosions, that it requires the utmost care and attention to circumstances to arrive at the real origin of the evil. To acquire satisfactory evidence as to the precise condition of the boiler and furnaces before an explosion is next to impossible, as most frequently the parties in charge, and to whose mismanagement and neglect may in many instances be ascribed the origin of the occurrence, are the first to become the victims of their own indiscretion; and we can only judge from the havoc and devastation that ensues, as to the immediate cause of the event.

In the consideration of this subject, Mr. Fairbairn mentions—

1st. *Boiler explosions arising from accumulated internal pressure.*—In nine cases out of ten a continuous increasing pressure of steam without the means of escape is probably the immediate cause of explosion; in some instances it arises from deficiency of water, but accidents of this kind are comparatively few in number, as we often find in tracing the causes, that they have their origin in undue pressure, emanating from progressive accumulation of steam of great force and intensity.—Let us take an example—to some of which I am able to refer—and we shall find that a boiler under the influence of a furnace in active combustion (as the recipient of heat) will generate an immense quantity of steam, and unless this is carried off by the safety valve or the usual channels when generated, the greatest danger may be apprehended by the continuous increase of pressure that is taking place within the boiler. Suppose that from some cause, the steam thus accumulated does not escape with the same rapidity with which it is generated, that the safety valves are either inadequate to the full discharge of the surplus steam, or that they are entirely inoperative, which is sometimes the case, and we have at once the clue to the injurious consequences which, as a matter of fact, are sure to follow. The event may be procrastinated, and repeated trials of the antagonist forces from within, and the resistance of the plates from without, may occur without any apparent danger, but these experiments often repeated will at length injure the resisting powers of the material, and the ultimatum will be the arrival of the fatal moment when the balance of the two forces is destroyed and explosion ensues. How very often do we find this to be the true cause of accidents arising from extreme internal pressure, and how very easily the accidents might be avoided by the attachment of proper safety valves to allow the steam to escape and relieve the boiler of those severe trials which ultimately lead to destruction. If a boiler, whose generative power be equal to 100, be worked at a pressure of 10 lbs. on the square inch, the area of the safety valves should also be equal to 100, in order to prevent a continuous increase of pressure; or in case of the adhesion of any of the valves, it is desirable that their areas should, collectively, be equal to 100. If two or more valves are used, 100 or 120 would then be the measure of outlet. Under these precautions, and a boiler so constructed, the risk of accident is greatly diminished; and provided one

of the valves is kept in working order, beyond the reach of interference by the engineer, or any other person, we may venture to assume that the means of escape are at hand, irrespective of the temporary stoppage of the usual channels for carrying off the steam. So many accidents have occurred from this cause—the defective state of the safety valves—that I must request the attention while I enumerate a few of the most prominent cases that have come before me. In the year 1845, a tremendous explosion took place at a cotton mill in Bolton. The boilers, three in number, were situated under the mill, and from unequal capacity in the safety valves, and even those imperfect, as they were probably fast, a terrific explosion of the weakest boiler took place, which tore up the plates along the bottom, and the steam having no outlet at the top, not only burst out the end next the furnace, demolishing the building in that direction, but tearing up the top on the opposite side, the boiler was projected upwards in an oblique direction, carrying the floors, walls, and every other obstruction before it; ultimately it lodged itself across the railway at some distance from the building. Looking at the disastrous consequences of this accident, and the number of persons—from 16 to 18—who lost their lives on the occasion, it became a subject of deep interest to the community that a close investigation should immediately be instituted, and a recommendation followed that every precaution should be used in the construction as well as the management of boilers.

The next fatal occurrence on record in that district was a boiler at Ashton-under-Lyne, which exploded under similar circumstances, namely, from excessive interior pressure, when four or five lives were lost; and again at Hyde, where a similar accident occurred from the same cause, which was afterwards traced to the insane act of the stoker or engineer, who prevented all means for the steam to escape down the safety valve.

There was a boiler exploded at Malaga, in Spain, some years since, and my reason for noticing it in this place is to show that explosions may be apprehended from other causes than those enumerated in the divisions of this inquiry, and that is *incrustation*. Dr. Ritterbrandt says—in a paper read before the Institution of Civil Engineers, by an eminent chemist, Mr. West—"that a sudden evolution of steam under circumstances of incrustation is no uncommon occurrence;" in several instances I have known this to be the case, particularly in marine boilers, where the incrustation from salt water becomes a serious grievance, either as regards the duration of the boiler, or the economy of fuel.

If it were supposed, as Dr. Ritterbrandt observes, that the boiler was incrustated to the extent of half an inch, it would at once be seen that nothing was more easy than to heat the boiler strongly, even to red heat, without the immediate contact of water. Under these circumstances, the hardened deposits being firmly attached to the plates, and forming an imperfect conductor of heat, would greatly increase the temperature of the iron, and the great difference of temperature thus induced between the material—and the greater expansibility of the iron—would cause the incrustation to separate from the plates, and the water rushing in between them would generate a considerable charge of highly elastic steam, and thus endanger the security of the boiler.

These phenomena were singularly exemplified in the Malaga explosion, which is thus described by Mr. Hick—"I have ascertained that a very thick incrustation of salt was found on the lower part of the boiler, immediately over the fire, and so far as it extended the plates appear to have been red hot, thereby much weakened, and hence the explosion. The ordinary working pressure of the boiler is 130 lbs. per square inch, and perhaps at the time of the explosion very much above that pressure, as there was only one small safety valve of two and a half inches diameter. The boiler was only two feet six inches diameter, and twenty feet long."

Incrustation, exclusive of being dangerous, is attended with great expense and injury to the boiler by its removal. In the case of the Transatlantic, Oriental, or other long sea-going vessels—even after the use of brine pumps, blowing out, etc.—a very large amount of incrustation is formed, and considerable sums of money are expended each voyage to remove it.

Other expositions of a more recent date are those which occurred at Bradford and Halifax. They are still fresh in the recollection of the public mind, and are so well known as not to require notice in this place.

I cannot, however, leave this part of the subject, without reverting to an accident which occurred on the Lancashire and Yorkshire railway, which had its origin in the same cause—excessive internal pressure. This accident is the more peculiar as it led to a long mathematical disquisition as to the nature of the forces which produced results at once curious and interesting. The conclusions which I arrived at, although *practically right*, were, however, considered by some *mathematically wrong*, as they were firmly combated by several eminent mathematicians; and notwithstanding the number of algebraic formulas, and the learned discussions of my friends on that occasion, I have been unable to change the opinion I then formed of others more conclusive.

The accident here alluded to, occurred to the Irk locomotive engine, which in February, 1845, blew up and killed the driver, stoker, and another person who was standing near the spot at the time. A great difference of opinion as to the cause of this accident was prevalent in the minds of those who witnessed the explosion, some attributing it to a crack in the copper fire-box, and others to the weakness of the stays over the top—neither of these opinions were, however, correct, as it was afterwards demonstrated that the material was not only entirely free from cracks and flaws, but the stays were proved sufficient to resist a pressure of 150 to 200 lbs. on the square inch. The true cause was afterwards ascertained to arise from the fastening down of the safety valve of the engine (an active fire being in operation under the boiler at the time) which was under the shed, with the steam up, ready to start with the early morning train.

The effect of this was the forcing down of the top of the copper fire-box upon the blazing embers of the furnace, which, acting upon the principle of the rocket, elevated the boiler and engine of 20 tons weight to the height of 30 feet, which, in its ascent, made a summerset in the air, passed through the roof of the shed, and ultimately landed at a distance of sixty yards from its original position. The question which excited most interest, was the absolute force required to fracture the fire box, its peculiar properties, when once liberated, and the elastic or continuous powers in operation, which forced the engine from its place to an elevation of 30 feet from the position on which it stood. An elaborate mathematical discussion ensued relative to the nature of these forces, which ended in the opinion that a pressure sufficient to rupture the fire box, was by its continuous action sufficient to elevate the boiler and produce the results which followed. Another reason was assigned, namely, that an accumulated force of elastic vapor, at a high temperature, with no outlet through the valves, having suddenly burst upon the glowing embers of the furnace, would charge the products of combustion with their equivalent of oxygen, and hence explosion followed. Whether one or both of these two causes were in operation, is probably difficult to determine; at all events we have in many instances precisely the same results produced from similar causes, and unless greater precaution is used in the prevention of excessive pressure, we may naturally expect a repetition of the same fatal results.

The preventives against accidents of this kind are well constructed boilers of the strongest form, and duly proportioned safety valves—one under the immediate control of the engineer, and the other, as a reserve, under the keeping of some competent authority.

To be continued

To Engineers.

A NEW WORK on the Marine Boilers of the United States, prepared from authentic drawings, and illustrated by 70 engravings, among which are those of the fastest and best steamers in the country, has just been published by B. H. Bartol, Engineer, and is for sale at the store of

D. APPLETON & CO.,
Broadway.

September 1, 1851.

To Contractors.

A DIVISION of about 30 miles of the grading, together with the mechanical works of the South Side Railroad, commencing near Farmville, and extending westward, will be let on the 15th of October next, at Farmville.

C. O. SANFORD, Chief Engineer.
Petersburg, September 4th, 1851.



Blake's Patent FIRE-PROOF PAINT.

This paint, in a few months after applied, turns to slate or stone, forming a complete enamel or coat of mail over whatever applied, protecting it from the action of fire, water or weather. It has now been tried over seven years, and where first applied is now like a stone.

LOOK OUT FOR FORGED BRANDS AND WORTHLESS COUNTERFEITS, as this paint has gained such universal credit throughout the country, that many persons have been getting up all kinds of worthless counterfeit stuff, and pushing it into the market upon the credit of the genuine, but most of it has proved itself so entirely worthless, that it is impossible to sell. Some of them have commenced forging my brands, and putting it upon the barrels—the forgery can be detected from the fact that on the genuine the words "Blake's Patent Fire Proof" are put on in a circular form, but on the spurious it is straight. I have now three suits in the United States Court against those who have been infringing my patent by selling "fire proof paint" not of my manufacture. I would, therefore, caution all to be very particular, and see that they get the genuine article, which can at all times be had of the Patentee, at 84 Pearl street, New York.

WM BLAKE.

September 12th.

Wanted,

BY the Montreal Mining Company, a Manager for their Establishment at the Bruce Mines, Lake Huron.

Applications stating terms, and enclosing certificates of character and ability, will be received by the undersigned until the 1st October next.

By order,
H. D. COCKBURN, Secretary.
Montreal, August 27, 1851.

To Contractors.

THE SUNBURY AND ERIE RAILROAD COMPANY invite proposals for grading and bridging the line of the road, for a double track, from the City of Erie to Williamsport, in Lycoming county, in a substantial and workmanlike manner, complete in every respect for the superstructure.

Proposals should be addressed to D. L. MILLER, Jr., President, Philadelphia, on or before the 20th of Ninth month (September) 1851. Contractors will state what proportion of the Stock of the Company, if any, they will take at par in payment.

It is believed that the superiority of the harbor of Erie, the favorable position of the route, and the shortness of the distance secured by this, compared with any other railroad from the Lakes to the seaboard, will render this road as profitable, and its stock as good an investment, as that of any ever constructed in the United States.

A copy of EDWARD MILLER's Second Report will be forwarded to those to whom this Circular may be addressed.

A MASS CONVENTION of the friends of this great project will be held in the City of Philadelphia on the 25th of Ninth month (September), at which all interested are invited to attend.

3136

To Contractors.

Cincinnati and St. Louis Railroad.

SEALED proposals will be received at the Office of the Company till Wednesday, the 1st day of October next, for grubbing, grading and bridging forty-five miles of the Ohio and Mississippi railroad, from Mill Creek, in Cincinnati, to a point twenty miles west of the city of Aurora, Ind.

Plans, specifications, &c., may be examined by Contractors, at the Office of the Company, in Cincinnati, from the 20th of September, to the day of letting.

By order of the Board,
ABNER T. ELLIS, Pres't.
Cincinnati, August 16th, 1851.

To Chief Engineers, Directors of Railroads, Canals, etc.

A Civil Engineer and Surveyor, who has been professionally engaged under the British Government, East India Company, etc., is desirous of obtaining employment as an Assistant. No objection to the South or West. Address for one month to C. E. & S., American Railroad Journal office. August 16, 1851.

Railroad Iron.

THE Undersigned offer for sale 2,000 tons of Railroad Iron, to arrive at New York in the month of September next. It is of a most approved pattern and quality, and weighs about fifty-five pounds to the yard.

CHOUTEAU, MERLE & SANDFORD.
No. 51, New Street.

New York, August 9.

TO CONTRACTORS.

Belpre and Cincinnati Railroad.

Engineer's Office,
Chillicothe, July 30, 1841.

SEALED PROPOSALS will be received at the Engineer's Office, in Chillicothe, until the 18th day of September, 1851, for the Graduation, Masonry and Bridging of 42 miles more of their road;—25 miles being between Greenfield and Blanchester, and 17 miles east of the 11 miles now under contract east of Chillicothe.

Plans, Profiles and Specifications will be ready for examination, at the Engineer's Office, on and after the 10th day of August. Blank Proposals will be furnished to Contractors, and all necessary information given upon the line or at the office concerning the quality and quantity of work.

W. P. CUTLER, Pre'st.
A. KENNEDY, Chief Engineer.

Virginia Locomotive and Car Works.

Wolfe Street and River Potomac, Alexandria, Va.
SMITH & PERKINS, Proprietors.

MANUFACTURE

Locomotive Engines and Tenders,
Marine and Stationary Engines and Boilers.
Chilled Car Wheels and Axles.
Patent Chilled and Wrought Slip-tire.
Machinery and Castings generally.

The undersigned having erected very extensive shops, and procured the most modern machinery and tools, are prepared to execute orders for Locomotive Engines, Cars, and Machinery of all kinds, with despatch, and on the most favorable terms.

R. C. SMITH,
Late of the Alexandria Iron Works.

THATCHER PERKINS,
Late Master of Machinery on the Balt. & O. R.R.
July 22, 1851.

Railroad Paint.

FOR depot buildings, bridges, burthen cars, wheels and axles, pipes, steam joints, fences, and every description of work requiring protection from the action of the elements. Price per barrel of 300 pounds, nine dollars.

Orders addressed to J. M. HALL, 36 South street, New York, will receive prompt attention.

CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by POWERS & WEIGHTMAN, manufacturing Chemists, Philadelphia.
Jan. 20, 1849.

Bridges & Brother, DEALERS IN RAILROAD AND CAR FINDINGS,

64 Courtlandt street, New York.

Having established a general Depot for the sale of articles used in the construction of Railroads, Locomotive Engines and Railroad Cars, we would invite your attention to our establishment. We have already in store a good assortment of CAR FINDINGS and other articles used in the trade, and feel justified in saying, that should you desire anything in our line, we can supply on terms perfectly satisfactory, and in the event of your desiring to order, you may feel assured that your terms will be as good as though you were here to make your own purchases.

Among our goods may be found Railroad Car Wheels, Axles, Jaws and Boxes, Nuts and Washers, Bolts, Brass Seat Hooks and Rivets, Window and Blind Springs, Lifters and Catchers, Door Locks, Knobs and Butts, Ventilators and Rings, Car Lamps, Coach and Wood Screws, Jack and Bed Screws and Babbitt's Metal; also Plushes, Damask, Enamelled Head Linings, Cotton Duck for Top Covering in width sufficient without seams, Curled Hair and all other articles appertaining to cars.

Also a new and valuable CAR DOOR LOCK, well adapted to the Sliding Door. This is decidedly the best yet introduced.

LOCOMOTIVE ENGINE LANTERNS, the best article made in the country. Whistles, Gauge and Oil Cocks, Hemp Packing, American, Russian and Italian. We are also agents for Lightner's Patent Journal Box for Car Axles, that invaluable invention, for the economical use and preservation of Car Journals.

Coach VARNISH and Japan of the best quality. We would also offer our services for the purchase as well as for the sale of goods on commission.—Both members of our firm have had the experience of many years in the manufacture of Railroad Cars, and our Senior was a member of the well known house of DAVENPORT & BRIDGES, Car Manufacturers, Cambridgeport, Mass. With our knowledge of matters pertaining to Railroads, we feel quite confident in giving satisfaction to both buyer and seller, and hope that through assiduity and attention to any business entrusted to our care we shall merit a continuance of confidence and patronage.

BRIDGES & BROTHER.

July 22, 1851.

Lightner's Patent Axle Boxes.

THE Undersigned are Agents for, and offer for sale, *Lightner's Patent Axle Boxes*, for Railroad Cars and Tenders, which have, by thorough experience, been demonstrated to be one of the most valuable improvements ever introduced in Locomotion. The saving effected in oil alone, will in a few months pay the first cost of these boxes, independent of other advantages. They are now in use upon the following, among other roads, viz:

Boston and Worcester, Boston and Providence, Boston and Fitchburg, Nashua and Lowell, Providence and Worcester, Northern, N.H., Cheshire, Manchester and Lawrence, Concord, N.H., Concord and Claremont, Ogdensburg, (Northern, N.Y.) Stonington, New London Willimantic and Palmer, New Jersey Central, New Hampshire Central, Worcester and Nashua, Fitchburg and Worcester, Connecticut and Passumpsic, Lowell and Lawrence, Salem and Lowell, Wilton Branch, Newburyport.

Below will be found the certificates of a number of gentlemen, whose opinions will be good authority in every part of the country.

Office Boston and Prov. R. R., }
Boston, Dec. 23, 1849. }

MR. JOHN LIGHTNER,

Sir,—It affords me pleasure to say, that after two years' trial of your boxes, I am fully and entirely satisfied of their superiority over any other pattern we have used. This superiority consists in economy of oil and freedom from "heating." I have tried every pattern of box in use, of any note, and do not hesitate to say, that you have devised one which in every respect combines greater advantages than any other within my knowledge; these advantages are so manifest, that I am fitting up all

our cars with your boxes, as fast as practicable.

Annexed, is a statement of an experiment with your boxes, the result of which may be of use to your interests.

Ten passenger cars, running 72 wheels, fitted up with Lightner's boxes used 41½ pints of Patent Oil, at 50 cts. per gallon, ran 43,099 miles, equal to 5-18 pints per wheel for 43,099 miles. Speed, 30 to 40 miles per hour.

Very respectfully yours,

W. RAYMOND LEE, Supt.

I have examined the above statement of Mr. Lee, and fully concur with him in his opinion of the superiority of Lightner's box.

GEORGE S. GRIGGS,

Supt. Machine Shop B. & P. R. R.

Boston, July 26, 1849.

This is to certify that J. Lightner's axle boxes for railroad cars and locomotive tenders, have been in use on the Boston and Worcester railroad one year, and I unhesitatingly pronounce it, in my opinion, the best and most economical one in use, requiring less oil, of easy application, not susceptible of derangement, as in most kinds in use. When requiring repairs or renewal, the same may be done in one-fourth of the time usually occupied for that purpose. The box requires oiling not oftener than once a month—is kept quite free from dust, and consequently wears much longer than those generally in use.

D. N. PICKERING,

Supt. Motive Power, B. & W. R. R.

Office of Boston Locomotive Works, }
December 12th, 1849. }

The Boston Locomotive Company have been using J. Lightner's patent axle boxes under the tenders of their engines for several months, and find them more highly spoken of by the railroad companies that have used them in regard to economy in the use of oil, their durability and their ease of adjustment, than any other boxes which they have used. We therefore do not hesitate to recommend them to all railroad companies.

DANIEL F. CHILD,

Treas. Boston Locomotive Works.

Taunton Locomotive Works, }
Taunton, July 7, 1849. }

MR. H. F. ALEXANDER,

Dear Sir,—Your favor of yesterday came to hand in which you ask what success we have met with, in using Mr. Lightner's patent box for cars, engines, &c.

We have put it in use on the Boston and Providence railroad, New Bedford and Taunton Branch railroad, Central railroad, N. J., Norfolk County, Rutland and Burlington, and as yet we have not had one complaint from them; and from what we have used of it, and witnessed, we do not hesitate to say that it is superior to anything in use for that purpose. It is simple in its construction, and easy of access, and the reservoir is held close to the shaft, and the oil and journal is perfectly secure from dust; they will run from four to six weeks without replenishing the oil. The brass in the box is changed very much easier than by any other plan that we have seen.

Very resp. yours,

W. W. FAIRBANKS, Agent.

Office Providence & Worcester R. R. Co., }
Providence, Dec. 17th, 1850. }

H. F. ALEXANDER, Esq.,

Sir,—The "Lightner patent boxes" for cars and locomotives have been in use under a portion of the passenger cars and engines of this company for upwards of two years, and have given very great satisfaction.

Though combining many excellent qualities, their great superiority consists in the economy of oil.

The result of experiments upon this road shows the consumption of oil by the use of this box, to be not more than one sixth part the quantity consumed by the use of the common box.

With the common box, eight passenger cars, 64 wheels, running 90 miles per day, consumed in 12 months 520 gallons of oil, being an average of 8½ gallon per wheel per annum.

With the Lightner box the same cars running the same number of miles per day, during the same space of time consumed 73½ gallons of oil, being an average of 1¼ gallon per wheel per annum.

So manifest are its advantages over any other box used by this company, it is intended to place it under all our cars as soon as practicable.

Besides the saving of oil, as they afford complete security from dust, we think them more durable than any other box in use.

Another advantage resulting from the use of this box is, cars run more easier than with the common box. The saving in fuel which it would effect, would of itself, we think be a sufficient inducement to use this box in preference to any other known to us.

Very respectfully,

ISAAC H. SOUTHWICK, Supt.

JOHN B. WINSLOW,

Supt. Machine Shop, P. & W. R. R.

Cambridgeport, April 5th, 1851.

H. F. ALEXANDER, Esq.

Sir,—This may certify that I have been engaged in the manufacture of railway cars since 1834, and have built for the different railroad companies cars of all descriptions to the amount of three millions of dollars, and have used on the above cars all kinds of journal boxes, and find that none give better satisfaction than the "Lightner patent box," both on account of the saving of oil and the arrangement for taking out and re-placing the composition by means of the sliding key, and other conveniences which no other box possesses.

Yours respectfully,

CHARLES DAVENPORT.

Worcester, March 17th, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—This is to certify that I have been for some years past engaged in building cars, and that I have tried most, if not all of the patent boxes, and have found Lightner's patent superior to all others as far as the saving of oil is concerned, also the ease with which they are fitted and exchanged in case they get out of order.

For the last three years, I have put them under all of the cars I have built, and in every instance they have given the most entire satisfaction.

Yours truly,

OSGOOD BRADLEY.

Office Union Works, So. Boston, }
May 23d, 1851. }

This certifies that I have applied Mr. J. Lightner's patent axle boxes to my locomotives and tenders for the past two years. I consider them superior to all others,—economical in their use, and possessing many important advantages not found in any other boxes.

SETH WILMARTH.

Office 15, R. R. Exchange, Boston, }
June 1, 1851. }

This is to certify, that we have known the success of Lightner's patent journal boxes upon various roads in New England the past three years, and have been led to examine their peculiar construction.—We are well satisfied of their merits, and have adopted them upon our small gravel cars, and take pleasure, as we ever have done, in recommending their use upon all roads where we are employed in the construction.

GILMORE & CARPENTER,
Contractors.

Amoskeag Manufacturing Co. Machine Shop, }
Manchester, May 31, 1851. }

H. F. ALEXANDER, Esq.

Dear Sir,—We are using the Lightner box on all the engines and tenders we build, and we are satisfied that it is the best box in use, and recommend the same to all those who purchase engines at our works.

Yours respectfully,

O. W. BAYLEY, Agt.

This is to certify that the Fitchburg railroad company having become satisfied of the superiority of J. Lightner's patent Axle Boxes for Railway Cars and Locomotive Tenders adopted the same.

and are bringing them into general use upon their road.

One year's experience with the above improvement, has fully convinced me that there has never been anything offered to the public for that purpose which possess such intrinsic value; in fact, this is an improvement which seems to overcome all the difficulties found in all the various kinds now in use. It possesses very many advantages over all others: Some of which are [first] the first cost is much less than that of most boxes in use. [Secondly] 75 per cent is saved in oil; one gill applied to each Journal once a month, or one quart to an eight wheel car, is all these boxes require per month [Thirdly] no dust can gain access to the Journal, which is constantly lubricated with clean oil; hence the saving in repairs of Journals and composition bearings, is a matter of importance. [Fourthly,] its construction is truly simple—not complicated, having nothing liable to become loose by constant and severe service. [Fifthly] for convenience there is nothing which approaches this improvement.—The composition bearings may be removed from the Journals of an eight wheel car, by one man, and returned, or duplicates, in twenty minutes, while under the car: the same would require two men, at least half a day with other boxes in use.—The trucks and wheels using these boxes, are free from oil and dirt, usually seen upon all railroad cars, at great expense to the corporation.

NATH'L JACKSON.

Supt. Car Building and Repairs, F.R.R. Co.

Boston, March 9, 1849.

I hereby certify, that I have examined a box for Car Journals, invented by Mr. Lightner of Roxbury, Mass, and I have thought so well of it that I have adopted it on our railroad, I have known of its success on other roads.

S. M. FELTON,

Supt. F. R. R.

Office of the Central R. R., N. J., }
Elizabethtown, May 1849. }

H. F. ALEXANDER, Esq.,

Dear Sir:—Your favor, [wishing to be informed how we liked Lightner's patent axle boxes for R.R. Journals,] has been duly received; in answer we would say, we have used the boxes on Locomotive tenders one year, more or less, and on our cars some six months. I consider them the best boxes in every respect, I have ever used, or even seen used on any other roads—for safety, durability and the economy pertaining to all the details connected with the boxes and Journals of R. R. Car wheels; and we shall adopt them upon this road.

Yours Respectfully,

JOHN O. STEARNS.

Supt. Central Railroad Co., N. J.

Manchester, N. H., Nov. }
1st, 1850. }

H. F. Alexander, Sir,

I have used "Lightner's Boxes" under all the Cars of the Manchester and Lawrence railroad, and feel no hesitation in saying that I think them to be the best boxes now in use.

Yours, &c.,

THEODORE ATKINSON, Agent.

Cheshire R. R. Office, Keene, }
March 5th, 1851. }

Mr. H. F. Alexander,

Sir,—Lightner's Patent Boxes have been used on the Cheshire R. R. about a year, and have given the highest degree of satisfaction.

All the Passenger Cars now in use, and a considerable number of Merchandize Cars are furnished with them, and they will take the place of the Common Boxes on all the cars as fast as circumstances will permit.

Very Resp'tl.

L. TILTON,

Supt. Cheshire R. R.

Boston and Worcester Railroad, }
Boston, April 1st, 1851. }

H. F. Alexander, Esq.,

Dear Sir,—Lightner's Patent oil saving box for railroad cars, has been adopted by this corporation; we are taking out the common and substituting the

Lightner's at the rate of fifty boxes per month; it will soon take the place of all others, as it is decidedly preferable to any heretofore used by this corporation.
G. TWITCHELL, Supt.

Statement of amount of oil used on 32 8-wheel freight cars, on the Boston and Providence Railroad (with Lightner's Boxes) from March 10, 1849, to February 27, 1851, and upon 12 8-wheeled passenger cars from September 8, 1849, to February 27, 1851.

FREIGHT CARS.

Amount Oil.	No. months.	Amount Oil.	No. months.
1.—25 pts.	10	17.—23½ pts.	14
2.—19 "	6	18.—23½ "	11
3.—25 "	13	19.—36 "	21
4.—18 "	7	20.—22 "	10
5.—22 "	12	21.—38½ "	24
6.—24 "	13	22.—29 "	23
7.—20 "	11	23.—35½ "	23
8.—21 "	11	24.—37½ "	23
9.—23½ "	10	25.—51 "	23
10.—21 "	9	26.—31½ "	24
11.—20 "	9	27.—28½ "	23
12.—21½ "	11	28.—36 "	23
13.—19 "	8	29.—50½ "	24
14.—25½ "	17	30.—50 "	23
15.—20½ "	10	31.—41 "	23
16.—31 "	18	32.—39½ "	23

Total, 925½ pts. 510

PASSENGER CARS.

1.—19½ pts.	18	7.—30 pts.	18
2.—25½ "	18	8.—25½ "	18
3.—33½ "	16	9.—29 "	18
4.—19 "	15	10.—46½ "	17
5.—15 "	15	11.—9 "	9
6.—22 "	18	12.—65½ "	17

Total, 340 pts. 197

Averaging 1 4-5 pints of oil for freight, and 1 7-10 for passenger cars per month only!

All orders and enquiries promptly attended to.

BRIDGES & BROTHER,

No. 64 Courtlandt st., New York.

July 25, 1851.

To Boiler Makers, Engineers, etc., etc.

PATENT LAP-WELDED IRON TUBES,

Manufactured by the

BIRMINGHAM PATENT IRON TUBE CO.

UNDER

PROSSER'S PATENT,

from one and a quarter to eight inches in diameter.

These tubes are well known for their superiority over all other descriptions for Locomotive, Marine and other Steam Engine purposes, for which they are used very extensively in Great Britain and on the Continent of Europe.

For sale in quantities to suit purchasers, by

WILLIAM BIRD & CO.,

44 Wall st., New York.

July 26, 1851.

To Railroad Companies.

THE undersigned has discovered and patented an imperishable, cheap, and sufficiently elastic substance, to be introduced between the sill and rail, so that the stone sill can be used in place of the wooden sill: entirely overcoming that rigidity where the rail is laid directly on stone. Address

J. B. GRAY, Philadelphia.

July 10, 1851.

To Contractors.

Peru and Indianapolis Railroad.

PROPOSALS will be received at the office of the Peru and Indianapolis Railroad, in Noblesville, until the evening of the 13th of August next, for the Grading of the line of the above road from Noblesville to Peru, a distance of fifty miles. Also the masonry for Bridges over the Wabash, Big Pipe and White Rivers.

The proposals are to be addressed to W. J. HOLMAN, Esq., Chief Engineer, at the Company's Office, where plans and specifications of the work may be seen. Payments will be made monthly in cash, reserving 15 per cent. till the contracts are completed.

Indianapolis, July 12, 1851.

European and North American Railway.

THE undersigned, the three persons first named in the first section of an act passed by the Legislature of Maine, and approved the twentieth day of August last past, entitled "An Act to incorporate the European and North American Railway Company," and being specially authorised therefor in and by said act, hereby give public notice that, for the purpose of receiving subscriptions to the stock of said company, as established by the act aforesaid, according to the provisions thereof, not exceeding forty thousand shares, books of subscription will be opened under the direction of the undersigned, according to the regulations prescribed, at the time and places following, viz:—On WEDNESDAY, the Twentieth day of August next,

At Calais, Maine, with Noah Smith, Jr., Esq.

Eastport, do. " Col. Bion Bradbury.

Machias, do. " Walker & O'Brien,

Ellsworth, do. " Seth Tisdale, Esq.

Oldtown, do. " Geo. P. Sewall, Esq.

Bangor, do. " Geo. W. Pickering, Esq.

Orono, do. " Hon Israel Washburn, Jr.

Waterville, do. " Hon. Timothy Boutelle.

Brunswick, do. " Prof. William Smyth.

Augusta, do. " B. A. G. Fuller, Esq.

Belfast, do. " John Y. McClintock, Esq.

Portland, do. " John B. Brown, Esq.

Portsmouth, N.H. Hon. I. Goodwin.

Salem, Mass. Stephen A. Chase, Esq.

Boston, do. " Francis Skinner & Co.

Lowell, do. " John Wright, Esq.

Worcester, do. " Charles Washburn, Esq.

Providence, R.I., " Billings Brastow, Esq.

Hartford, Conn., " Hon. C. F. Pond.

New Haven, do. " Allen Prescott, Esq.

New York, N.Y., " R. & G. L. Schuyler, No

2 Hanover street.

Albany, do. " John V. L. Pruyn, Esq.

Troy, do. " Hon. John D. Willard.

Philadelphia, Pa. " Hon. Wm. C. Patterson.

Montreal, Canada, " Hon. John Young.

Quebec, do. " J. B. Forsyth, Esq.

Said books will remain open for ten successive days at the places and with the persons aforesaid. Dated at Portland, this sixteenth day of June, A. D. 1851.

ELIJAH L. HAMLIN,

ANSON G. CHANDLER,

JOHN A. POOR.

Trautwine on R. R. Curves.

By JOHN C. TRAUTWINE, Civil Engineer,

Philadelphia, Pa.

IN press, and will be published in a few days; accompanied by a Table of Natural Sines and Tangents to single minutes, by means of which all the necessary calculations may be performed in the field.

This little volume is intended as a field-book for assistants; and will be found extremely useful, as it contains full instructions, (with wood cuts) for laying out, and adjusting curves; with Tables of Angles, Ordinates, etc., for Curves varying from 13 miles, down to 146 feet Radius.

A portable Table of Natural Sines and Tangents to minutes, has for a long time been a desideratum among Engineers, independently of its use in laying out curves.

The volume is neatly got up in duodecimo; and handsomely bound in pocket-book form.

Sold by Wm. Hamilton, Actuary of the Franklin Institute, Philadelphia. Price \$1.

Also in press, and will be issued in a few weeks, "Trautwine's Method of Calculating Excavation and Embankment."

By this method, which is entirely new, (being now made known for the first time) the cubic contents are ascertained with great ease, and rapidity, by means of diagrams, and tables of level cuttings. Thin octavo; neatly half bound, \$1. For sale by Wm. Hamilton.

June 28, 1851.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

Notice to Contractors.*Steubenville and Indiana Railroad.*

PROPOSALS will be received at the Office of the Steubenville and Indiana railroad company in Steubenville, until the first day of October next, for the Grading and Masonry of the first division of the road extending from Steubenville to the Connotten valley and also for the construction of the entire road between Steubenville and Coshocton; and also distinct proposals for the construction of that portion of the road extending from Coshocton to Newark.

The entire length of this line is about 110 miles, and it contains work of all descriptions, in great variety, some of which is quite heavy.

Proposals will be received for the Grading and Masonry of the first division entire or in sections of about a mile each, the Company reserving the privilege to make such disposition of the whole work, as may appear most conducive to its interests.

Plans, profiles and specifications can be seen at the office of the Company after the 15th of September, and further information may be obtained on application to J. Blickensderfer, jr., Chief Engineer, or to the undersigned,

D. KILGORE, President.

Notice to Contractors.*Engineers Office, E. T. & V. R. R. Company, Greenville, E. T., June 5th, 1851.*

PROPOSALS will be received until the 1st day of October next, for the Grading and Masonry of that part of the E. T. & V. Railroad between the Eastern terminus of said road at King's Meadow, and Rheatown, in Greene County, a distance of about forty-seven miles. A large amount of very heavy work, both in Grading as well as Masonry, will be found on this division, offering strong inducements to able Contractors.

Maps, Profiles, and Specifications can be seen at this Office, on and after the 20th of July next.

The Company reserve the right to reject all, or any proposals that they deem unsatisfactory.

Proposals should be directed to the Treasurer and Secretary of the E. T. & V. Railroad Company, Jonesborough, E. T.

LLOYD TILGHMAN,
Chief Engineer.**Railroad Lanterns.**

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.

August, 16, 1849.

6m33

Railroad Iron.

THE Subscribers, Agents for the Manufacturers, are prepared to contract for the delivery of Railroad iron at any port in the United States or Canada, or at a shipping port in Wales.

WAINWRIGHT & TAPPAN,
29 Central Wharf.

Boston, June 1, 1851.

Bowling Tire Bars.

40 Best Flange Bars 5½x2 inches,	11 feet long.
40 " " 5½x2 " "	7 feet 8 in. long.
40 " Flat " 6x2 " "	11 feet long.
40 " " 6x2 " "	7 feet 8 in. long.

Now in store and for sale by

RAYMOND & FULLERTON,
45 Cliff street.**To Railroad Companies, Machinists, Car Manufacturers, etc., etc.**CHARLES T. GILBERT,
NO. 80 BROAD ST., NEW YORK,

IS prepared to contract for furnishing at manufacturer's prices—

Railroad iron,
Locomotive Engines,
Passenger and Freight Cars,
Car Wheels and Axles,
Chairs and Spikes.

Orders are invited; and all inquiries in relation to any of the above articles will receive immediate attention

THE Fourth Annual Exhibition of AMERICAN MANUFACTURES, by the MARYLAND INSTITUTE for the Promotion of the Mechanic Arts, will be opened in Baltimore on the 20th October, 1851.

The Exhibition will be held in the SPLENDID NEW HALL of the Institute, (fronting on Baltimore street) now being rapidly completed. Their edifice is centrally situated, chaste in its architecture, solid in its construction, and is by far the largest and most complete building in the United States, devoted to the Mechanic Arts. It may be added that this building is 355 feet long by 60 in breadth, with an average height of 68 feet, containing some twelve apartments, the largest of which is 255 feet by 60, and that the cost will be over \$70,000.

To this Exhibition, the Managers ask the attention of all engaged in industrial pursuits throughout the country, and cordially invite them to contribute specimens of their best productions for public inspection, and to compete for the prizes offered by the Institute. These prizes consist of GOLD and SILVER MEDALS, DIPLOMAS, etc., which were last year distributed as follows:—Gold Medals, 16; Silver ditto, 90; Diplomas, 60; besides 85 articles of Jewelry, etc., to ladies. Fair play will be scrupulously observed towards all, and every facility of Steam power, shafting, fixture, labor, &c., &c., will be amply provided free of expense. The machinery will be under a special superintendent, and a fine display of it is looked for. The last exhibition of the Institute was visited by more than 40,000 persons, and with their vastly improved accommodations and alterations, this number will be doubled at the coming display, embracing many Virginians, Pennsylvanians, and other strangers from the South and West.

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(The last nine in *Italics* are the Committee on Exhibition.)

The Hall will be opened for the reception of goods on MONDAY, 13th October; on the next Monday, 20th, at 7 P. M., the Exhibition will be formally opened to the public, and will positively close on Wednesday, 19th November. Articles for competition must be in the Hall by Thursday night, Oct. 16, unless delayed in shipment after starting in ample time.

Those who intend depositing, will give the Committee or the Agent, notice as early as possible, stating the nature of the goods, and probable amount of room required, to exhibit them to advantage.

Circulars, containing a view of the new Hall and the full regulations of the Committee, with special information, if required, may be had promptly, by addressing the undersigned, or the Institute's Agent, J. S. Selby, Baltimore, post-paid.

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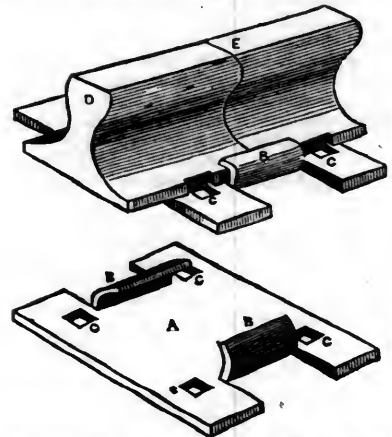
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June 1, 1851.

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June 20, 1851.

3m.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

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J. T. HODGE, *For Mining and Metallurgy.*

GEN. CHAS. T. JAMES, *For Manufactures and the Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & Co., 136 NASSAU ST.

Saturday, September 20, 1851.

The "Great Western Railroad" of Canada.
New York, September 15th, 1851.

TO THE EDITOR OF THE R. R. JOURNAL:

Sir—While on a visit at Hamilton, C. W., last week, I received from a gentleman in the direction of the Great Western railroad company, an invitation to accompany a party, composed of the editors of the local press, the chief engineer, and one or two of the contractors, on a tour of observation along a portion of the line of railroad now in course of construction. The opportunity thus afforded induces me to throw together a few hasty remarks on the subject of this road, and its prospects of speedy completion.

For the information of such of the readers of the "American Railroad Journal," as have not visited "Her Majesty's Canadian Possessions," (a term which very many loyal people delight in), I will first speak of the geography of the road and the lo-

calities it will connect. When the name of Canada is mentioned to many Americans, who have not improved their education by even a tour to the "Falls," it is not unfrequently attended by an involuntary shiver, conveying the idea of a country covered half the year by snow. They have read in their school geographies, and been told by their nurses, frightful stories about the intense cold and fearful snow storms of Canada—which, as regards the region about Quebec, are doubtless quite true; and hence it is difficult for them to conceive that any part of Canada can be a desirable place of residence. For the information of such persons, and many such I have met in my travels in various parts of the Union, I would state that there is a tract of country in western Canada as large as Massachusetts, Connecticut, and Rhode Island, put together, lying south of a line drawn from Toronto due west to the shores of Lake Huron. The greater portion of this large tract of country lies on a parallel south of Boston, and corresponds in latitude with the most valuable agricultural districts of the State of New York. There is, however, no part of that fertile State of equal extent, taken as a whole, that can compare with this part of Canada in fertility of soil, healthiness, and equability of climate, facilities for internal communication, as well as all other natural advantages. I make this bold assertion, with a thorough knowledge acquired by an extended residence in both countries.

The section of Canada which I am describing is, moreover, a peninsula, formed by the lakes Huron, St. Clair, Erie and Ontario, and the rivers which connect them. This circumstance of being nearly surrounded by large bodies of water, has probably had a very favorable effect on the climate, in mitigating the extremes of heat and cold. The reader will now be so kind as to cast his eye upon the map of the United States, and he will perceive that this great peninsula of Canada, the property of her Britannic Majesty, obtrudes itself in the most impertinent manner imaginable, right between the State of Michigan and the Empire State of New York—thus cutting off Uncle Sam's only direct communication between his eastern and western territories and states. But, bold as is the position which nature has thus assigned to western Canada, she possesses another, scarcely less important, in a commercial point of view. While she holds in her hand the key to the trade between the Atlantic

sea board and the great west, she also lies directly on the great highway between the north and the south, the rich and teeming valley of the Mississippi and the Gulf of Mexico on the south, and the magnificent river and Gulf of St. Lawrence on the north. But possessed as she is of all these natural advantages, with vast forests of the finest timber, abounding in minerals of all kinds, and every where abundantly supplied with water power, she has allowed the vast commerce between the east and the west, the north and the south, to be diverted around her southern and eastern borders by a circuitous route. Her canals, built at enormous cost, on a most magnificent scale, are found unequal to a fair competition with the Erie canal.

There are some people, on both sides the line, malicious enough to impute this anomalous position of Canada, to the enervating effects of her colonial relations with England. Others go further, and assert that she can never fully develop her great natural resources, or use the key to the southern and western commerce, which she undoubtedly holds, until she annexes herself to the great republic, and enjoys without limit the benefits of reciprocal free trade. But these are questions, which time and the people of the two countries will doubtless settle to the satisfaction of all parties. At present, we must look at matters as they really are. A stranger visiting the British Provinces at the present moment, although on the eve of a general election, which of course engrosses much attention, would fancy from the magnificent projects for the construction of railroads from Detroit to Halifax, that he would hear every where discussed, that a people so enterprising and spirited, and having the control of such vast capital—in fact holding the entire command of John Bull's heavy purse-strings—must have many hundreds of miles of railroad in active operation. He will, however, feel surprised at learning, that Upper Canada has not a mile of road to boast of. But she is doubtless waking up from her slumbers—perhaps the neighing of the iron horses which frequent her borders at many points, has disturbed her dreams of quiet repose—and the Great Western railroad is to be the result of her first efforts; and a grand result it will be. My friends at Hamilton must pardon this little digression, upon subjects not entirely connected with their road. They must recollect that I am writing for the information of those who are less

acquainted with the causes of the slow progress of railways in Canada than they are. But I will now proceed with their favorite and truly great enterprise.

The reader, having his eye still upon the map of the United States, will perceive, as I have before stated, that the peninsula of western Canada interposes itself between the States of Michigan and New York, and that the shortest possible route between the two, is through it. In order to fully appreciate the importance of the Great Western railroad, which is intended as a connecting link between the railroads of the two States named, it will be necessary to compare distances. Taking Canandaigua, whence a railway is building direct to Niagara Falls, as the starting point going westward, it will be as follows:

To Buffalo via Batavia, where the roads intersect.....	85 miles.
Buffalo to Detroit by the lake.....	327 "
	412 miles.
Canandaigua to Niagara Falls.....	85 miles.
Niagara Falls to Detroit, by the Great Western.....	227 "
	312 miles.

In favor of the Canada route.....100 miles.

Competing for the more westerly travel of Chicago, with the Southern Michigan railroad and the roads building round the south shore of Lake Erie, the distance will still be more than 60 miles in favor of the Great Western. This road in fact will not only command the greater part of the through travel and traffic on the Central Michigan road, and the New York Central roads to Albany, but also that of the Southern Michigan road which must shortly have a branch crossing the Detroit river at Amherstburgh to intersect the Great Western at a convenient point. It will also lay claim to a large share of the business and travel from the New York and Erie road by way of Elmira and Canandaigua—which will be the shortest possible route between New York city and Chicago. The Ogdensburgh railroad will be another tributary.—But perhaps of all the various routes which this Canada railroad is destined to open and control, the favorite one during the season of navigation will be by Lake Ontario to Oswego. Passengers leaving Detroit at a convenient hour after breakfast, will reach Hamilton, head of Lake Ontario, in the middle of the afternoon, and take one of the splendid steamers and arrive at Oswego next morning, after a good night's rest; and be in New York the same evening—where, of course, every body who travels is going. Old travellers, who know the luxury of getting on board a fine steamer after a fatiguing day's ride in a railroad car, will always appreciate this route. I may also mention here, that in addition to all these extraordinary advantages possessed by the Great Western railroad, it will form a portion of the "Great Main Trunk road" to be built from Windsor to Halifax. But as the lower end of this line, between Halifax and Quebec, an uninhabited country, is to be built first, out of a loan guaranteed by the Imperial government, and the remainder, through the wisdom of Mr. Hincks, Inspector General of Canada, by corporate securities and provincial debentures, it may be some years before the Great Western can avail itself of this source of business. Canadian statesmen should have credit for originality of ideas and conceptions, and for doing things differently from the rest of the world. After waiting till the coun-

try has fallen twenty years behind all other civilized nations, in railways, the great necessity of the age, they commence, when an opportunity is afforded, at what the stupid Yankees and English would be very apt to call the wrong end. They are going to build six hundred miles of railroad where nobody lives, and nobody wants to go. This is doubtless done from the belief that, if the government make the bad lines of road, some good natured people will be found to buy up corporation debentures to build the good ones. They don't consider that a bad bargain is a bad bargain, at any price. I wonder if the prospect of a little jobbing, the fingering of thirty-five millions of dollars, to be borrowed by the Provinces from Uncle John's exchequer, has had anything to do in saddling the Provinces with the payment of this enormous sum—principal and interest; though the latter be but three and a half per cent.

With a similar guarantee there are doubtless plenty of men to be found in the Canadian Legislature who would pledge the credit of the Province to build a railroad to the Rocky Mountains, Cape Horn, or even to the Moon, under the influence of which planet they must be presumed to be acting. But I am again digressing.

Having now pointed out some of the extraneous sources of business which this line of railway must necessarily command, without saying anything of a large local traffic, the reader will doubtless desire to know what prospect there is of its speedy completion. On this subject I can speak from personal observation, and some knowledge of the company's resources. The whole line is under contract, and about 50 miles from Hamilton, westward, in a forward state of grading. The first ten miles, after leaving Burlington Bay, is very heavy work, presenting many serious engineering difficulties. These, however, have been surmounted in the most skillful and masterly manner by the able chief engineer, R. G. Benedict, Esq., and his assistants. At the above distance the table land, extending in an almost level plane to Detroit, is reached. On following the line of road over the first 17 miles westward from Hamilton, and noting the progress of the different contractors, I was much struck with the admirable route selected for the road. It passes through a gravelly ridge about 100 feet high, which separates Burlington Bay from a large marsh extending three miles to the village of Dundas. The cutting here will be about 60 feet in depth, and over a quarter of a mile in length, through a solid bed of firmly cemented gravel. The line then crosses a small canal running to Dundas through the marsh. Here great difficulties are encountered. In order not to interfere with the navigation, where a vessel having a mast is rarely or never seen, the company are obliged, at great expense, to construct a draw bridge. For this purpose soundings have been taken in the marsh, and a coffer dam constructed, so as to lay the foundation of two abutments, at a depth of 25 feet below the surface of the water. These foundations are to be laid on piles driven close together, in order to prevent it from sinking. The towers or abutments are to rise 50 feet above the water, thus making their whole height 75 feet.

On reaching the westerly bank of the canal, the line of the road continues to rise on a regular and uniform grade of 45 feet to the mile, for ten miles, to the summit level at Cope Town. The route is on the southeasterly declivity of the picturesque range of hills which surround Hamilton and the head of Lake Ontario like a vast amphitheatre.

The scenery along this part of the road is very beautiful and imposing, as you gradually and almost imperceptibly rise the declivity. At four miles from Hamilton, the roadway lies about half way up the hill side, which here becomes and continues for several miles, quite precipitous. It reminds one of some points along the Erie railway, where it winds along the bold and devious banks of the Delaware. All the gentlemen of our party, who had not before visited the works, were surprised and highly gratified at the rapid progress they were making. It is now pretty certain that all the section lying west of Cope Town and extending to London where the grades are very light, and but few obstacles occur, will be ready for the iron within one year from this time, and the entire line from Niagara Falls to Detroit in running order within two years.

At Cope Town, the summit between Lakes Ontario and Erie is passed. The party proceeded on some seven miles further, sometimes on foot, following the long deep cuttings and embankments, when we reached a farm house at Fairchild's creek, occupied as the head quarters of Mr. Zimmerman, of Niagara Falls, the partner of Mr. Farewell, of Utica, the principal contractors. These gentlemen are both of the right sort for building railroads.—They are as courteous and gentlemanly in their manners as they are energetic and business-like in their operations. Here we were met by two of Mr. Benedict's assistants, Messrs. Spaulding and Babbit, who, like all others connected with the practical department of the road, with whom it has been my pleasure to meet, I found to be gentlemen of intelligence and thoroughly acquainted with their business. The engineers and nearly all the contractors, I may here mention, are Americans. The Canadians are too far behind this age of railways and steam locomotion, to furnish men competent for such undertakings. They have therefore wisely given place to men of experience, who will lay out the company's money to better advantage. Being a Canadian myself, I feel that I have the privilege of speaking what may be an unpalatable truth to my countrymen. Here, after partaking of an excellent and bountiful repast, prepared for us by Mr. Zimmerman, and doing ample justice to his iced champagne, I left the excursionists to pursue their way westward, and returned with some of the party to Hamilton the same evening.

The means of the company are as follows, as nearly as I could learn:

Private stock held in Canada, about.	\$400,000
Corporation subscriptions.....	600,000
Agreed to be taken on contract for iron....	500,000
Government guarantee for half the price of construction.....	3,000,000
	\$4,500,000

There is in addition a small quantity of stock held in England, but how much I am unable to state—inasmuch as there appears to be some mystery attached to the English subscriptions. Sometimes a paragraph appears in a Canada paper, affirming on "good authority," that a million of dollars or more of the stock has been taken there. At another time it is asserted that there are "good reasons" for stating that English capitalists are beginning to understand the value of Canadian investments, and intend shortly to take all the spare stock in this and many other projects long talked of in the Provinces. But the capital required, in addition to the above aggregate sum, to finish the road, the company expect will be taken by Americans inter-

ested in the Central Michigan railway, and the roads between Albany and Rochester, which are to connect with the Great Western by the Rochester, Lockport and Niagara Falls railroad, now building.

These gentlemen, however, have not yet come up to the scratch, and I heard it intimated by a person in the board of direction at Hamilton, that, unless the promised million was very shortly forthcoming, a negotiation would be opened with the capitalists connected with the New York and Erie and the Southern Michigan roads. By changing the direction of the Western road very slightly, and without increasing its length, it might be carried to Amherstburgh, which is only some 15 miles from the Southern Michigan line. Such an arrangement would be of great value to the latter road as well as to the Erie, and would give them the advantage in the carriage of freight and passengers east and west. It would also be of equal or greater value to the Great Western; for while it secured to it the trade and travel on the two more southern lines, the more northern ones would not have it in their power to divert their business into other channels, on account of the manifest superiority of the Canadian route. If the subject has not already engaged the attention of the parties interested in the southern roads, I advise them to lose no time. An offer of a million of dollars for stock in the Great Western just now, would turn the scales in their favor. Where are Mr. Loder and Mr. Townsend, that they are not looking to this matter?

I have omitted to speak of the exceeding favorableness of the grades on the line of the Great Western, which must make it the safest and enable it to acquire the highest degree of speed of any road in America of similar length. The locating engineer, in his report, states that "95 per cent of the whole distance is in tangent lines, and two-thirds of the remaining 5 per cent is on curves of which the radii vary from 5,780 feet to 11,060; while 183 miles is either entirely level, or exhibits inclinations of less than five feet per mile, and 54 miles present slopes of less than 20 feet to the mile." With the newly invented "Compound Patent Rail," which is in two parts, and riveted together so as to break joints, a speed equal or greater than that on the best English railways may be attained on the Great Western with perfect safety and comfort. I understand that it is the intention of the chief engineer, Mr. Benedict, to recommend this rail for adoption by the company. H. B. W.

Texas.

The Railroad Convention.—A public meeting of the citizens of San Augustine county is called for Saturday next, to appoint delegates to represent this county in a Railroad Convention to be held in Burkeville, on the first day of October next. What are our sister counties doing in this matter? We sincerely hope that the meeting will be held and delegates appointed from every county. No time is to be lost. Louisiana herself selects Burkeville as the place of holding the convention, thus giving us all advantages in point of location. A continuation of the present projected road for eighty-four miles connects it with the Sabine river opposite Burkeville, and then the proposed route continues through a level, timbered section of the State for several hundred miles. We again say that we hope every county from the Gulf to Red River on the north will be represented. Mr. Cyrus Thompson, in a letter to the Hon. William Hardiman, of Nacogdoches county, pledges "a respectable, if not large attendance of delegates from Louisiana."—He says "much interest is felt there in the matter"—and all that is now necessary for the completion of this great work is for Texas to feel a similar interest.—*Redland (Texas) Herald.*

Observations on the Pluton Geysers of California.

By FOREST SHEPHERD,* Prof. Economic Geology, in Western Reserve College, Hudson, Ohio.

There is a tradition among the Indians of California, that not many years ago, the Chrysopylæ or Golden Gates at the entrance of the Bay of San Francisco were part of the solid land, and that the inland sea receiving the waters of the Sacramento and San Joaquin overflowed the beautiful valleys of San Jose, Napa and Sonoma, and had its outlet in the vicinity of Monterey.

Other more recent California explorers affirm that in the present bay of San Francisco they have discovered standing trees completely petrified, to which they have made fast their boats at low tide. The numerous dislocations observed in the tertiary strata, together with the great number of specimens of petrified wood and deposits of lignite found upon the shores of the bay, also signs of thermal action at the southeastern section of the bay, induced me to give so much credence to the above and other traditions, as to enter upon some careful examinations with reference to them. In the course of my investigations, I have explored some remarkable geysers in the Pluton valley, and these form the main subject of my present communication.

On my way to the Pluton valley, I first coasted around the bay of San Francisco in an open boat, examining the rocks in its vicinity. At the entrance of Napa valley and about two miles from the present tide, I discovered a belt of remarkably hard and heavy limestone, evidently fossiliferous and yet changed in some places by metamorphic action. In breaking into this bed of limestone, however, I was surprised to find imbedded in the solid rock, sharks teeth as perfect in their serrated edges as those of present living species swimming in the bay only two miles distant. I examined the range of hills eastward about one mile, which bounds and divides Napa valley from Suisun, and there I found the rocks to be a porphyry, with numerous springs flowing out at the base. I applied my thermometer and was surprised to find no two springs of the same temperature, they ranging from seventy-eight degrees Fahrenheit downward. I now travelled about thirty miles northward in Napa valley, following the above mentioned chain of hills to the thermal springs of Messrs. Ritchie and Tucker, where I found the temperature of different springs as follows:—

No. 1,	105 degrees, Fah.	No. 11,	132 degrees Fah.
2,	120 "	12,	169 "
3,	144 "	13,	129 "
4,	133 "	14,	150 "
5,	147 "	15,	131 "
6,	144 "	16,	128 "
7,	129 "	17,	93 "
8,	124 "	18,	100 "
9,	120 "	19,	120 "
10,	131 "	20,	118 "

These springs are all embraced in a half mile square of level bottom land near the base of a small hill or mound of conglomerate rock about one hundred and fifty feet in height. The same kind of rock also extends underneath the springs. There is little or no opportunity for surface cold water to commingle with them, and it is a remarkable fact that they are continually changing their temperature, so that one that is now moderately warm will in the space of a few weeks or months become hot beyond endurance. This shifting of the internal heat greatly excited my curiosity, and on enquiring, I learned from Mr. Cyrus that the Indians had pointed out a place near the foot of Mount St. Helena where the hot waters formerly flowed, but had now ceased. I believed this to be a good opportunity to test the truth of their tradition, and repaired to the spot. Externally there was no uncommon appearance to designate the locality. Neither a surplus nor scarcity of vegetation, and no appearance of scoria, tufa or travertine, as might have been expected. I found one place slightly warm on the surface, which on excavating to the depth of two feet became so hot that I could not bear my hands in the mud and clay. I inserted the bulb of my thermometer, and the mercury at once rose to one hundred and twenty degrees. From observa-

* From a letter addressed to Thomas Denny, Esq., New York city, and communicated by him to the American Journal of Science and Arts.

tions already made by myself and in company with Professor James Nooney, I now felt that I could trace the line of thermal action, and my next object was to find the seat or focus of its greatest intensity. To accomplish this I was so fortunate as to have the aid of Messrs. P. Cyrus, J. Cyrus, and B. F. Briggs, three excellent young gentlemen and experienced hunters. We travelled northwesterly from the head of Napa valley, and after encamping one or two nights in the rain, and wandering through almost impenetrable thickets, reached the summit of a high peak on the morning of the fourth day. On the west we saw the vast Pacific. On the south, the bay of San Francisco, Mount Diabolo,* Sonoma and Napa valleys. On the southwest, the valleys of Santa Rosa and Russian river. On the east, the lofty range of the Sierra Nevada; while on the north, almost immediately at our feet, there opened an immense chasm apparently formed by the rending of the mountains in a direction from west to east. The sun's rays had already penetrated into the narrow valley and so lighted up the deep defile, that from a distance of four or five miles, we distinctly saw clouds and dense columns of steam rapidly rising from the banks of the little river Pluton. It was now the eighth of February, the mountain peaks in the distance were covered with snow, while the valley at our feet wore the verdant garb of summer. It was with difficulty we could persuade ourselves that we were not looking down upon some manufacturing city, such as Pittsburg or Wheeling, until by a tortuous descent we arrived at the spot where at once the secrets of the inner world opened upon our astonished senses. In the space of half a mile square we discovered from one to two hundred openings through which the steam issued with violence, sending up columns of dense steam to the height of one hundred and fifty to two hundred feet, like our largest ocean steamers, and gradually diminishing to engines of one or two horse power. The roar of the large tubes could be heard for a mile or two. The sharp hissing of the smaller ones is still ringing in my ears. Many of them would work spasmodically, precisely like high pressure engines. Throwing out occasional jets or volumes of hot scalding water some twenty or thirty feet, endangering the lives of those who rashly venture too near. In some places the steam and water came in contact so as to produce a constant "jet d'eau" or spouting fountain with a dense cloud above the spray, affording vivid prismatic hues in the sunshine.

Numerous cones are formed by the accumulation of various mineral salts and a deposit of sulphur crystals with earthy matter, which often harden into crusts of greater or less strength and thickness. Frequently the streams of boiling water would mount up to the top of the cones with violent ebullition. Some of the cones appear to be immense boiling cauldrons, and you hear the lashing and foaming gyrations beneath your feet as you approach them. It is then a moment of intense interest. Curiosity impels you forward—fear holds you back; and while you hesitate, the thin crust under your feet gives way, and you find yourself sinking in the fiery maelstrom below. The writer on one occasion heard the rushing of water under his feet. He struck down an axe which on the first blow went through into the deep whirling pool the whole length of the helve. He withdrew it and cut an opening, which revealed a stream of angry water, boiling intensely, of an unknown breadth and depth. He continued to enlarge the opening until the stream was seen to be five or six feet in breadth, leading on indefinitely into the dark caverns beneath the mountain. This geyser is called *Agassiz's Maelstrom*.

Another place where a volume of water boils up violently and settles in a circular basin and has also a steam tube by its side, is called *Silliman's Fountain*. Another is named the *Panther Geyser*, from the circumstance that a huge wild panther had taken up his residence on the bank of the warm mound and seemed quite unwilling to leave his comfortable habitation. Another, where the waters gyrate with a loud noise "in gurgite vasto" is called *Pluto's Cauldron*. Another, the *Ocean Steamer*, &c.

* Mount Diabolo is reported to be an extinct volcanic cone.

At the base of the cones, in the bottom of the ravines, and in the bed and on the north bank of the river Pluton, springs almost innumerable break out, which are of various qualities and temperatures, from icy coldness up to the boiling point. You may here find sulphur water precisely similar to the *White Sulphur* of Green Brier County, Va., except its icy coldness. Also red, blue and even black sulphur, both cold and hot. Also pure limpid hot water without any sulphur or chlorine salts, calcareous hot waters, magnesian, chalybeate, &c., in almost endless variety. Every natural facility is afforded for either vapor, shower or plunging baths. Where the heated sulphuretted hydrogen gas is evolved, water appears to be suddenly formed, beautiful crystals of sulphur deposited (not sublimed as by fire), and more or less sulphuric acid generated. In some places the acid was found so strong as to turn black kid gloves almost immediately to a deep red. Where the heated gas escapes in the river Pluton, such is the amount of sulphur deposited that the whole bed of the stream is made white for one or two miles below, similar to the *White Sulphur Spring* in Virginia. From numerous experiments made here and in the mountains of Virginia, I am confident that all sulphur springs possess a high temperature after descending below the cold surface water. Notwithstanding that the rocks and earth in many places are so hot as to burn your feet through the soles of your boots, there is yet no appearance of a volcano in this extraordinary spot. Were the action to cease, it would be difficult after a few years to persuade men that it ever existed. There is no appearance of lava. You find yourself standing not in a solfatara nor one of the salses described by the illustrious Humboldt. The rocks around you are rapidly dissolving under the powerful metamorphic action going on. Porphyry and jasper are transformed into a kind of potter's clay. Pseudotrappean and magnesian rocks are consumed much like wood in a slow fire, and go to form sulphate of magnesia and other products. Granite is rendered so soft that you may crush it between your fingers, and cut it as easily as bread unbaked. The felspar appears to be converted partly into alum. In the meantime, the boulders and angular fragments brought down the ravines and rivers by the floods, are being cemented into a firm conglomerate so that it is difficult to dislodge even a small pebble, the pebble itself sometimes breaking before the cementation yields.

The thermal action on wood in this place is also highly interesting. In one mound I discovered the stump of a large tree silicified; in another a log changed to lignite or brown coal. Other fragments appeared midway between petrification and carbonization. In this connection, finding some drops of a very dense fluid and also highly refractive, I was led to believe that pure carbon might under such circumstances crystallize and form the diamond. Unfortunately for me however, I lost the precious drop in attempting to secure it.

A green tree cut down and obliquely inserted in one of the conical mounds, was so changed in thirty-six hours that its species would not have been recognized except from the portion projecting outside, around which beautiful crystals of sulphur had already formed.

From the thermal exhalations and the amount of sulphur deposited, it might be supposed that the progress of vegetation would be retarded. But such is not the fact. On the contrary it is greatly facilitated. The *Quercus sempervirens* or evergreen oak, flourishes in beauty within fifty feet of the boiling and angry geysers. Maples and alders from one to two feet in diameter, grow within twenty or thirty feet of the hottest steam pipes. This, however, may be accounted for by the cold surface water flowing from the adjacent mountain. Here too the birds build their nests and "sing among the branches." Multitudes of grizzly bears make their beds on the warm grounds. Panthers, deer, hares and squirrels also take up their winter quarters in the very midst of the geyser mounds. Farther down the stream on the terraced banks of the limpid Pluton, vegetation (as one gentleman has aptly expressed it) "actually runs wild," and the winter months exhibit all the fancied freshness of primeval Eden.

I have now traced the influence of this thermal action from two to three hundred miles on the Pa-

cific coast of California, but only in this place have I been permitted to witness its astonishing intensity. The metamorphic action going on is at this moment effecting important changes in the structure and conformation of the rocky strata. It is not stationary, but apparently moving slowly eastward in the Pluton valley.

I would respectfully invite the attention of geologists to this cause of action, which hitherto has been too little studied and at present is not perfectly understood. The investigation will probably aid in accounting for the existence of many springs independent of ordinary Artesian flow, the formation of deep and varied soils, of beds of sulphur, rock salt, chalk, clay, hydrous iron ore, gypsum, &c., and perhaps extensive sections of breccia and conglomerate like those which traverse our continent.

California, March 17, 1851.

Steam Boilers, and the Causes of their Explosions.

Continued from page 589.

2nd. Explosions from Deficiency of Water.—This division of the subject requires the utmost care and attention, as the circumstance of boilers being short of water is no unusual occurrence. Imminent danger frequently arises from this cause, and it cannot be too forcibly impressed upon the minds of engineers, that there is no part of the apparatus which constitutes the mountings of a boiler which requires greater attention—probably the safety-valves not excepted—than that which supplies it with water. A well-constructed pump, and self-acting feeders—when boilers are worked at a low pressure—are indispensable, and where the latter cannot be applied, the glass tubular gauge steam and water cocks must have more than ordinary attention.

In a properly constructed boiler every part of the metal exposed to the direct action of the fire should be in immediate contact with the water, and when proper provision is made to maintain the water at a uniform height and depth above the plates, accidents can never occur from this cause.

Should the water, however, get low from defects in the pump, or any stoppage of the regulating feed valves, and the plates over the furnace become red hot, we then risk the bursting of the boiler, even at the ordinary working pressure. We have no occasion, under such circumstances, to search for another cause, from the fact that the material when raised to a red heat has lost about five-sixths of its strength, and a force of less than one-sixth will be found amply sufficient to bear down the plates directly upon the fire, or to burst the boiler.

When a boiler becomes short of water, the first and perhaps the most natural action is to run to the feed valve, and pull it wide open. This certainly remedies the deficiency, but increases the danger, by suddenly pouring upon the incandescent plates, a large body of water which, coming in contact with a reservoir of intense heat, is calculated to produce highly elastic steam. This has been hitherto controverted by several eminent chemists and philosophers, but I make no doubt such is the case, unless the pressure has forced the plates into a concave shape, which for a time would retard the evaporation of the water when suddenly thrown upon them. Some curious experimental facts have been elicited on this subject, and those of M. Boutigny, and Professor Bowman of King's College, London, show that a small quantity of water projected upon a hot plate does not touch it; that it forms itself into a globule surrounded with thin film, and rolls about upon the plate without the least appearance of evaporation. A repulsive action takes place, and these phenomena are explained upon the supposition that the spheroid has a perfectly reflecting surface, and consequently the heat of the incandescent plate is reflected back upon it. What is, however, the most extraordinary in these experiments is the fact that the globule, whilst rolling upon a red hot plate, never exceeds a temperature of about 304° of Fahrenheit; and in order to produce ebullition, it is necessary to cool the plate until the water begins to boil, when it is rapidly dissipated in steam.

The experiments by the committee of the Franklin Institute, on this subject, give some interesting and useful results. That committee found that the

temperature of clean iron, at which it vaporized drops of water was 334° Fahrenheit. The development of a repulsive force, which I have endeavored to describe, was, however, so rapid above that temperature, that drops which required but one second of time to disappear at the temperature of maximum vaporization, required 152 seconds when the metal was heated to 315° of Fahrenheit. The committee goes on to state that—"One ounce of water was introduced into an iron bowl three-sixteenths of an inch thick, and supplied with heat by an oil-bath at the temperature of 546°, was vaporized in fifteen seconds, while at the initial temperature of 507°, that of the most rapid evaporation was thirteen seconds."

The cooling effect of the metal is here strikingly exemplified, by the increased rapidity of the evaporation, which at a reduced temperature of 38° is effected in thirteen instead of fifteen seconds.

This does not, however, hold good in every case, as an increased quantity of water, say from one-eighth of an ounce to two ounces, thrown upon heated plates, raised the temperature of its evaporation from 460° to 600° Fahrenheit; thus clearly showing that the time required for the generation of explosive steam under these circumstances is attended with danger, and it may be doubted, whether the ordinary safety valves may not be wholly inadequate for its escape.

Numerous examples may be quoted to show that explosions from deficiency of water, although less frequent than those arising from undue pressure, are by no means uncommon—they are, nevertheless, comparatively fewer in number, and the preventives are good pumps, self acting feeders, when they can be applied, and all those conveniences, such as water cocks, water gauges, floats, alarms, and other indicators of the loss and reduction of water in the boiler.

3rd. Explosions produced from collapse.—Accidents from this cause can scarcely be called explosions, as they arise not from internal force, which bursts the boiler, but from the sudden action of a vacuum within it. In high-pressure boilers, from their superior strength and circular form, these accidents seldom occur, and the low pressure boiler is effectually guarded against it by a valve which opens inward by the pressure of the atmosphere whenever a vacuum occurs. In some cases a collapse of the internal flues of boilers has been known to take place, from a partial vacuum within, which united to the pressure of the steam, has forced down the top and sides of the flue, and with fatal effect discharged the contents of the boiler into the ash-pit, and destroyed and scalded everything before it. A circumstance of this kind occurred on the Thames, on board the steamer Victoria, some years since, when a number of persons lost their lives, and serious injury was sustained in all parts of the vessel within its reach. This accident could not, however, be called an explosion, but a collapse of the internal flues, which were of large dimensions and the consequent discharge of large quantities of steam and water into the space occupied by the engines.

One or two cases which bear more directly on this point are, however, on record, one which took place in the Mold Mines, in Flintshire, was attended with explosion. The particulars, as given by Mr. John Taylor, will be found circumstantially recorded in the first volume of the Philosophical Magazine. This occurrence seems to prove that rarefaction produced in the flues of a high-pressure boiler may determine an explosion. The boiler which exploded belonged to a set of three feeding the same engine; the fuel used was bituminous coal. The furnace doors of all three of the boilers had been opened, and the dampers of two had been closed, when a gust of flame was seen to issue from the mouth of the furnace of these latter, and was immediately followed by an explosion. The interior flue of this boiler was flattened from the sides, the flue and shell of the boiler remaining in their places, and the safety-valve upon the latter not being injured.

Other similar cases of collapse might be stated, but as most of them have been attended by a defective supply of water in the boiler, the plates over the fire having become heated, they can scarcely be included in the category of this class of accidents, and more properly belong to those of which

we have just treated—explosions from a deficiency of water in the boiler.

It is, nevertheless, necessary to observe that cases of collapse should be carefully guarded against, as the great source of danger is in the escape of hot water, which, with the steam generated by it, produces death in one of its worst and most painful forms.

The remedies for these accidents will be found in the vacuum valve, and careful construction in the form and strength of the flues.

4th. Explosions from defective construction.—This is, perhaps, one of the most important divisions that can possibly engage our attention, and on which it shall be my duty to enlarge. In a previous inquiry I have already shown the nature of the strain, and the ultimate resistance which the material used in the construction of boilers, is able to bear. We have not, however, in all cases, shown the distribution and position in which that material should be placed in order to attain the maximum of strength, and afford to the public greater security in the resisting powers of vessels subject to so severe and sometimes ruinous pressure. This is a subject of such importance that I shall be under the necessity of trespassing upon your time, in endeavoring to point out the advantages peculiar to form, and the use of a sound and perfect system of construction.

For a number of years, the haycock, hemispherical and wagon-shaped boilers were those generally in use, and it was not until high-pressure steam was first introduced into Cornwall, that the cylindrical form, with hemispherical ends, and the furnace under the boiler, came into use; subsequently this gave way to the introduction of a large internal flue, extending the whole length of the boiler, and in this the furnace was placed. For many years this was the best and most economical boiler in Cornwall, and its introduction into this country has effected great improvements in the economy of fuel as well as the strength of the boiler. Several attempts have been made to improve this boiler by cutting away one-half of the end, in order to admit a larger furnace. This was first done by the Butterley company, and it has since gone by the name of the Butterley boiler. This construction has the same defects as the haycock or hemispherical and wagon-shaped boilers; it is weak over the fire-place, and cannot well be strengthened without injury to the other parts of the boiler, from the vast number of stays necessary to suspend the part which forms the canopy of the furnace. Of late years, a much greater improvement has, however, been effected by the double flue and double furnace boiler, which is now in general use, and has nearly superseded all the other constructions. It consists of the cylindrical form, varying from five to seven feet in diameter, with two flues, which extend the whole length of the boiler; they are perfectly cylindrical, and of sufficient magnitude to admit a furnace in each. This boiler is the simplest and probably the most effective that has yet been constructed. It presents a large flue surface as the recipient of heat, and the double flues, when rivetted to the flat ends, add greatly to the security and strength of those parts. It moreover admits of the new process of alternate firing, so highly conducive to perfect combustion, and the prevention of the nuisance of smoke.

To be continued.

Coal Mines in Tennessee.

We copy the following account of the coal trade of Eastern Tennessee, from the Chattanooga Advertiser:—

"Few persons are probably aware of the amount of coal brought to this place either for domestic consumption or for shipment to points below. We learn from Messrs. Vaughn and Thomaion, proprietors of the coal yard in this place, that they are now sending down the railroad between three and four hundred bushels daily. Most of this is taken by the proprietors of the Etowah Iron Works. Several of the Georgia railroad companies also take a large amount. The demand is constantly increasing, and the trade is susceptible of an almost indefinite expansion; and when adequate facilities shall be afforded for carrying it on, it will take rank as a leading branch of business at this point.

The mine from which this coal is obtained is in Roane county, about 80 miles up the river. The bed is inexhaustible, and the expense of getting out the coal is comparatively small, so that it can be brought here and placed upon the cars at 15½ cents per bushel, and yield fair profits.

The proprietors now employ between 50 and 60 men. They contemplate placing a "Steam Tug" upon the river, for the purpose of towing their coal boats to and from the mine. This will so shorten the time and diminish the expense of transporting their coal, that they will be able to do a much larger business and with greater profits than at present.

In addition to this, the iron manufacturing company of this place, possess one of the best coal mines in the world, where they obtain their own supplies and from which an immense amount may be thrown upon the market as soon as the avenues of communication shall be sufficiently perfected, and its shipment to distant parts made profitable. The coal of East Tennessee is destined to become one of her greatest sources of wealth, and it gives us pleasure to bear testimony to the enterprise that is contributing to hasten on this result."

Operations upon the Rocks in Hurl-Gate Channel.

The work is now in successful operation for removing the rock obstructions from Hurl-Gate.

An iron float has been constructed, composed of two wrought iron cylinders, thirty inches in diameter, and forty feet long, tapering at each end. They are placed twenty-two feet apart, and confined in that position by large timbers. From the bow and stern large timbers extend eighteen feet, terminating in a point, making the float seventy-two in length. This float is now moored by four anchors, one at each quarter, within sixty feet of Pot Rock.

The first time the shaft was anchored upon Pot Rock three collisions with vessels passing the gate took place, one a day, the last tearing the float from its anchorage, and sending it adrift. Since it anchored the second time, but one collision has taken place.

Mr. Maillefert intended to anchor the float upon Pot Rock, to erect a large iron tripod, and drill the rock to the depth of thirty feet, by making a shaft eight inches in diameter, and firing the charge by a galvanic battery; but the difficulty of maintaining a safe anchorage on the rock has induced him to change his plan. He was provided himself with one hundred casks of Whipple's best glazed cannon powder, and commenced operations by firing the charges under water upon the surface of the rock. Four charges have been fired, which have been eminently successful. The first charges weighed eighty each, and the last sixty-three lbs. About four feet only of Pot Rock were blown off by the first two charges. The fragments of the rock brought up by the grappling, immediately after the blast, were still warm.

The charge is enclosed in a tin canister, strongly lashed, to which two iron rings are attached. A pole 20 feet long is employed, with an iron chisel in the end. The operator with this seeks a crevice into which he drives it; he then places the rings of the canister on the pole and lowers it to the surface. A bag of sand is affixed to add to the weight of the canister. A copper wire is attached to the canister, which communicates by a wire of platinum with the priming of the charge. Mons. Maillefert stations his battery on the float 60 feet from the rock, and from that he fires the charge. The water rises in a column of from 25 to 30 feet.

When the fourth charge was upon the rock, the steamer Hero came near, and had passed it less than a minute when it was fired; affording the passengers an excellent opportunity of seeing an explosion without danger, as the force of the explosion is downward. The canister is about 10 feet deep in the water. When charge is fired the water operates as a fulcrum.

An iron tripod of about four tons weight, constructed with slides, according to the suggestion of Mr. Chas. J. Shepherd, will be placed upon Way's Reef, and operations immediately commenced for drilling that rock to the depth of 24 feet. The shaft to be 8 inches in diameter, which, when charged, will be fired by a voltaic battery.

Banks in the United States.

The Boston Banker's Magazine gives a table showing the number, capital and condition of the Banks in all the States of the Union. Total No. of Banks 863; circulation, \$120,505,400; specie, \$41,446,000; capital, \$230,897,500. New York leads all other States, having 125 banks, with a circulation of \$18,000,000, while New York city has 28 banks and \$6,400,000 circulation. Massachusetts has 102 banks, with a circulation of \$9,600,000—Boston 30, with a circulation of \$6,000,000. Ohio stands next to New York, having 57 banks, with \$10,366,000 circulation. Her specie basis, however, is but \$2,780,000, while New York city banks have \$10,740,000 in specie. Boston has but \$2,400,000 of specie. Virginia has a bank circulation of \$7,000,000, and \$2,300,000 specie.—Pennsylvania about the same as Virginia. Philadelphia \$4,130,000 circulation and four millions of specie. Baltimore has \$2,068,000 circulation, \$2,127,000 specie, and its banking capital is set down at less than two millions. Louisiana, 5 banks, with \$4,200,000 circulation, \$7,300,000 specie and \$13,267,120 capital.

The Boston papers contain some curious and quite interesting statistics respecting the movements of the population of that city and its vicinity. On Saturday last 55 members of the police, under the direction of the chief marshal, took their respective stations at half-past six o'clock, A.M., and continued without intermission to keep regular count, until 7½ P.M., a period of thirteen hours.

During that time 41,729 persons came into the city, and 42,313 persons went out. This difference between the number entered and returned, can be accounted for from the fact that on Saturdays many leave for the country to pass the Sabbath. The number of vehicles which entered the city by the various routes, not including those which came from East or South Boston, numbered 6,626. The number that went out 7,063. The number of persons in the vehicles entering 14,942. The number of persons on foot entering 14,310—went out 12,887. The number by the passenger trains and freight trains, in, 12,271; out, 12,250.

During the day the arrivals and departures of railroad trains were as follows:—The passenger railroad trains which departed were 120, comprising 872 cars, and carrying 12,952 passengers. The inward passenger trains were 116, comprising 1,132 cars, and 11,963 passengers. The freight trains departed were 38, comprising 1,332 cars; and the freight trains arrived were 39, comprising 1,138 cars.

RECAPITULATION.

	Went out.	Came in.
Per passenger trains, 120	12,952	11,963
" Freight " 307	307	308
" Vehicles..... 15,964	15,964	14,942
On Foot..... 12,887	12,887	14,310
On Horseback..... 124	124	127
With Handcarts.... 79	79	79

42,313 persons. 41,729 persons.

Louisville and Nashville Railroad.

In view of the recent vote of the people of Louisville, authorizing the City Council to subscribe \$1,000,000 to the Louisville and Nashville railroad the Courier says:

"To Kentucky, to the Union, we say that the Louisville and Nashville railroad will be commenced and completed as rapidly as abundant means, and the aroused energies of our enterprising city will warrant. If the interior counties will respond to the spirit of Louisville, the locomotives will be running from Louisville to Nashville before the 1st day of January 1855. In less than two years from this day, the extension of the Jeffersonville railroad will be completed, and passengers may go by railroad from Louisville to every important city North, South, East or West.

Boston and Maine Railroad.

The following is an abstract of the report submitted by John Howe, Esq., the president of this company, at the annual meeting of the stockholders at Exeter, N. H., on the 10th inst. —

The amount paid for construction account in the six months ending June 1st, 1851, was \$46,885 89
Paid for do. in June, July and August. 26,373 84
The whole amount of construction account to the present time, is.....\$4,094,866 32

The liabilities of the corporation are stated as follows:—

Bonds.....	\$3000 00
Not payable.....	7000 00
Unpaid dividends.....	3837 50
do. do. payable July 1, 1851.....	145,449 50

\$159,287 00

Estimated amount due for land, bridges &c.....	90,000 00
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Amount paid since June 1, 1851, for construction, which was then outstanding.....	6,386 40
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255,673 40

In addition to above, \$150,000 are due for state loan, but not payable for several years.

The assets of the road are \$345,997 45. The expenses for the six months have been \$147,285 02, and the earnings (including \$7801 08 from the Portland, Saco and Portsmouth road) \$295,679 24. The earnings and expenses of the road for the months of June, July and August, 1850 and 1851, were as follows:—

Earnings.

	1850.	1851.
June.....	\$48,245 46	\$53,194 64
July.....	53,797 29	57,262 73
August.....	56,960 75	54,253 99*

Expenses.

	1850.	1851.
June.....	\$21,092 23	\$23,598 88
July.....	23,446 79	23,810 80
August.....	26,478 72	25,961 95

The whole line of the road has been recently examined, and found to be in a greatly improved condition. The portion between Boston and Lawrence, in all its appointments, is not surpassed by any railroad in New England, and that below North Andover, where the double track terminates, is being renewed by liberal outlays. The buildings along the line are generally adapted to the existing business of the road, except at Haverhill, Exeter and Plaistow, where the board will cause improvements to be made as soon as the prosperity of the company will render the expenditure expedient.

The amounts which have been paid on account of goods burnt in the freight house in November, have reached the sum of \$38,568 53; less received for insurance \$10,000, and very few of the acknowledged claims remain unpaid for property outward bound. These amount to \$1,163 26.

The board have the satisfaction to state that no claims for personal damage are known to exist at this time.

Three important suits have been determined recently in favor of the road. The first was the action of the Boston and Lowell road, instituted by reason of this road's asserting its freedom from tribute to that road. The second was that of Ebenezer Smith, for damages occasioned to his property by the occupancy of a part of Market street, in Boston for the passenger station. And a third was that of an individual claiming for the loss of a coat and

*Estimated—the earnings of this month have been somewhat reduced by the accident to the steamer Governor.

umbrella, which was ordered to be sent by a passenger train, unaccompanied by any person; in this case the superior court ruled that railroads were not liable as common carriers, in passenger trains, for merchandise or baggage, unless accompanied by a person, and thus settled a principle of great consequence.

In regard to the business of the road, it may be gratifying to the stockholders to know that in each year the earnings have been increased over those of the preceding year, and that its prospects are sufficiently encouraging to justify the expectation of an increase in future years. In evidence of this statement the earnings for the three past years and parts of years are subjoined:—

	1848.	1849.
Gross earnings.....	511,627 89	522,335 51
Expenses.....	264,534 58	283,510 71

Net earnings.....	247,093 31	238,824 75
Earnings 1st ½ yr to June 1.....	223,470 11	223,470 11
Expenses.....	114,509 91	114,509 91

Net earnings.....	108,960 21
Earnings June, July, August.....	139,013 98
Expenses.....	86,523 82

Net earnings.....	52,490 15
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	1850.	1851.
Gross Earnings.....	504,963 45	
Expenses.....	289,478 02	

Net earnings.....	305,485 43
Earnings 1st ½ yr to June 1.....	271,870 79
Expenses.....	139,029 29

Net earnings.....	132,841 50	148,394 26
Earnings June, July, Aug.....	157,943 47	164,711 36
Expenses.....	71,721 95	73,371 63

Net earnings.....	86,221 52	91,339 73
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There is insurance on the property of the corporation to the amount of \$225,700. Five fatal accidents have occurred on the road since December. The Sabbath train was discontinued in November last. Abuses had grown up under its management requiring a remedy, and on applying that, it failed of support.

Pennsylvania.

York and Cumberland Railroad.—The stockholders of this company held a meeting at Baltimore on the 8th inst., on which occasion Eli Lewis, Esq., president of the corporation, submitted the third annual report, detailing the condition and operations of the road since its opening. From this document it appears that the expenditures on account of construction, prior to January 9, 1851, were \$524,117 31. The amount paid for construction since that period was \$165,345 28; making the total amount paid on account of construction to 1st September, 1851, \$689,462 59. To finish the construction of the road there will be needed the further sum of \$6,711 20. There may be some unsettled items, and the report therefore puts down the whole cost of construction at \$700,000, being at the rate of \$26,923 07 per mile. The liabilities of the company are set down at \$8,823 31; and its available means are stated to be \$19,207 23.

In addition to this, the company has a considerable amount of property, such as working stock, tools and materials for construction, which cost the sum of \$9,290 78.

The company has also expended for real estate the sum of \$12,729 35, a portion of which will not be wanted, and which can be sold at an advanced price.

The road was received from the contractors in

January, 1851. It was then in an unfinished state, and the company immediately commenced the construction of the road, and to place it in a proper and substantial condition.

This road was opened for trade and travel on the 3d of February last. Its gross earnings, including rents and United States Mail for six months, beginning with February and ending with July, amount to.....\$17,675 45

From this we deduct the following:

Cost of working the road for six months.....	\$7,278 84
Cost of repairs for road for six months.....	4,811 90
Salaries of officers for six months.....	1,179 99
Incidental expense for six months.....	733 80
	<hr/> \$14,004 62

Nearly the whole amount of \$4,811 90, charged for repairs, ought properly to be debited to construction,—and if the road, when opened, had been finished, the net earnings for the first six months would have been about \$8,000.

This result cannot be considered as any criterion of what will be the future net earnings of the road. The cost of repairs has been heavy owing to the unfinished condition of the road when opened and the unavoidable necessity of large expenditures for this item.

The road has also been subject to many disadvantages since it was opened. At first it was worked for a short time by the Cumberland Valley railroad company, who agreed to terms more favorable than the Baltimore and Susquehanna railroad company did. The Cumberland Valley railroad company proved to be unable to work the road, and it was found to be to the interest of both companies to cancel the agreement made between them. When this result was found to be inevitable, an arrangement was made with the Baltimore and Susquehanna railroad company to work this road for twelve months, although upon terms less favorable than those agreed to by the Cumberland Valley railroad company.

When this arrangement was entered into, it was expected that the York and Cumberland road would be placed upon terms of equality with the Wrightsville road. For several months this was not done. The report says:—

“Our road was opened in February. The Baltimore and Susquehanna railroad company, instead of placing our road upon as favorable a footing as the Wrightsville road, continued to charge for goods destined for our road as much between Baltimore and York as those destined for the Wrightsville road paid the whole distance to Wrightsville.—Thus substantially and in effect making us pay for twelve miles of a road, no portion of which was used by us, and adding in the competition for business to which we were subject, twelve miles to our road. The discrimination has been continued during the six months of the working of our road.—Now mark the effect. The entire freight business or nearly so, between Harrisburg and Baltimore, has been transported on the Wrightsville route.—Our road has for these six months had little or none of this business; and this discrimination has also lessened the amount of business on our road from the Cumberland Valley, has seriously operated, as we believe, to decrease the trade of Baltimore and increase that of Philadelphia, the rival of Baltimore for this business.

When the York and Cumberland railroad company was first started it was believed that its connexion at Harrisburg with the Pennsylvania railroad and with the Pennsylvania canal, owing to its advantage in length over the Wrightsville route, and the superior facilities which it was supposed it

would furnish, would enable it to cause the trade to be diverted at Harrisburg, and thence by the York and Cumberland railroad and the Baltimore and Susquehanna railroad to Baltimore. This was our hope and expectation, and this the strongest motive for building our road. When, therefore, our road was put into operation, we exerted every effort in our power to induce the Baltimore and Susquehanna railroad company to remove all discrimination and give our road an opportunity to show what it could do upon fair and equal terms of competition with the Wrightsville road. All these efforts were vain until the month of June last, when the Baltimore and Susquehanna railroad company applied to the Mayor and City Council of Baltimore to approve of a law authorizing that company to borrow \$150,000. At this time, and when the Council was about to adjourn, some of the stockholders of our company, who desired that all differences between the companies should be settled, interposed their good offices and an agreement was made between the companies by which this discrimination was removed, and the two works, viz., the York and Cumberland railroad and the Wrightsville road were agreed to be placed upon terms of equality. This agreement was entered into on the 17th day of June last, but was not carried out by a change of tolls until about the 21st of August, when it was at last put in force."

There is reason to believe that the effect of the removal of this discriminating policy will be to largely increase the business of the company, and that the next return will show a corresponding amount of profits.

Connecticut.

Hartford and New Haven Railroad Company.

The annual meeting of the stockholders of this company was held in Hartford on the 10th instant. The receipts for the year ending Aug. 31, 1851, were \$556,004 58; net earnings, \$286,389 29. During the past year 446,128 passengers have been transported over the road—showing an increase of 50,253 over the preceding year. The number of miles run by passenger and freight trains, was 242,486—of gravel and wood trains, 11,405—making a total of 253,891 miles. The double track of eight miles in length between Berlin and Meriden has been completed, and this will be of great service to the future business of the road. During the past year, the balance of the capital stock of the company has been filled up to the amount authorized by its charter. The premium realized from the sale of the reserved shares, amounted to the sum of \$65,486 05—and the company is the gainer of this amount by having reserved the issue of the balances of its capital until the past year. The capital, now complete, amounts to \$2,350,000. The floating debt of \$75,758 57 reported at the last annual meeting has been paid. The directors have declared a semi-annual dividend of five per cent. payable on the 1st of October. This year a dividend of 15 per cent. has been made. The stockholders re-elected the old Board of Directors. At a subsequent meeting of the Directors, Charles F. Pond was re-elected President; Jas. H. Wells, Treasurer; and Horatio Fitch, Secretary.

Mississippi and Atlantic Railway.

The *Indiana Sentinel* says,—"Judge Underwood, of Illinois, has decided on a proceeding in the nature of a *Quo Warranto*, that this railroad company has the right to construct the road from St. Louis to Terre Haute without the sanction of any special act of the Illinois Legislature. The only power wanting is the right of way, there being no provision to condemn the lands for the road. This is a most important decision, and will secure the construction of this link in the great chain of eastern railway at an early day."

Indiana.

Lawrenceburg Railroad.—The following is a brief abstract from the report of the condition of the affairs of this company, submitted at the late meeting of the Board of Directors, in Greensburg, on the 1st instant:—

Entire cost of the work, from Lawrenceburg to Indianapolis, 90½ miles, including depots, water stations, engines, and rolling stock, complete	\$1,025,000 00
Amount of stock now subscribed, not including that taken at Indianapolis, the amount of which was not then ascertained,	459,799 00
Whole amount of work put under contract	250,578 86
Amount of work completed	93,026 87

The above amount does not include the contracts for timber or for cross-ties, some of which were closed during the meeting, and which now cover the line from the river to Greensburg, and are all payable in stock, except one-half of the portion required on the first seventeen sections which is half cash.

The amount of work yet to be done to complete the grade is as follows, including the usual percentage for contingencies:

On the first division 17 miles	\$32,558 22
On the second division, 25 miles to Greensburg	75,349 74
On the third division, 21 miles to Shelbyville	55,893 71
	\$163,801 67

—Of which \$85,635 68 is payable in cash, and \$78,165 99 in stock and real estate.

The iron for the first division, as also the necessary motive power and other machinery, are on their way to the west, and the company will commence laying track on the 1st of October. The lower twelve miles are now ready, the thirteen or fourteen miles will be graded by the 15th of October, and the residue in the course of the winter, so as to completed the track by spring.

Ohio.

Cleveland and Pittsburgh Railroad.—About seventy miles of this work is finished, from Cleveland to Alliance, and the rest is in rapid progress of completion to Wellsville. As yet the regular cars run only to Ravenna, but it is the intention of the directors to have the entire track to the Ohio completed and cars running through the whole line this fall. From Wellsville to Beaver also the work is in progress.

During the week ending September 6th, 3373 passengers passed over this road. The Plaindealer of the 5th inst., says,—"The business over the Cleveland and Pittsburgh railroad continues to increase daily. At New Franklin, a thriving town on the line in Stark county, they are building large and commodious warehouses for the purpose of receiving wheat for the Cleveland market which has been sent to Massillon heretofore. Cleveland will receive over this road, from this town alone, some 400,000 bushels per annum. The farmers in this section will get the Cleveland prices for their wheat, less freight only, which is five cents per bushel better than the Massillon market. This company have transported over their railroad for the Pittsburgh and Ohio road 400 tons of railroad iron. The road is running the entire length, with the exception of some twenty-five miles which will be completed within 50 days. We learn that 1,500 passengers passed over this road one day this week, bringing the receipts, freight included, up to \$3,000."

Tennessee.

East Tennessee and Virginia Railroad.—We have received the first annual report of Lloyd Tilghman, Esq., Chief Engineer of this company, submitted to the President and Directors. Three routes were surveyed from the Virginia line to Knoxville, as follows:

The first, or northern route, length 125 miles, would cost \$1,239,000.

The middle route, length 125 miles, would cost \$1,227,400.

The southern route, length 128 miles, would cost \$988,000.

It will be seen that although the southern route is three miles longer than the others, it will cost \$240,000 or \$250,000 less than either of them.—The character of this route is much better, as regards grades, curves, &c. In addition to these considerations, is the still greater one that the business which the southern route would command, would be of vastly greater extent and importance than that of either of the other routes.

The final location of the road may be assumed to be nearly as follows: beginning at or near King's Meadow, on the Virginia line, thence to Middletown on Holston river, Lacy's on Watauga, by Brush creek, &c., to Jonesboro, thence by Urbana Meeting-house, Rheatown to Greenville, thence by way of the Blue Spring to Bull's Gap, New Market Valley, to Knoxville.

The superstructure and equipment are estimated at	\$1,228,628 57
Which added to the above estimated cost of graduation and masonry	988,000 00

Would make the total cost of the road

—being an average cost per mile of about \$17,300.

Canada.

Railroad from Quebec to Melbourne.—We have just seen in the *Quebec Gazette*, the report lately made by A. C. Morton, Esq., upon the survey of the line for this important road, designed to connect Quebec with the St. Lawrence and Atlantic railroad at Melbourne or Richmond. As a means of connecting Quebec with the Atlantic and thus constituting a very important tributary to the great line between Portland and Montreal, this projected road has been regarded with great interest.

The distance is from 90 to 100 miles, dependent somewhat upon a choice of routes in particular parts. The survey, which was made by others, under the direction of Mr. Morton, was of a preliminary nature only, and the results are but approximations. As we have not the means of illustrating these results by reference to minute maps of the country, we are the less able to appreciate or to exhibit the merits of them. It seems the surveying parties were instructed to proceed upon a plan which involves the crossing of the St. Lawrence, at points some miles above Quebec,—thus contemplating in fact two distinct pieces of road, separated by the river. We are not apprised of the reasons which induced this mode of procedure. The report intimates that a practical line might be found so as to admit of crossing the river opposite Quebec itself.

The actual descent to the bed of the St. Lawrence involves very considerable engineering difficulties—the immediate banks being high, and penetrable only by the courses of narrow and circuitous streams. Very considerable grades would be required for this purpose. There is no difficulty, however, greater or more objectionable than what has been encountered upon many important and valuable American lines.

Estimates are given by the engineer, for the cost of the work, which show that it can be constructed within very reasonable limits of expense.

We hope this work may command such an interest in Quebec, as will secure further and more minute surveys. In that case, more favorable results, in anticipation of construction, would undoubtedly be attained, and the work brought to such

a condition of promise, as to insure its immediate commencement and early completion.—*Portland Advertiser.*

American Railroad Journal.

Saturday, September 30, 1851.

Mr. Pooa is still prevented by illness from attending to his accustomed duties.

The Great Railroad Jubilee at Boston.

This event, looked forward to with so much interest by our Boston neighbors, and the citizens of the Bay State generally, has come off with an éclat even surpassing the expectations of the most sanguine of its projectors. The Editor of this Journal being seriously indisposed and not having a reporter on the spot, we shall make but few remarks on the subject this week, but promise a more extended account in our next. Among the distinguished guests of the city of Boston, present, we notice the President of the United States, Mr. Webster, and several other members of the cabinet, and Lord Elgin, Governor General of Canada, together with a large number of the most eminent men from various parts of the Union and the British Provinces. The speeches and other proceedings, which fill a very large space in the daily papers, we shall endeavor to compress next week into a form better suited to the Railroad Journal. Our readers will therefore excuse us for not filling our columns with details, which are better adapted to those of the daily press. It is a subject that will bear keeping.

Maine.

York and Cumberland Railroad.—Contractors will find in our advertising columns a call for proposals for completing the line of this road. The directors, as we learn from the Portland Advertiser, have been diligently at work since the annual meeting in the preparatory measures required to carry forward the work to completion.

The road from Portland to Gorham is doing a fine business, and assurances for a successful prosecution of the work are more flattering than at any previous period.

Fair of the Maryland Institute.

It will be seen by an advertisement on another page, that the fourth annual exhibition of American manufactures, by the Maryland Institute for the promotion of the mechanic arts, will be opened in Baltimore on the 20th of next month. We are happy to learn from the Baltimore papers that the splendid Hall now in course of construction is rapidly advancing towards completion, and that it will be fully ready in time for holding the approaching Annual Fair within its ample walls. When fully completed, the new Hall will take rank amongst the most beautiful and substantial public buildings of the monument city. It is 355 feet in length by 60 in breadth, with an average height of 68 feet, constructed at an expense of over \$70,000, and affords every facility for displaying the various productions of American industry and skill, to the best advantage.

It should be borne in mind that all articles intended for exhibition at the coming fair, must be deposited on or before the 16th of October.

Massachusetts.

Charles River Railroad.—The Boston Post states that the grading on this road is going on steadily. A section from Cyprus street up by Bradley's hill in Brookline is nearly ready for the rails, and is the nearest to the city of any work on the route.

South Ohio Railroads.

We understand that on the 3d September, the Hillsborough and Cincinnati railroad company, let the grading and masonry of their road, Eastward of Hillsborough, to a point near the crossing of Paint Creek.

This is the first step upon an independent line across Southern Ohio to Belpre, the terminus lately abandoned by the Marietta and Cincinnati company.

This latter company, therefore, find that the first effect of their embarkation upon the Philadelphia route, has been to raise up a competition, which appears determined to run a rival line across the state a few miles south of them, and in many places parallel, at a short distance.

Whatever may be the result of the strife between these competing lines—and on all ordinary principles it must be unfavorable to both—it seems, nevertheless, to be a step of self-preservation on the part of the Hillsborough company, abandoned as they were, and threatened to be crushed by their opponents.

Virginia.

South Side Railroad.—We would invite the attention of contractors to the advertisement on another page, from the chief engineer of the South Side railroad, requesting proposals from railway contractors for grading about thirty miles of this road, commencing at Farmville and extending westward—the work to be let in the town of Farmville, on the 15th day of October. This letting will comprise rather more than half the distance between Farmville and Lynchburg, and the Petersburg Intelligence thinks the whole line from that city to Lynchburg, will be finished in the course of eighteen months. When finished, it will also place Richmond in railroad communication with Lynchburg.

Orange and Alexandria Railroad.—The third section of the Orange and Alexandria railroad is about to be given to contractors; it will complete the line to Gordonsville. The branch road to Warrenton of 8½ miles is also about to be let to contractors.

Illinois.

Galena and Chicago Railroad.—The cars now run on this road to Huntley's, thirteen miles beyond Elgin, and fifty-two miles from Chicago. In two or three weeks it is expected that Marengo will be reached, and by the middle of November, that the cars will run to Belvidere, thirty-seven miles beyond Elgin. The grading on this section is all completed, and the work of laying the track is rapidly progressing. The grades are easy on the whole line.

Alton, Mount Carmel, and New Albany Railroad.—The president of this company has advertised for proposals for the graduation of a portion of the road upon each side of the Wabash, at Mount Carmel, and also for the branch of said road beginning at Illinois town, and running eastwardly to the Central railroad, via Caseyville, Lebanon and Carlyle. This branch is doubtless intended to do away with the necessity of constructing the railroad from Illinois town to Vincennes.

Illinois.

Northern Cross Railroad.—Within the past few weeks, 28 miles of the Northern Illinois Cross railroad, running East from Quincy, have been put under contract, to be completed in running order by the 4th of July next. The company have disposed of \$100,000 of the city bonds of Quincy without trouble.

Kentucky.

Maysville and Lexington Railroad.—Henry Waller, Esq., has been elected president of the Maysville and Lexington railroad company, in place of Gen. Richard Collins, resigned.

Stock and Money Market.

There has been but slight change in the money market during the past week. First class paper is in good demand, and the supply being moderate, purchasers are obliged to offer better terms; other descriptions are plenty. There is some prospect for improvement, yet while capitalists can employ their money at the present high rates upon good paper, there will not be much enquiry for stocks; and the mercantile world have sufficient employment for theirs in the prosecution of their regular business. Under these circumstances it is advisable to keep bonds of new works out of the market, as they could only be disposed of at serious discount, which might tend to affect their future credit injuriously. Considerable quantities of cotton are now going forward to tide-water, the crop being about twenty days earlier than last year. This will bring a supply of Southern bills sooner than has been anticipated, which will afford some relief in the exchange market.

The Evening Journal gives the annexed statement of the quantity of flour, wheat, corn and barley, left at tide water during the 2d week in September in the years 1850 and 1851, as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1850...	115,825	138,582	77,357	124,416
1851...	96,368	57,169	245,435	47,357

Dec.... 19,457 81,413 Inc. 168,078 de. 77,059

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 14th Sept., inclusive, during the years 1850 and 1851, is as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1850...	1,363,152	980,147	2,669,642	328,092
1851...	1,980,100	1,504,018	5,666,140	224,920

Inc.... 616,948 523,871 2,996,498 dec. 103,172

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 7th Sept., inclusive, during the years 1849 and 1851, is as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1849....	1,501,120	1,052,853	3,897,686	117,494
1851....	1,980,100	1,504,018	5,666,140	224,920

Increase. 478,980 451,165 1,768,454 107,426

By reducing the wheat to flour, the quantity of the latter left at tide water this year, compared with the corresponding period of last year, shows an increase of 721,722 bbls. of flour.

Eric Canal.—The amount received for tolls on all the New York State canals during the 1st week in September, is.....\$102,701 94
Same period in 1850..... 104,621 57

Increase in 1851..... \$1,919 63

The aggregate amount received for tolls from the commencement of navigation to the 7th September inclusive, is.....\$2,040,950 11
Same period in 1850..... 1,771,427 21

Increase in 1851..... \$269,522 90

Galena and Chicago Union Railroad.—The receipts of this railroad for the first four months of their financial year, exceed the estimates \$10,000. Earnings for August, \$12,109 13. In August of last year, the receipts amounted to \$7,399 51. Increase, \$4,709 62, or 65 per cent.

Baltimore and Ohio Railroad.—The receipts of this railroad for the month of August have been as follows:

	For passengers.	For freight.
Main Stem.....	\$33,417 51	\$69,254 80
Washington Branch....	20,268 57	3,905 27

Total..... 53,686 08 73,160 07

Making an aggregate of \$102,672 31 on the Main Stem, and \$24,173 84 on the Washington Branch—the total being \$126,846 15.

The above, compared with the corresponding month of last year, shows a decrease of \$2,651 80 on the Main Stem, and 2,757 63 on the Washington Branch.

Little Miami Railroad.—The receipts for the two past weeks were..... 22,118
Last year, same time..... 18,257

Increase.....\$3,861

Cheshire Railroad.—The receipts for the Cheshire railroad for the first eight months of 1850 and '51, were as follows:

	1850.	1851.
January.....	13,159 75	14,687 82
February.....	11,705 07	15,008 84
March.....	14,277 52	16,739 35
April.....	15,325 55	19,345 53
May.....	14,951 89	18,187 82
June.....	15,262 91	18,044 26
July.....	16,962 36	18,043 15
August.....	23,131 20	26,086 25

\$124,776 55 \$146,143 02

Madison and Indianapolis Railroad.—The receipts for the week ending Aug. 30 were..\$6,792 43
For the week ending Saturday, Aug. 31st

1850..... 4,235 65

Excess..... 2,556 78

Cleveland and Pittsburgh Railroad.—The business of that portion of the Cleveland and Pittsburgh railroad between Cleveland and Ravenna, 38 miles, for 5½ months, foots up as follows:—

Whole number of passengers 44,836....\$33,141 30
Whole amount of freight..... 19,464 68

Gross earnings..... 52,605 88
Expenses for the same period..... 17,536 00

Net earnings..... 35,070 88
Ten per cent per annum upon \$700,000
(the cost of the portion referred to)... 32,084 00

Leaving a surplus of.....\$2,986 88

Louisville and Frankfort Railroad.—The receipts on the Louisville and Frankfort railroad for the first seven days in this month, for passengers alone, exceed \$2,800, being a traction over \$400 per day.—The business of that road appears to be increasing daily.

Welland Canal.—The business of the Welland Canal this season is much increased over last year. During the month of August, 465 vessels passed through, nearly double the number that passed in the same month last year.

Imported Merchandise.—An opinion has been expressed that the importations of foreign merchandise this year were much less than those of the preceding year. The following authentic facts are from the National Intelligencer:—

During the fiscal year ending the 30th of June, 1851, the gross receipts from customs were about \$50,000,000.

From the 1st of July to the 6th of September, the receipts from this source will compare as follows:
1850, about.....\$12,200,000
1851, about..... 11,700,000

Decrease.....\$500,000

There is a decrease in 1851 during this period at

New York of about \$900,000, and an increase at each of the other ports.

At the ports of New York, Boston, Philadelphia and Baltimore, during the first week in September, the receipts were as follows:—

1850.....	\$843,543
1851.....	946,558

Illinois and Michigan Canal.—The amount of tolls collected during the month of August, was \$20,346 14. Total receipts from the opening of navigation to the 1st of September, 1851, were \$112,437 25.

Morris Canal.—The receipts for the week ending September 7th, were \$4,796, showing an increase of \$3,946.

Coal Trade.—The Lehigh Navigation Company brought down, for the week ending on Saturday last, 31,997 tons, and for the season, 675,445 tons.

The Reading railroad company brought down, for the week ending on Thursday, 39,425 tons, and for the season, 1,215,538 tons. The Schuylkill navigation brought down for the week 19,067 tons, and for the season 397,082 tons. The aggregate tonnage for the week is 90,489 tons, and for the season 2,288,065 tons. The activity of the trade is not confined to the carrying companies, but the same feeling is manifested in all the markets for anthracite coal throughout the Union.

Railway Share & Stock List;

CORRECTED WEEKLY FOR THE

AMERICAN RAILROAD JOURNAL.

NEW YORK SEPTEMBER 20, 1851.

GOVERNMENT AND STATE SECURITIES.

U. S. 5's, 1853.....	100½
U. S. 6's, 1856.....	105½
U. S. 6's, 1862.....	110
U. S. 6's, 1862—coupon.....	113a114
U. S. 6's, 1867.....	115½
U. S. 6's, 1868.....	116
U. S. 6's, 1868—coupon.....	122½
Land Warrants.....	140a145
Arkansas 6's.....	52a53
Alabama 5's.....	91a92
Indiana 5's.....	79
Illinois 6's, 1870.....	65a68
Kentucky 6's, 1871.....	105a106
Massachusetts sterling 5's.....	105a106
Massachusetts 5's, 1859.....	100½
Maine 6's, 1855.....	103
Maryland 6's.....	102½
Michigan.....	—
Mississippi.....	—
New York 6's, 1865.....	117a118
Ohio 6's, 1860.....	109½
Pennsylvania 5's.....	91

RAILROAD BONDS.

Atlantic and St. Lawrence, 6 per cent.....	85
Baltimore and Ohio, 1867.....	94½
Boston and Providence 6's, 1855.....	101
Boston and Worcester 6's, 1855, convertible.....	107½
Bost., Concord and Mont. 6's, 1860, mortgage.....	87½
Cheshire 6's, 1860.....	91½
Connecticut River 6's, convertible.....	98
Erie 7's, 1859.....	98
Erie 7's, 1868.....	108½
Erie income 7's.....	92
Hudson River 7's, 1853.....	101½
Michigan Central, convertible, 8's, 1856.....	104½
New York and New Haven.....	100½
Norwich and Worcester, mortgage, 1860.....	80a85
Old Colony, 1854.....	97½
Ogdensburg 7's, 1859.....	94
Portsmouth and Concord.....	80a85
Passumpsic 6's, 1859.....	94½
Rutland 7's, 1863.....	97
Reading mortgage, 1860.....	80
“ “ 1870.....	75
Sullivan, mortgage 6's, 1855.....	75
Vermont Central 6's, 1852.....	93
“ “ 6's, 1856.....	88
Vermont and Massachusetts 6's, 1855.....	85

RAILROAD STOCKS.

[CORRECTED FOR WEDNESDAY OF EACH WEEK.]

	Sept. 17.	Sept. 10.
Albany and Schenectady.....	89½	—
Atlantic and St. Lawrence.....	60a65	—
Androscoggin and Kennebec.....	30a35	—
Boston and Maine.....	103	104½
Boston and Lowell.....	109	109
Boston and Worcester.....	101	100½
Boston and Providence.....	84½	87
Bost., Concord and Montreal.....	40	—
Baltimore and Ohio.....	71½	—
Baltimore and Susquehanna.....	36	—
Cheshire.....	53	—
Cleveland and Columbus.....	—	—
Columbus and Xenia.....	—	—
Camden and Amboy.....	—	—
Connecticut River.....	60	—
Delaware and Hudson (canal).....	—	—
Eastern.....	95	96
Erie.....	79	78
Fall River.....	92½	92½
Fitchburgh.....	108½	108½
Georgia.....	—	—
Georgia Central.....	—	—
Harlem.....	68½	68½
Hartford and New Haven.....	124	—
Housatonic (preferred).....	52	—
Hudson River.....	71½	71½
Kennebec and Portland.....	50a55	—
Little Miami.....	—	—
Long Island.....	15½	14½
Mad River.....	—	—
Madison and Indianapolis.....	92	—
Michigan Central.....	104	104
Montgomery and West Point.....	—	—
Michigan Southern.....	—	—
Manchester and Lawrence.....	97	89
Morris (canal).....	14½	15½
New York and New Haven.....	106½	106½
New Jersey.....	133	—
Northern.....	66	66½
Nashua and Lowell.....	107½	—
New Bedford and Taunton.....	111	—
Norwich and Worcester.....	50	49½
Norfolk County.....	20	—
Ogdensburg.....	34	33½
Old Colony.....	65½	66
Passumpsic.....	80	—
Pennsylvania.....	—	—
Pittsfield and North Adams.....	95	—
Philadelphia, Wilm'gton & Balt.....	28	29
Petersburg.....	—	—
Richmond and Fredericksburg.....	—	—
Richmond and Petersburg.....	—	—
Reading.....	55	55½
Rochester and Syracuse.....	106	106½
Rutland.....	53	45½
Stonington.....	43	42½
South Carolina.....	—	—
Syracuse and Utica.....	123½	—
Sullivan.....	25	—
Taunton Branch.....	108	—
Troy and Greenbush.....	90	—
Tonawanda.....	—	—
Utica and Schenectady.....	127½	—
Vermont and Canada.....	99½	99½
Vermont Central.....	33½	35½
Vermont and Massachusetts.....	25½	27
Virginia Central.....	—	—
Western.....	103½	102½
Wilmington and Raleigh.....	—	26½
York and Cumberland (Pa.).....	20	—

Pennsylvania.

The Pittsburgh and Erie Railroad.—The Erie Gazette says that the arrangements for commencing this important work are progressing with all possible despatch. The contractors intend to put a strong force on each section just as soon as the necessary right of way can be secured—the success of which, at an early day, is scarcely a matter of rational doubt. Public feeling in favor of the road is also daily strengthening, and doubtless when its construction shall have been undertaken in a bona fide way, there will be a universal and cordial acquiescence—such as its intrinsic importance authorizes and demands.

Hempfield Railroad.

A report has recently been submitted by Charles Ellet, jr., Esq., Chief Engineer of this road, showing the progress of the preliminary surveys and giving some calculation of the business which the road will command when it shall have been completed.

Two corps of engineers were organized, one of which commenced at Wheeling, and proceeded to make a careful location of a line towards Washington; the other commenced at Greensburgh, and following the valley of the Big Sewickly, have progressed with a similar survey as far as the Yohiogeny. In addition to this regular survey, experimental lines have been carried a head, on the route where the parties are now at work, as far as the Monongahela at the eastern end, and into the valley of the Chartier, on the Western division. The result shows that by adopting sixty-six feet per mile as the highest grade, there will be four tunnels needed upon this line. The first and greatest of these will be found in the "Forks" between the Yohiogeny and Monongahela; the second at Brady's Hill east of Washington; the third will be an extremely short one, under the new grave yard at Wheeling creek; the fourth will be required at Wheeling whenever the Ohio roads are brought across the Ohio river on the suspension bridge. But this last tunnel will not be needed for the accommodation of the trade of the Ohio river. Leaving out of view this fourth tunnel, the opening of which may be postponed, the total cost of all the tunnels on the line now under consideration, will be about \$240,000, if the material be of a character that may be trusted without arching. But if the rock cannot be trusted to support itself, the total cost of all the tunnels on this line will reach \$300,000.

There are other depressions which will be shortly surveyed for crossing the ridges in the Forks, on one of which no tunnelling is necessary. But the merits of that route, in other particulars, have not yet been submitted to instrumental examination.

Mr. Ellet states that the line which he is establishing for the purpose of comparison, is laid out for a maximum grade of 66 feet per mile. The surveys are not yet far enough advanced to ascertain the length of this route, but it will probably not differ much from 79 miles. He proposes, as soon as the two parties now in the field meet upon the present line, which will be in a few days, to place one corps upon the line diverging to the north, by the way of Peter's creek, Elizabethtown and the Little Sewickly; and the other upon that diverging to the south, by Pigeon creek, Maple creek and Belvernon.—This party will also establish the line down Pigeon creek to Monongahela city. A third party will soon be placed on the route of Brushy run and Buffalo creek.

Until the completion of the several surveys now in progress, he can express no definite opinion on the relative merit of the different lines.

In alluding to the prospect that the Hempfield road is destined to be the thoroughfare for an immense traffic, he mentions first the way trade. In a belt of about eight miles in breadth on each side of either of the probable lines of the road, there are not less than 30 towns and small villages to supply it with trade and travel.

But the principal reliance is upon the traffic from the Ohio river. Without going into details which are adduced as the basis, upon which Mr. Ellet forms his deductions, we will give the estimated result:

Freight, 120,000 tons, at \$2 50	\$300,000
87,500 passengers at \$2 50	218,750
Total annual receipts	\$518,750
Expenses estimated to be about	258,750
Leaving net profit	\$260,000

This is ten per cent on a capital of \$2,600,000.—He believes this estimate to be much within the mark, and expresses the confident expectation that the Hempfield road when provided with a double track, and thoroughly equipped, with all its machinery in action, will be fully employed at the outset and will soon be found unequal to the task of accommodating the traffic that will seek that route of transportation.

Railroad Meeting at Pittsburg.

A meeting was recently held at Pittsburg, to take into consideration the propriety of building a railroad along the Allegheny river, to connect with Rochester and Lake Ontario. Thomas Bakewell, Esq., called the meeting to order, and Mr. Samuel Rea officiated as secretary. The meeting was addressed by several gentlemen, who pointed out the importance of the proposed railroad to the interests of Pittsburg, affording, as it would, a cheap and direct route through the Genesee valley, to Rochester and Lake Ontario.

Resolutions were unanimously adopted, to the effect that the interests of western Pennsylvania emphatically demand the speedy completion of a railroad along the banks of the Allegheny river, communicating with the iron regions of Clarion county, and the inexhaustible pine forests of northern Pennsylvania, and opening by the Genesee valley the markets of northern New York and western Canada to the products of their industry; that the proposed enterprise would give a healthful impulse to the manufactures of their vicinity; that it would furnish the cheapest and most direct route for distributing the sugar, cotton and tobacco of the west and south among the populous agricultural districts of western New York and Canada, thereby yielding a new impetus to the steam navigation of the Ohio; and that such a road would not only materially influence the prosperity of the region through which it may pass, but would also prove a source of profitable investment to those enterprising contributors by whom it shall be constructed.

It was stated that the citizens of Rochester were to give three hundred thousand dollars for the commencement of this enterprise; and a committee, consisting of seven gentlemen, were appointed, to take such measures as may be deemed expedient for the furtherance of the project. The distance between Pittsburg and Olean, N. Y., is about 180 miles, and Rochester is 100 miles from the latter point; thus the length of the road would be only 280 miles, and it is supposed the grades would be but slight.

The Pittsburg Gazette thinks that the people along the line of this road could be depended upon to prepare the road for the superstructure, and to furnish the necessary timber. At least this may be expected, it says, for the first hundred miles from Pittsburg. If the construction begun at Pittsburg, it would, says the Gazette, by the time it reached the mouth of the Kiskiminnetas [29 or 30 miles] pay a fair profit. Fourteen miles further would bring the road to Kittanning, another point where a considerable amount of business would be thrown upon it. From Kittanning to the mouth of Mahoning, 12 miles, is a rich iron region, which would furnish a large amount of trade both ways. A few miles

further, Redbank is reached, at which place nearly all the trade and travel of Clarion county would be gathered in. From this point it is proposed by some that the road ought to leave the river, pass up the valley of Redbank a few miles, strike across to the Clarion, and thence up the valley of the latter stream to its source, and thence across the dividing ridge [said to be low] to the heads of the Allegheny, and down the latter to Olean. This the Gazette thinks is probably the shortest route. Others are in favor of continuing up the Allegheny to the mouth of the Clarion, and thence up that river to Olean, as above stated. This is the next shortest route, and has the advantage of but a single summit between Pittsburg and Olean. Others again are in favor of following the river all the way up to the point where the New York and Erie railroad leaves it for Dunkirk, some 20 miles below Olean. For this latter route there is a charter for a railroad from Pittsburg to the State line.

Boston, September 16th, 1851.

H. V. Poor, Esq.

Dear Sir,—Having noticed in late numbers of your journal, remarks by several parties, in relation to the gauge of railroads, I have taken the liberty to present you with some particulars having reference to this matter.

In your paper of Saturday last, your communication from Paterson (I presume by Thomas Rogers) points chiefly to two difficulties, or rather objections, attendant on the adoption of the 4 feet 8½ inch track. The first is the extra height required by these engines for the boiler. The second, the increased length of the tubes often found necessary for large engines.

As to the first objection, I will say locomotives are classed in two general arrangements, namely, outside and inside connections. With an outside connection, there is never any difficulty in placing the boiler as low as it will clear the driving axles; the axles of the largest wheels, immediately beneath the boiler, being the limit of reduction of the height.

With an inside connection beyond this limit, is the space required for the cranks, and the end of the connecting rod attached thereto, to revolve, without striking the under side of the boiler. With an inside connection for the narrow gauge, the cylinders are usually 24 inches between the centers, sometimes 26 inches, never more, as that is all the width of the frame will allow. With cylinders at this distance apart it requires from 15 to 16 inches from the center of the axle to the under side of the shell of the boiler for the clearance of the machinery. 16½ inches is the greatest height given by any builder in New England, and the clearance can be made in 15 inches.

With the engines of the class of the Nos. 100 to 111, inclusive, built and building at Paterson for the New York and Erie railroad, the cylinders are placed at the widest limit between their centers, which is 37½ inches, and the clearance from the centre of the axle to the under side of the boiler is 14 inches. The utmost that could be gained in the reduction of the height of the boiler for the 6 feet gauge, above the 4 feet 8½ inches, would be 3 inches, and the practice on the Erie engines, has seldom gained as much as 2 inches.

As to the second difficulty, of making a necessity for large tubes for engines for the narrow gauge, I will say that there are not 6 engines, out of nearly 500 engines, which I have seen running on narrow gauge roads, where the length of tubes exceeds 11 feet. The usual length on the Erie road is 11½ feet;

1 engine has 12 feet tubes, 6 engines have 12½ feet tubes, 17 have 13 feet tubes (all built at Paterson), 2 have 13 feet 8 inch tubes, and 4 have 14 feet tubes, the latter, 3 feet longer than any others in the country, with perhaps a very few exceptions, as in the case of the engines employed on the heavy grades of the Baltimore and Ohio railroad, and in like other difficult situations.

The freight cars employed upon the New York and Erie railroad have an average weight of 14,500 lbs., about 2,500 lbs. more than the usual weight of the same class of cars upon the narrow gauge roads, (for the content of the cars employed upon most of the narrow gauge roads, is fully equal to that of the Erie cars. 28 feet long by 8 feet wide is the usual size on narrow roads, and 26 feet by 8½ feet is the size on the Erie road: the height is the same on both.) 25 of the Erie cars, with the usual loading of freight, is an extreme load for engines of 32½ tons weight, now running from Piermont to Port Jervis. I have often seen as heavy a load drawn over as difficult grades by engines of 21 tons weight, running upon a narrow road.

Your correspondent closes by stating that it is his opinion, that the track of the wide gauge would require less for repairs than the narrow one, as the weight of the engine and cars is more equally divided upon the broad track. I do not understand this latter paragraph. I am aware that the heaviest of narrow gauge engines have about 8,000 lbs. pressing at each driving wheel upon one point in the rail. There are engines upon the Erie road where this weight is 11,500 lbs., really quite a difference, and likely to exert a corresponding tendency upon the expense of repairs. The majority of narrow gauge engines have 6,500 lbs. on each driving wheel; the majority of Erie engines have 8,500 lbs. on each driving wheel, which increased weight acting upon a rail of usual weight seems to me to be likely to enhance the expenses of repairs very much.

Yours, Respectfully,
ZERAH COLBURN.

Baltimore and Ohio Railroad.

Our Railroad Connections Westward.—The strong affinities which connect Baltimore with the central regions of the West and point to this city as the best Atlantic emporium of their trade will be powerful enough, we doubt not, to overcome all efforts from other quarters to defeat such connections and to divert the trade to less eligible points. The line of connection which is to bring Cincinnati into communication with the eastern seaboard is made up or is to be made up of several sections uniting intermediate points. Our Philadelphia neighbors have succeeded in prevailing upon one of those sections to make its termination at Marietta instead of Belpre opposite to Parkersburg, as originally contemplated—although the privilege yet remains to carry it to Belpre when there shall be occasion—and upon this success our neighbors plume themselves not a little.

But in the meantime behold the progress of the Cincinnati and Hillsborough railroad which is striking direct for Parkersburg! The Hillsborough Gazette announces the letting of a contract for the completion of that road to Hillsborough, by the first of January next, and goes on to say further:—

"At the same meeting of the Board, fourteen miles of road east of Hillsborough, on the Paint Valley route, was let to the same company, (Messrs. Currie, Cushman & Crane,) who expect to do the grubbing and necessary quarrying this winter, preparatory to the grading and masonry in the coming spring. Both these lettings were effected on terms considered highly favorable to the interests of the stockholders, and 25 per cent of the entire work, east and west, is to be taken in the stock of the company at par.

"Proposals for six additional miles, east of the

fourteen let, reaching to the Big Falls of Paint, were received, but have not as yet, been decided on, but we are assured will be in a few weeks at farthest. This 20 miles of road, east of Hillsborough, when completed, (which is confidently anticipated by the 1st of January, 1853,) will give us eighty miles of running road, on the direct through line from Cincinnati to Parkersburg; leaving but 100 miles to finish to secure one of the most desirable and certainly one of the best paying roads on this continent.

"This intelligence, which we are fully authorized to communicate to the public, will be gratifying not only to our people at home, but to the citizens of Cincinnati and Baltimore, whose best interests are so closely identified with the issue of this great work, which now promises so fair for successful progression; and it now only remains for the people of those cities and the Baltimore and Ohio railroad company to make the proper demonstration to ensure the completion of the entire work hence to Parkersburg in two years, and thus put Cincinnati and Baltimore in connexion on the shortest practicable route that can be projected, in the shortest possible length of time.

"We learn that the Board of Directors at their late session here 'Resolved' to employ Elwood Morris, Esq., civil engineer, to commence, at the earliest day practicable, with a corps of engineers, and run a direct line from Parkersburg to the Big Falls at Paint creek, reconnoissances having already been made sufficient to satisfy the company of the entire practicability of such a line, both in grades and expense of construction. Success to the enterprise say we.

"Since the action of our Board of Directors, at its late meeting, there is, we are happy to say, a decidedly better state of feeling among our citizens in regard to our railroad interests. Whatever differences of opinion may have existed heretofore, in relation to railroad routes and railroad policy, we think we are fully warranted in saying that our people are now, almost without an exception, determined to co-operate in harmony, and to concentrate their energy and influence in pushing on our own road, in accordance with the present policy of the company."

Thus we may see how the superior advantages of our Central route are appreciated beyond the Ohio; and thus may we learn to bring home to ourselves the obligations under which we rest to do our part towards the completion of a connection so ardently desired by our Western friends, and from which they with reason anticipate such high returns. We can venture to assure them that Baltimore will not be behind-hand in doing her part in the great work of accomplishing so desirable a connection—the advantages of which we should be blind indeed not to estimate as of the highest importance.

Whatever other routes may be projected, whatever connections may be formed by local interests from Cincinnati eastward, we may be sure that a point so important as Parkersburg will be sought by every one of them that shall come within striking distance. Our road once brought to the Ohio at Parkersburg, it cannot but follow that the facilities which will then and thus be offered for a direct and rapid access to the Atlantic will be eagerly availed of by tributaries enough in the West to constitute the great Baltimore Central route the main thoroughfare of trade and travel for the whole region to be commanded by the line from St. Louis to the eastern seaboard.—*Baltimore American.*

Ohio.

Cincinnati, Wilmington and Zanesville Railroad.—The Cincinnati Weekly Gazette says:—"The surveyors have been for some days past on the line from this city to Wilmington, by way of Lebanon. We entertain no doubt whatever that the engineers can find a short and easy route into the city by way of Lebanon, if not the shortest and easiest route. The Star says, that from Lebanon this way to Mason, there can be no better track for a road—not over eighteen feet grade, and the whole line to the city practicable. The engineer is now exploring the ground from Wilmington, to run near

Harveysburgh, and down Carson's creek to the Little Miami. Several routes by Lebanon are spoken of as clearly practicable. The shortest route, will we think, pass near Lockland."

Kentucky.

Lexington and Danville Railroad.—We learn that the amount of stock necessary to organize the Lexington and Danville railroad company, has been subscribed, and the road will soon be in progress of construction.

Harrodsburg Branch Railroad.—A meeting of delegates from the counties of Shelby, Franklin, Anderson and Mercer, was recently held at Harrodsburg, to take into consideration the subject of building a railroad from that place, to intersect with the Louisville and Frankfort railroad at some suitable point, to be determined by the directors of the Louisville and Frankfort company. Captain Samuel Daviess presided as chairman of the meeting, which was addressed by several of the delegates from Shelby and Franklin, J. M. Bullock, Esq., of Shelby, and Hon. C. S. Morehead, of Franklin, being the principal speakers. Mr. Bullock advocated in a very able manner the advantages of having the road to leave Lawrenceburg, near that place and strike the Shelby line about five miles south of Hardinsville, and thence on through Shelbyville, to intersect the present road about twelve miles from Louisville; and asserted that Shelby would build thirty miles of the road, or all within the limits of that county. Mr. Morehead and other Frankfort delegates, on the contrary, undertook to demonstrate that Frankfort was the best point, and that while Frankfort was the only point which could probably be reached at an early day with the means which it was likely could be raised, the Shelby route would be to a great extent a rival road to the present Louisville road. But the Frankfort delegates took the ground distinctly, that they intended to make no opposition to any road; that if Danville wished to construct a road to Lexington, it was their right to do so; and that if Shelby wished to construct a road from Anderson to near Louisville, they had a right to do so. There was no diversity of opinion about the advantages of constructing the road, and it is believed that as soon as the location is made by the present company, those counties will go to work at once to raise all the means required of them.

In the absence of estimates, and the Louisville and Frankfort company not being represented as expected, no permanent action took place, and another meeting was appointed to be held at Lawrenceburg on the 3d of October, when it is expected that everything will have been done to enable the parties interested to go to work at once in providing the requisite means.

New York.

Syracuse and Binghamton Railroad.—Judge Stevens, the president of the company, made our village a short visit yesterday on his way to Great Bend to make some examinations in reference to the Legget's Gap road, the supply of coal, &c. He was accompanied by Jas. Hall, Esq., who has been appointed engineer of the road. Mr. Hall has heretofore been engaged on the eastern roads, and is now the Chief Engineer of the straight road from Syracuse to Rochester, which is now in a state of forwardness, and of which he has principal charge as engineer and commissioner. He has had much experience as an engineer, and his appearance sustains his reputation as a practical, efficient, common-sense man. We think the directors have been fortunate in the selection of Mr. Hall. We are happy to learn that the survey will be commenced on the route north of the summit next week.—*Binghamton Dem.*

Ohio.

Central Ohio Railroad.—In our last we announced to our readers the arrival of one of the locomotives purchased for the use of the Central Ohio railroad. This has been landed in West Zanesville, and in company with its "tender," has taken its station on the track. At the same time that this engine came to hand the first lot of rail for the road also arrived; several boat loads of the rail are now on the way from Cleveland. There is also in that city a considerable quantity awaiting transportation, and still another lot on the way from New York to Cleveland, while there are several ship loads daily expected to arrive in New York from Wales; so that we now hope to be continually and regularly receiving the rail as fast as it may be needed.

It is intended to commence laying the track at West Zanesville and at the Black Hand about the same time, and the work will be pushed forward from both points as rapidly as possible until it shall be completed.

The directors are expecting three more locomotives as fast as they may be needed, to arrive from the East. We believe that the Messrs. Blandy also have one nearly completed. Messrs. Douglass, Smith & Co. have also 21 freight cars nearly completed, and about 41 more in course of construction, for the use of our road.

In addition to this the directors have purchased and paid for two beautifully furnished passenger cars, manufactured at Dayton, and which are to be delivered at Newark whenever demanded.

So, it will be seen, that machinery is already provided to put the road in operation as fast as the track can be completed.—*Zanesville Courier*.

Baltimore and Ohio Railroad.

Progress of the Road West of Cumberland.—The rails have reached the end of the 45th section, and have passed the heavy grade on Savage and Crabtree, and the summit at the head of the latter. The weather in that region, the chief engineer states, had not been favorable or more track would have been laid. After a slight detention at the Gap, in the embankment near the summit, the rails will move forward more rapidly, and it is expected they will reach the Oakland station in the glades, by the 20th or 25th current, and in Cranberry swamp by the 15th of next month, should the weather prove favorable. The 15 miles of high grades have now been worked, and are daily worked with ease and safety at speeds both up and down, of 20 miles an hour, by the engines and trains employed upon them.

Reduction of Fare.—At the stated meeting of the board of directors of the Baltimore and Ohio railroad company, this day, we learn that a reduction was made in the passenger fare from Baltimore to Cumberland, and intermediate points. The through fare to Cumberland will hereafter be charged at \$5, instead of \$7 as heretofore. The new tariff to commence at the commencement of the fiscal year, on the 1st of October.

We also learn that the company has reduced its rate on the transportation of coal 15 cents, equivalent with existing rates, to \$2 per ton to private wharf owners.—*Baltimore Patriot*.

Iron for the Manchester Road.

We learn from the Wilmington Herald that a contract for the purchase of the whole of the iron for the Wilmington and Manchester railroad was recently effected in New York by the agents of the company. The company's bonds are taken in payment at 90 cents, the cost of the iron is \$41.50 cents per ton, and it is to be delivered at Wilmington and Charleston at that price, free of duty and all expenses. The company, of course, pay the duties, freight, &c., in the first place, but the amount is afterwards to be deducted.

This, the Herald says, is a good contract, and it is so considered by those interested in the welfare of the road, or concerned in its management. It is another evidence of the advancing progress of the work, which is steadily pushed forward, and destined when completed, to add largely to the commercial prosperity of this place.

New York.

Northern Railroad.—In answer to the numerous inquiries made in regard to the Northern road, which is to connect this city with Vermont, for the purpose of securing a portion of the Northern trade, we would state that an entire new line has recently been surveyed between this city and Cohoes, and that the report of the engineer, together with a map of the survey and the necessary papers, is now in possession of the directors. It is confidentially asserted that the last surveyed route will be selected, and that in the course of this week the entire line to Cohoes will be put under contract. This line does away with a branch road to Cohoes, and it is considered, by those conversant with it, to be by far the best and most available route, as by the addition of some twenty miles of rails a straight road can be built to Saratoga, which would command the bulk of the pleasure travel, and pay a handsome interest on the investment.—*Albany Journal*.

Canandaigua and Niagara Railroad.—At a meeting of the directors of the Canandaigua and Niagara railroad, last week, the following resolution was adopted:—

Resolved, That this company will go on and construct as speedily as possible a railroad of the gauge of six feet in width, from Canandaigua to Niagara Falls, and that measures be taken immediately to fill up the balance of the subscription for the capital stock, so that the work may be put under contract by the first of October next.

Canandaigua and Jefferson Railroad.—The Canandaigua and Jefferson railway is completed, and will be run by the Erie railroad company. It is stated by the Ontario Repository, that the distance from Canandaigua to New York, will be accomplished by this route in 14 hours. From Canandaigua to Jefferson, the road traverses a beautiful country—being the most fertile sections of the rich counties of Ontario and Yates. The distance from Canandaigua to New York by this route, is 356 miles. By the way of Albany, it is 364 miles. There is little saving in distance, therefore, on the new route.

Railway to St. Louis and to Indianapolis.

A public meeting was lately held at Brownstown, Jackson county, Indiana. Much spirit was manifested favorable to the railway to St. Louis. Resolutions were adopted with great unanimity, to reduce the claims for rights of way, and pledging the country and individuals for an amount of stock sufficient to place the superstructure on the road, provided it shall be located with a view to promote the settled interests of the county. This is in addition to the stock formerly taken in that county. They also recommend to the people of Jennings and other counties along the line, to take immediate and efficient steps to advance this great railway enterprise.

The Indianapolis Sentinel of the 5th instant, earnestly advocates the direct railway to Cincinnati, which it declares 109 miles long—a three hours trip. The St. Louis line from Cincinnati, about to be put under contract, provides for the "direct line" as far as Lawrenceburgh. From Lawrenceburgh to Shelbyville, 63 miles, the road is under contract, and the track will be laid on it this autumn, from Lawrenceburgh out 20 miles, and the rest of the way to Shelbyville will be ready for the iron by the 1st of January, 1853.

The Sentinel says "our citizens have taken hold of this matter in the right way," by taking \$60,000 of the stock, which under proper encouragement at the other end, can be raised to \$100,000. They look to Cincinnati to double this sum, which done, the thing is settled and the road will soon be in flourishing operation.

"No sane man can question the productiveness" of a railway connecting Cincinnati directly with Indianapolis, says the Sentinel. The company have offered to adopt the Ohio gauge, (in expectation of encouragement in Cincinnati), so that there need be no transshipment at Lawrenceburgh. Will Cincinnati fail on her part?

Why friends, Cincinnati, by your own showing, is about to make the road to Lawrenceburgh, one

fourth the distance, and at probably half the expense of the whole line. Is that nothing? Cincinnati is doing all she can, and should it be necessary, will still further aid the line spoken of, but let the people along the line take hold with a will, and the work will be done beyond peradventure.—*Cincinnati Weekly Gazette*.

Maine.

Kennebec and Portland Railroad.—The work on the Kennebec and Portland railroad is apparently progressing towards its completion, in a very satisfactory manner. The hands which have been scattered along the road are being concentrated at those points where the most work remains to be done. Much the greater portion of the grading on the unfinished part of the road is already completed. The rails have been laid nearly or quite up to the south line of Gardiner. The foundations for the depots in this city are now being prepared. The freight depot and machine shops at the foot of Court street, are to be built of brick, and the work of erecting the walls was commenced on Monday last, under the superintendence of Mr. Alfred Bicknell.

The passenger depot on Commercial street, is to be built of wood, about two hundred and fifty feet long and sixty-five feet wide, the upper end being within seventy-five feet of Bridge street. The work, we understand, is not to be let out on contract, but the company will employ mechanics to do the work by the day.

It is confidently expected by the friends of the road that the cars will run to this place early in November.—*Augusta Farmer*.

Tennessee.

Nashville and Chattanooga Railroad.—We learn that the work on the bridge across the river, being built under the supervision of Col. Stevens, is progressing very well. It is a very heavy job, but we are convinced that if energy, supported by practical knowledge, will conquer, the company may rest contented that Col. Stevens will get his work done.

Messrs. Murdoch and Townsend, who have a very heavy contract on the road between Chattanooga and the river, are devoting their whole energies, time, talents, capital and ingenuity, in pushing forward the work. They will succeed, without some misfortune, in fulfilling their contract. The work around the point of the Look Out mountain is further advanced than the most sanguine friends of the enterprise anticipated, considering the difficulties to be encountered. On the 25th, Mr. Murdoch rode round on the track on horseback, and on the 26th, the same feat was performed by engineers J. B. Whiteside and H. L. Brantley. This argues well for the success of the work. To the enterprising contractors, the engineers, boss workmen and all concerned, much credit is due. The "Point" was a serious obstruction; now it is passed, and the cavalier and pedestrian can pass in safety, and soon the steam engine will wend its way beneath the mighty cliffs, and above the dark waters of the beautiful Tennessee.—*Chattanooga Gazette*.

Indiana.

Three hundred tons T rail iron arrived last night on two flat boats from Cincinnati, for the extension of the Bellefontaine road to Muncietown. The iron came through the Welland Canal, the Lake and the Sandusky railroad to Cincinnati.—*Madison Courier*.

Canada.

Bytown and Prescott Railroad.—The Directors of the Bytown and Prescott railway company held a meeting at Prescott on the 2nd inst., at which the necessary steps were taken for proceeding with the work upon the line of the railroad forthwith. The tender of Messrs. French & Co., for the clearing, close-cutting and grubbing of the woodland upon the whole line was accepted, and their Chief Engineer, has already advertised for tender for certain portions of the grading.

It is the intention of the directors to push the work as vigorously as possible this fall, in order to have the advantage of the best part of the season for such descriptions of operations. The heavy cuttings will be opened as soon as practicable, and kept in progress during the winter; and they can by this means be sufficiently advanced next season

to allow of their being completed as early as the other portions of the line. Ground will be broken at Bytown on the second day of next month, though the clearing, &c., of the wood-land will be set about immediately.—*Ottawa Citizen.*

Mississippi.

Southern Railroad.—We understand from one of the commissioners of the Southern railroad that the tressel work at the Pearl River bridge, is now being repaired in a most substantial manner. It was thought that this part of the road was in rather bad order, and hence the improvement. An experienced and skilful mechanic has charge of the work, and we are assured that the tressel work of the Pearl River bridge, will hereafter be perfectly secure.

While speaking of our part of the road, it is our duty to inform the public that the depot at this place has, of late, been much enlarged, by the addition of a large and commodious warehouse, some 80 or 90 feet in length, and 40 or 50 feet in width. Much credit is due the commissioners of this end of the road for their untiring industry, and concern, for the comfort and convenience of the public.—*Brandon Republican.*

Railroad Meeting at Greensburg, Ky.

On Monday, the 1st inst., there was a meeting at Greensburg, of the citizens of Greenup county, in favor of a railroad from Maysville to the mouth of the Big Sandy. The Ironton Register says that there was not much enthusiasm manifested, but intimates that the people of that county are not so much opposed to the road, as they are to subscribing anything for it. An address was delivered by Thomas B. Stevenson, Esq. editor of the Maysville Eagle, and there were about \$200 raised for the purpose of defraying the expense of preliminary surveys.

New York and Erie Railroad.

The Erie railroad, which has a regular business office in Philadelphia, is attracting transportation from that city. The New York Express says:

"Many merchants in Philadelphia, in conformity with their circular, are sending goods sold to western merchants via the Erie railroad, the Philadelphia merchants paying the freight from their city to New York. The more rapid transit by the Erie road is the inducement to send merchandise in this direction."

Rutland and Washington Railroad.

The track of this road is already laid with iron to Granville, N. Y., a distance of 20 miles from Rutland, and the entire line from Rutland to Eagle Bridge, 57 miles, (where it joins the Troy and Boston road), will be ready for running in the month of October. By the 1st of December, the Troy and Boston road will be completed to Eagle Bridge, thus giving us a continuous and direct line of railway, by way of the Hudson River road, from Burlington to New York, a distance something less than 300 miles.

Virginia Locomotive and Car Works.

Wolfe Street and River Potomac, Alexandria, Va.
SMITH & PERKINS, Proprietors.

MANUFACTURE

Locomotive Engines and Tenders.
Marine and Stationary Engines and Boilers.
Chilled Car Wheels and Axles.
Patent Chilled and Wrought Slip-tire.
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The undersigned having erected very extensive shops, and procured the most modern machinery and tools, are prepared to execute orders for Locomotive Engines, Cars, and Machinery of all kinds, with despatch, and on the most favorable terms.

R. C. SMITH,

Late of the Alexandria Iron Works.

THATCHER PERKINS,

Late Master of Machinery on the Balt. & O. R.R.
July 22, 1851.

Railroad Iron.

THE undersigned, Agents for British Manufacturers, continue to sell Railroad Iron of the best quality, and of any weight or pattern required; deliverable at any part of the United States or Canada.

They have now on hand, ready for delivery at New York:

2,000 tons of an approved pattern, weighing about 60 lbs. to the yard.

WM. F. WELD & CO.,
42 Central Wharf, Boston.

Septimus Norris,

Civil and Mechanical Engineer, Philadelphia.

To Railroad Companies.

THE undersigned has discovered and patented an imperishable, cheap, and sufficiently elastic substance, to be introduced between the sill and rail, so that the stone sill can be used in place of the wooden sill: entirely overcoming that rigidity where the rail is laid directly on stone. Address

J. B. GRAY, Philadelphia.

July 10, 1851.

4m

To Contractors.

York and Cumberland Railroad, Maine.

Portland, Sept. 12th, 1851.

PROPOSALS will be received at the office of the York & Cumberland Railroad Company in this city, from the 10th to the 15th day of October next, for the grading, masonry and bridging of the York and Cumberland Railroad from Gorham Station to Great Falls, a distance of about 38 miles. Proposals will also be received at the same time and place, for building the entire line of said road, including the superstructure, or any one or more divisions thereof.

Plans, profiles and specifications will be exhibited, and all requisite information given at the office of the company, in Portland, on and after the 10th of October next.

Trains have run from Portland to Gorham during the past season; work has also been done to a considerable extent at the western end of the line, between Great Falls and Springvale.

The York and Cumberland Railroad, when completed will be the great interior line—in connection with the Boston and Maine Railroad—between Portland and Boston, and will command the principal travel between the two cities.

By order of the Board of Directors,

JOHN A. POOR, President,

JOHN F. ANDERSON,

September 15.

Chief Engineer.

Railroad Paint.

FOR depot buildings, bridges, burthen cars, wheels and axles, pipes, steam joints, fences, and every description of work requiring protection from the action of the elements. Price per barrel of 300 pounds, nine dollars.

Orders addressed to J. M. HALL, 36 South street, New York, will receive prompt attention.

To Contractors.

Cincinnati and St. Louis Railroad.

SEALED proposals will be received at the Office of the Company till Wednesday, the 1st day of October next, for grubbing, grading and bridging forty-five miles of the Ohio and Mississippi railroad, from Mill Creek, in Cincinnati, to a point twenty miles west of the city of Aurora, Ind.

Plans, specifications, &c., may be examined by Contractors, at the Office of the Company, in Cincinnati, from the 20th of September, to the day of letting.

By order of the Board,

ABNER T. ELLIS, Pres't.

Cincinnati, August 16th, 1851.

Railroad Iron.

THE Undersigned offer for sale 2,000 tons of Railroad Iron, to arrive at New York in the month of September next. It is of a most approved pattern and quality, and weighs about fifty-five pounds to the yard.

CHOUTEAU, MERLE & SANDFORD.

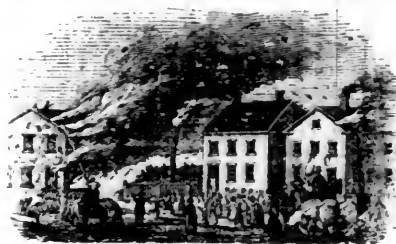
No. 51, New Street.

New York, August 9.

To Contractors.

A DIVISION of about 30 miles of the grading, together with the mechanical works of the South Side Railroad, commencing near Farmville, and extending westward, will be let on the 15th of October next, at Farmville.

C. O. SANFORD, Chief Engineer.
Petersburg, September 4th, 1851.



Blake's Patent FIRE-PROOF PAINT.

This paint, in a few months after applied, turns to slate or stone, forming a complete enamel or coat of mail over whatever applied, protecting it from the action of fire, water or weather. It has now been tried over seven years, and where first applied is now like a stone.

LOOK OUT FOR FORGED BRANDS AND WORTHLESS COUNTERFEITS, as this paint has gained such universal credit throughout the country, that many persons have been getting up all kinds of worthless counterfeit stuff, and pushing it into the market upon the credit of the genuine, but most of it has proved itself so entirely worthless, that it is impossible to sell. Some of them have commenced forging my brands, and putting it upon the barrels—the forgery can be detected from the fact that on the genuine the words "Blake's Patent Fire Proof" are put on in a circular form, but on the spurious it is straight. I have now three suits in the United States Court against those who have been infringing my patent by selling "fire proof paint" not of my manufacture. I would, therefore, caution all to be very particular, and see that they get the genuine article, which can at all times be had of the Patentee, at 84 Pearl street, New York.

WM BLAKE.

September 12th.

Wanted,

BY the Montreal Mining Company, a Manager for their Establishment at the Bruce Mines, Lake Huron.

Applications stating terms, and enclosing certificates of character and ability, will be received by the undersigned until the 1st October next.

By order.

H. D. COCKBURN, Secretary.

Montreal, August 27, 1851.

To Contractors.

THE SUNBURY AND ERIE RAILROAD COMPANY invite proposals for grading and bridging the line of the road, for a double track, from the City of Erie to Williamsport, in Lycoming county, in a substantial and workmanlike manner, complete in every respect for the superstructure.

Proposals should be addressed to D. L. MILLER, Jr., President, Philadelphia, on or before the 20th of Ninth month (September) 1851. Contractors will state what proportion of the Stock of the Company, if any, they will take at par in payment.

It is believed that the superiority of the harbor of Erie, the favorable position of the route, and the shortness of the distance secured by this, compared with any other railroad from the Lakes to the seaboard, will render this road as profitable, and its stock as good an investment, as that of any ever constructed in the United States.

A copy of EDWARD MILLER'S Second Report will be forwarded to those to whom this Circular may be addressed.

A MASS CONVENTION of the friends of this great project will be held in the City of Philadelphia on the 25th of Ninth month (September), at which all interested are invited to attend.

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Bridges & Brother, DEALERS IN RAILROAD AND CAR FINDINGS,

64 Courtlandt street, New York.

Having established a general Depot for the sale of articles used in the construction of Railroads, Locomotive Engines and Railroad Cars, we would invite your attention to our establishment. We have already in store a good assortment of CAR FINDINGS and other articles used in the trade, and feel justified in saying, that should you desire anything in our line, we can supply on terms perfectly satisfactory, and in the event of your desiring to order, you may feel assured that your terms will be as good as though you were here to make your own purchases.

Among our goods may be found Railroad Car Wheels, Axles, Jaws and Boxes, Nuts and Washers, Bolts, Brass Seat Hooks and Rivets, Window and Blind Springs, Lifters and Catchers, Door Locks, Knobs and Butts, Ventilators and Rings, Car Lamps, Coach and Wood Screws, Jack and Bed Screws and Babbitt's Metal; also Plushes, Damask, Enameled Head Linings, Cotton Duck for Top Covering in width sufficient without seams, Curled Hair and all other articles appertaining to cars.

Also a new and valuable CAR DOOR LOCK, well adapted to the Sliding Door. This is decidedly the best yet introduced.

LOCOMOTIVE ENGINE LANTERNS, the best article made in the country. Whistles, Gauge and Oil Cocks, Hemp Packing, American, Russian and Italian. We are also agents for Lightner's Patent Journal Box for Car Axles, that invaluable invention, for the economical use and preservation of Car Journals.

Coach VARNISH and Japan of the best quality.

We would also offer our services for the purchase as well as for the sale of goods on commission.—Both members of our firm have had the experience of many years in the manufacture of Railroad Cars, and our Senior was a member of the well known house of DAVENPORT & BRIDGES, Car Manufacturers, Cambridgeport, Mass. With our knowledge of matters pertaining to Railroads, we feel quite confident in giving satisfaction to both buyer and seller, and hope that through assiduity and attention to any business entrusted to our care we shall merit a continuance of confidence and patronage.

BRIDGES & BROTHER.

July 22, 1851.

Lightner's Patent Axle Boxes.

THE Undersigned are Agents for, and offer for sale, *Lightner's Patent Axle Boxes*, for Railroad Cars and Tenders, which have, by thorough experience, been demonstrated to be one of the most valuable improvements ever introduced in Locomotion. The saving effected in oil alone, will in a few months pay the first cost of these boxes, independent of other advantages. They are now in use upon the following, among other roads, viz:

Boston and Worcester, Boston and Providence, Boston and Fitchburg, Nashua and Lowell, Providence and Worcester, Northern, N.H., Cheshire, Manchester and Lawrence, Concord, N.H., Concord and Claremont, Ogdensburg, (Northern, N.Y.), Stonington, New London Willimantic and Palmer, New Jersey Central, New Hampshire Central, Worcester and Nashua, Fitchburg and Worcester, Connecticut and Passumpsic, Lowell and Lawrence, Salem and Lowell, Wilton Branch, Newburyport.

Below will be found the certificates of a number of gentlemen, whose opinions will be good authority in every part of the country.

Office Boston and Prov. R. R.,
Boston, Dec. 28, 1849.

Mr. JOHN LIGHTNER,

Sir,—It affords me pleasure to say, that after two years' trial of your boxes, I am fully and entirely satisfied of their superiority over any other pattern we have used. This superiority consists in economy of oil and freedom from "heating." I have tried every pattern of box in use, of any note, and do not hesitate to say, that you have devised one which in every respect combines greater advantages than any other within my knowledge; these advantages are so manifest, that I am fitting up all

our cars with your boxes, as fast as practicable.

Annexed, is a statement of an experiment with your boxes, the result of which may be of use to your interests.

Ten passenger cars, running 72 wheels, fitted up with Lightner's boxes used 41½ pints of Patent Oil, at 50 cts. per gallon, ran 43,099 miles, equal to 5-18 pints per wheel for 43,099 miles. Speed, 30 to 40 miles per hour.

Very respectfully yours,

W. RAYMOND LEE, Supt.

I have examined the above statement of Mr. Lee, and fully concur with him in his opinion of the superiority of Lightner's box.

GEORGE S. GRIGGS,

Supt. Machine Shop B. & P. R. R.

Boston, July 26, 1849.

This is to certify that J. Lightner's axle boxes for railroad cars and locomotive tenders, have been in use on the Boston and Worcester railroad one year, and I unhesitatingly pronounce it, in my opinion, the best and most economical one in use, requiring less oil, of easy application, not susceptible of derangement, as in most kinds in use. When requiring repairs or renewal, the same may be done in one-fourth of the time usually occupied for that purpose. The box requires oiling not oftener than once a month—is kept quite free from dust, and consequently wears much longer than those generally in use.

D. N. PICKERING,

Supt. Motive Power, B. & W. R. R.

Office of Boston Locomotive Works,
December 12th, 1849.

The Boston Locomotive Company have been using J. Lightner's patent axle boxes under the tenders of their engines for several months, and find them more highly spoken of by the railroad companies that have used them in regard to economy in the use of oil, their durability and their ease of adjustment, than any other boxes which they have used. We therefore do not hesitate to recommend them to all railroad companies.

DANIEL F. CHILD,

Treas. Boston Locomotive Works.

Taunton Locomotive Works,
Taunton, July 7, 1849.

Mr. H. F. ALEXANDER,

Dear Sir,—Your favor of yesterday came to hand in which you ask what success we have met with, in using Mr. Lightner's patent box for cars, engines, &c.

We have put it in use on the Boston and Providence railroad, New Bedford and Taunton Branch railroad; Central railroad, N. J., Norfolk County, Rutland and Burlington, and as yet we have not had one complaint from them; and from what we have used of it, and witnessed, we do not hesitate to say that it is superior to anything in use for that purpose. It is simple in its construction, and easy of access, and the reservoir is held close to the shaft, and the oil and journal is perfectly secure from dust; they will run from four to six weeks without replenishing the oil. The brass in the box is changed very much easier than by any other plan that we have seen.

Very resp. yours,

W. W. FAIRBANKS, Agent.

Office Providence & Worcester R. R. Co.,
Providence, Dec. 17th, 1850.

H. F. ALEXANDER, Esq.,

Sir,—The "Lightner patent boxes" for cars and locomotives have been in use under a portion of the passenger cars and engines of this company for upwards of two years, and have given very great satisfaction.

Though combining many excellent qualities, their great superiority consists in the economy of oil.

The result of experiments upon this road shows the consumption of oil by the use of this box, to be not more than one sixth part the quantity consumed by the use of the common box.

With the common box, eight passenger cars, 64 wheels, running 90 miles per day, consumed in 12 months 520 gallons of oil, being an average of 8½ gallon per wheel per annum.

With the Lightner box the same cars running the same number of miles per day, during the same space of time consumed 73½ gallons of oil, being an average of 1½ gallon per wheel per annum.

So manifest are its advantages over any other box used by this company, it is intended to place it under all our cars as soon as practicable.

Besides the saving of oil, as they afford complete security from dust, we think them more durable than any other box in use.

Another advantage resulting from the use of this box is, cars run more easier than with the common box. The saving in fuel which it would effect, would of itself, we think be a sufficient inducement to use this box in preference to any other known to us.

Very respectfully,

ISAAC H. SOUTHWICK, Supt.

JOHN B. WINSLOW,
Supt. Machine Shop, P. & W. R. R.

Cambridgeport, April 5th, 1851.

H. F. ALEXANDER, Esq.

Sir,—This may certify that I have been engaged in the manufacture of railway cars since 1834, and have built for the different railroad companies cars of all descriptions to the amount of three millions of dollars, and have used on the above cars all kinds of journal boxes, and find that none give better satisfaction than the "Lightner patent box," both on account of the saving of oil and the arrangement for taking out and re-placing the composition by means of the sliding key, and other conveniences which no other box possesses.

Yours respectfully,

CHARLES DAVENPORT.

Worcester, March 17th, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—This is to certify that I have been for some years past engaged in building cars, and that I have tried most, if not all of the patent boxes, and have found Lightner's patent superior to all others as far as the saving of oil is concerned, also the ease with which they are fitted and exchanged in case they get out of order.

For the last three years, I have put them under all of the cars I have built, and in every instance they have given the most entire satisfaction.

Yours truly,

OSGOOD BRADLEY.

Office Union Works, So. Boston,
May 23d, 1851.

This certifies that I have applied Mr. J. Lightner's patent axle boxes to my locomotives and tenders for the past two years. I consider them superior to all others,—economical in their use, and possessing many important advantages not found in any other boxes.

SETH WILMARTH.

Office 15, R. R. Exchange, Boston,
June 1, 1851.

This is to certify, that we have known the success of Lightner's patent journal boxes upon various roads in New England the past three years, and have been led to examine their peculiar construction.—We are well satisfied of their merits, and have adopted them upon our small gravel cars, and take pleasure, as we ever have done, in recommending their use upon all roads where we are employed in the construction.

GILMORE & CARPENTER,
Contractors.

Amoskag Manufacturing Co. Machine Shop,
Manchester, May 31, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—We are using the Lightner box on all the engines and tenders we build, and we are satisfied that it is the best box in use, and recommend the same to all those who purchase engines at our works.

Yours respectfully,

O. W. BAYLEY, Agt.

This is to certify that the Fitchburg railroad company having become satisfied of the superiority of J. Lightner's patent Axle Boxes for Railway Cars and Locomotive Tenders adopted the same

and are bringing them into general use upon their road.

One year's experience with the above improvement, has fully convinced me that there has never been anything offered to the public for that purpose which possess such intrinsic value; in fact, this is an improvement which seems to overcome all the difficulties found in all the various kinds now in use. It possesses very many advantages over all others: Some of which are [first] the first cost is much less than that of most boxes in use. [Secondly] 75 per cent is saved in oil; one gill applied to each Journal once a month, or one quart to an eight wheel car, is all these boxes require per month [Thirdly] no dust can gain access to the Journal, which is constantly lubricated with clean oil; hence the saving in repairs of Journals and composition bearings, is a matter of importance. [Fourthly,] its construction is truly simple—not complicated, having nothing liable to become loose by constant and severe service. [Fifthly] for convenience there is nothing which approaches this improvement.—The composition bearings may be removed from the Journals of an eight wheel car, by one man, and returned, or duplicates, in twenty minutes, while under the car: the same would require two men, at least half a day with other boxes in use.—The trucks and wheels using these boxes, are free from oil and dirt, usually seen upon all railroad cars, at great expense to the corporation.

NATH'L JACKSON.

Supt. Car Building and Repairs, F.R.R. Co.

Boston, March 9, 1849.

I hereby certify, that I have examined a box for Car Journals, invented by Mr. Lightner of Roxbury, Mass, and I have thought so well of it that I have adopted it on our railroad, I have known of its success on other roads.

S. M. FELTON,

Supt. F. R. R.

Office of the Central R. R., N. J., }
Elizabethtown, May 1849. }

H. F. ALEXANDER, Esq.,

Dear Sir:—Your favor, [wishing to be informed how we liked Lightner's patent axle boxes for R.R. Journals,] has been duly received; in answer we would say, we have used the boxes on Locomotive tenders one year, more or less, and on our cars some six months. I consider them the best boxes in every respect, I have ever used, or even seen used on any other roads—for safety, durability and the economy pertaining to all the details connected with the boxes and Journals of R. R. Car wheels; and we shall adopt them upon this road.

Yours Respectfully,

JOHN O. STEARNS.

Supt. Central Railroad Co., N. J.

Manchester, N. H., Nov. }
1st, 1850. }

H. F. Alexander, Sir,

I have used "Lightner's Boxes" under all the Cars of the Manchester and Lawrence railroad, and feel no hesitation in saying that I think them to be the best boxes now in use.

Yours, &c.,

THEODORE ATKINSON, Agent.

Cheshire R. R. Office, Keene, }
March 5th, 1851. }

Mr. H. F. Alexander,

Sir,—Lightner's Patent Boxes have been used on the Cheshire R. R. about a year, and have given the highest degree of satisfaction.

All the Passenger Cars now in use, and a considerable number of Merchandise Cars are furnished with them, and they will take the place of the Common Boxes on all the cars as fast as circumstances will permit.

Very Resp't.

L. TILTON,

Supt. Cheshire R. R.

Boston and Worcester Railroad, }
Boston, April 1st, 1851. }

H. F. Alexander, Esq.,

Dear Sir,—Lightner's Patent oil saving box for railroad cars, has been adopted by this corporation; we are taking out the common and substituting the

Lightner's at the rate of fifty boxes per month; it will soon take the place of all others, as it is decidedly preferable to any heretofore used by this corporation.

G. TWITCHELL, Supt.

Statement of amount of oil used on 32 8-wheel freight cars, on the Boston and Providence Railroad (with Lightner's Boxes) from March 10, 1849, to February 27, 1851, and upon 12 8-wheeled passenger cars from September 8, 1849, to February 27, 1851.

FREIGHT CARS.

Amount Oil.	No. months.	Amount Oil.	No. months.
1.—21 pts.	10	17.—23½ pts.	14
2.—19 " "	6	18.—23½ " "	11
3.—25 " "	13	19.—36 " "	21
4.—18 " "	7	20.—22 " "	10
5.—22 " "	12	21.—38½ " "	24
6.—24 " "	13	22.—29 " "	23
7.—20 " "	11	23.—35½ " "	23
8.—21 " "	11	24.—37½ " "	23
9.—23½ " "	10	25.—51 " "	23
10.—21 " "	9	26.—31½ " "	24
11.—20 " "	9	27.—28½ " "	23
12.—21½ " "	11	28.—36 " "	23
13.—19 " "	8	29.—50½ " "	24
14.—25½ " "	17	30.—50 " "	23
15.—20½ " "	10	31.—41 " "	23
16.—31 " "	18	32.—39½ " "	23

Total, 925½ pts. 510

PASSENGER CARS.

1.—19½ pts.	18	7.—30 pts.	18
2.—25½ " "	18	8.—25½ " "	18
3.—33½ " "	16	9.—29 " "	18
4.—19 " "	15	10.—46½ " "	17
5.—15 " "	15	11.—9 " "	9
6.—22 " "	18	12.—65½ " "	17

Total, 340 pts. 197

Averaging 1 4-5 pints of oil for freight, and 1 7-10 for passenger cars per month only!

All orders and enquiries promptly attended to.

BRIDGES & BROTHER,

No. 64 Courtlandt st., New York.

July 25, 1851.

To Boiler Makers, Engineers, etc., etc.

PATENT LAP-WELDED IRON TUBES,
Manufactured by the
BIRMINGHAM PATENT IRON TUBE CO.

UNDER

PROSSER'S PATENT,

from one and a quarter to eight inches in diameter.

These tubes are well known for their superiority over all other descriptions for Locomotive, Marine and other Steam Engine purposes, for which they are used very extensively in Great Britain and on the Continent of Europe.

For sale in quantities to suit purchasers, by

WILLIAM BIRD & CO.,

44 Wall st., New York.

July 26, 1851.

To Chief Engineers, Directors of Railroads, Canals, etc.

A Civil Engineer and Surveyor, who has been professionally engaged under the British Government, East India Company, etc., is desirous of obtaining employment as an Assistant. No objection to the South or West. Address for one month to C. E. & S., American Railroad Journal office. August 16, 1851.

To Engineers.

A NEW WORK on the Marine Boilers of the United States, prepared from authentic drawings, and illustrated by 70 engravings, among which are those of the fastest and best steamers in the country, has just been published by B. H. Bartol, Engineer, and is for sale at the store of

D. APPLETON & CO.,

Broadway.

September 1, 1851.

CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by POWERS & WEIGHTMAN, manufacturing Chemists, Philadelphia. Jan. 20, 1849.

European and North American Railway.

THE undersigned, the three persons first named in the first section of an act passed by the Legislature of Maine, and approved the twentieth day of August last past, entitled "An Act to incorporate the European and North American Railway Company," and being specially authorised therefor in and by said act, hereby give public notice that, for the purpose of receiving subscriptions to the stock of said company, as established by the act aforesaid, according to the provisions thereof, not exceeding forty thousand shares, books of subscription will be opened under the direction of the undersigned, according to the regulations prescribed, at the time and places following, viz:—On WEDNESDAY, the Twentieth day of August next,

At Calais, Maine, with Noah Smith, Jr., Esq.
Eastport, do. " Col. Bion Bradbury.
Machias, do. " Walker & O'Brien,
Ellsworth, do. " Seth Tisdale, Esq.
Oldtown, do. " Geo. P. Sewall, Esq.
Bangor, do. " Geo. W. Pickering, Esq.
Orono, do. " Hon. Israel Washburn, Jr.
Waterville, do. " Hon. Timothy Boutelle.
Brunswick, do. " Prof. William Smyth.
Augusta, do. " B. A. G. Fuller, Esq.
Belfast, do. " John Y. McClintock, Esq.
Portland, do. " John B. Brown, Esq.
Portsmouth, N.H. Hon. I. Goodwin.
Salem, Mass. Stephen A. Chase, Esq.
Boston, do. " Francis Skinner & Co.
Lowell, do. " John Wright, Esq.
Worcester, do. " Charles Washburn, Esq.
Providence, R.I., " Billings Brastow, Esq.
Hartford, Conn., " Hon. C. F. Pond.
New Haven, do. " Allen Prescott, Esq.
New York, N.Y., " R. & G. L. Schuyler, No 2 Hanover street.

Said books will remain open for ten successive days at the places and with the persons aforesaid. Dated at Portland, this sixteenth day of June, A. D. 1851.

ELIJAH L. HAMLIN,

ANSON G. CHANDLER,

JOHN A. POOR.

Trautwine on R. R. Curves.

By JOHN C. TRAUTWINE, Civil Engineer,
Philadelphia, Pa.

IN press, and will be published in a few days; accompanied by a Table of Natural Sines and Tangents to single minutes, by means of which all the necessary calculations may be performed in the field.

This little volume is intended as a field-book for assistants; and will be found extremely useful, as it contains full instructions, (with wood cuts) for laying out, and adjusting curves; with Tables of Angles, Ordinates, etc., for Curves varying from 13 miles, down to 146 feet Radius.

A portable Table of Natural Sines and Tangents to minutes, has for a long time been a desideratum among Engineers, independently of its use in laying out curves.

The volume is neatly got up in duodecimo; and handsomely bound in pocket-book form.

Sold by Wm. Hamilton, Actuary of the Franklin Institute, Philadelphia. Price \$1.

Also in press, and will be issued in a few weeks, "Trautwine's Method of Calculating Excavation and Embankment."

By this method, which is entirely new, (being now made known for the first time) the cubic contents are ascertained with great ease, and rapidly, by means of diagrams, and tables of level cuttings. Thin octavo; neatly half bound, \$1. For sale by Wm. Hamilton.

June 28, 1851.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

Notice to Contractors.*Steubenville and Indiana Railroad.*

PROPOSALS will be received at the Office of the Steubenville and Indiana railroad company in Steubenville, until the first day of October next, for the Grading and Masonry of the first division of the road extending from Steubenville to the Connotten valley and also for the construction of the entire road between Steubenville and Coshocton; and also distinct proposals for the construction of that portion of the road extending from Coshocton to Newark.

The entire length of this line is about 110 miles, and it contains work of all descriptions, in great variety, some of which is quite heavy.

Proposals will be received for the Grading and Masonry of the first division entire or in sections of about a mile each, the Company reserving the privilege to make such disposition of the whole work, as may appear most conducive to its interests.

Plans, profiles and specifications can be seen at the office of the Company after the 15th of September, and further information may be obtained on application to J. Blickensderfer, jr., Chief Engineer, or to the undersigned,

D. KILGORE, President.

Notice to Contractors.*Engineers Office, E. T. & V. R. R. Company, Greenville, E. T., June 5th, 1851.*

PROPOSALS will be received until the 1st day of October next, for the Grading and Masonry of that part of the E. T. & V. Railroad between the Eastern terminus of said road at King's Meadow, and Rheatown, in Greene County, a distance of about forty-seven miles. A large amount of very heavy work, both in Grading as well as Masonry, will be found on this division, offering strong inducements to able Contractors.

Maps, Profiles, and Specifications can be seen at this Office, on and after the 20th of July next.

The Company reserve the right to reject all, or any proposals that they deem unsatisfactory.

Proposals should be directed to the Treasurer and Secretary of the E. T. & V. Railroad Company, Jonesborough, E. T.

LLOYD TILGHMAN,
Chief Engineer.**Railroad Lanterns.**

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.

August, 16, 1849.

6m33

Railroad Iron.

THE Subscribers, Agents for the Manufacturers, are prepared to contract for the delivery of Railroad iron at any port in the United States or Canada, or at a shipping port in Wales.

WAINWRIGHT & TAPPAN,
29 Central Wharf.

Boston, June 1, 1851.

Bowling Tire Bars.

40 Best Flange Bars	5 1/2 x 2 inches,	11 feet long.
40 "	5 1/2 x 2 "	7 feet 8 in. long.
40 " Flat "	6 x 2 "	11 feet long.
40 "	6 x 2 "	7 feet 8 in. long.

Now in store and for sale by
RAYMOND & FULLERTON,
45 Cliff street.

**To Railroad Companies,
Machinists, Car Manufacturers, etc., etc.**CHARLES T. GILBERT,
NO. 80 BROAD ST., NEW YORK,

IS prepared to contract for furnishing at manufacturer's prices—
Railroad Iron,
Locomotive Engines,
Passenger and Freight Cars,
Car Wheels and Axles,
Chairs and Spikes.

Orders are invited; and all inquiries in relation to any of the above articles will receive immediate attention

THE Fourth Annual Exhibition of AMERICAN MANUFACTURES, by the MARYLAND INSTITUTE for the Promotion of the Mechanic Arts, will be opened in Baltimore on the 20th October, 1851.

The Exhibition will be held in the SPLENDID NEW HALL of the Institute, (fronting on Baltimore street) now being rapidly completed. Their edifice is centrally situated, chaste in its architecture, solid in its construction, and is by far the largest and most complete building in the United States, devoted to the Mechanic Arts. It may be added that this building is 355 feet long by 60 in breadth, with an average height of 68 feet, containing some twelve apartments, the largest of which is 255 feet by 60, and that the cost will be over \$70,000.

To this Exhibition, the Managers ask the attention of all engaged in industrial pursuits throughout the country, and cordially invite them to contribute specimens of their best productions for public inspection, and to compete for the prizes offered by the Institute. These prizes consist of GOLD and SILVER MEDALS, DIPLOMAS, etc., which were last year distributed as follows:—Gold Medals, 16; Silver ditto, 90; Diplomas, 60; besides 85 articles of Jewelry, etc., to ladies. Fair play will be scrupulously observed towards all, and every facility of Steam power, shafting, fixture, labor, &c., &c., will be amply provided free of expense. The machinery will be under a special superintendent, and a fine display of it is looked for. The last exhibition of the Institute was visited by more than 40,000 persons, and with their vastly improved accommodations and alterations, this number will be doubled at the coming display, embracing many Virginians, Pennsylvanians, and other strangers from the South and West.

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(**E**) The last nine in *Italics* are the Committee on Exhibition.)

The Hall will be opened for the reception of goods on MONDAY, 13th October; on the next Monday, 20th, at 7 P. M., the Exhibition will be formally opened to the public, and will positively close on Wednesday, 19th November. Articles for competition must be in the Hall by Thursday night, Oct. 16, unless delayed in shipment after starting in ample time.

Those who intend depositing, will give the Committee or the Agent, notice as early as possible, stating the nature of the goods, and probable amount of room required, to exhibit them to advantage.

Circulars, containing a view of the new Hall and the full regulations of the Committee, with special information, if required, may be had promptly, by addressing the undersigned, or the Institute's Agent, J. S. Selby, Baltimore, post-paid.

ADAM DENMEAD,

Chairman Com. on Exhibition for 1851.

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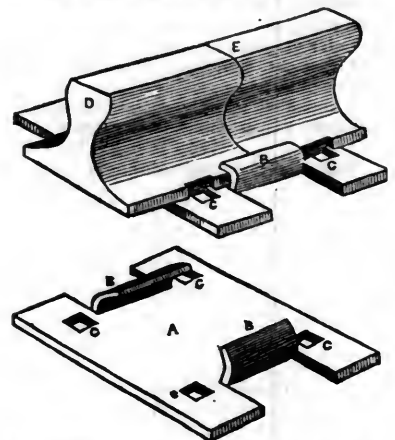
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May 9, 1851.

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For further information address,

N. C. TROWBRIDGE, Secretary,
Poughkeepsie, N. Y.

June 1, 1851.

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June 20, 1851.

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AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

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ASSISTANT EDITORS,

J. T. HODGE, *For Mining and Metallurgy.*

GEN. CHAS. T. JAMES, *For Manufactures and the Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & CO., 136 NASSAU ST.

Saturday, September 27, 1851.

• Railways in British North America.

Railway matters in British North America have recently taken a most unexpected turn; and, contrary to our expectation, the Province of Nova Scotia has turned its back upon Earl Grey's scheme for colonial railways. The recent elections in that Province have thrown Mr. Howe into a minority, as it now turns out; and instead of calling Parliament together on the 20th instant, as previously announced, the meeting of Parliament is postponed, and everything is thrown into confusion until the action of Parliament can be had.

We cannot but rejoice at this result, though it is quite unexpected to us under the circumstances.—It shows conclusively that the public opinion of the British Provinces, upon practical railway questions, is in advance of that of its politicians.

These matters are so full of interest, not only as railway questions, but in their political and com-

mercial aspects, that we think our readers will thank us for giving a history of them to the present time, or such of them as have not already appeared in the Journal.

It is known that the plan of the Quebec and Halifax line was started in 1845 as a rival to the Portland and Montreal railway. Major Robinson's report of his survey was published in the fall of 1848. This report was referred by Earl Grey to the Commissioners of Railways. Their report, which has never been published in this country, was as follows:

OFFICE OF COMMISSIONERS OF RAILWAYS, }
Whitehall, January 12th, 1849. }

SIR,—I have been directed by the Commissioners of Railways to acknowledge the receipt of your letter of the 22nd November, transmitting for their consideration, a copy of a report by Major Robinson of the Royal Engineers, on a proposed line of Railway between Halifax and Quebec, and other documents connected therewith, and requesting them to endeavor to ascertain whether the estimate in that report of the probable cost of the work and of the return to be expected from it may be relied upon; and I am to inform you that the Commissioners have carefully considered the subjects referred to them, and have directed me to make the following observations for the consideration of Lord Grey, which are chiefly founded on the facts contained in the report, as they have but little other data on which to rest their opinion.

With respect to the estimate given by Major Robinson of the cost of the proposed works, they consider that where so long a line is concerned, the average, which he has taken from the actual cost of other lines as nearly similar as possible in their character, affords good data for an estimate; and they therefore concur in the conclusion he has drawn from the average cost of the completed Railways in Massachusetts, and believe that, with prudent management, a single line of Railway between Halifax Harbor and the Saint Lawrence, opposite Quebec, if gradually constructed from each end, might be properly completed and supplied with a moderate plant for £5,000,000; but they fear that this sum would not be found sufficient if it be endeavored, by locating large working parties on different parts of the proposed line, to expedite its construction, for the expenses attendant on forming the necessary establishments for the laborers, on forwarding them thereto, and on providing for them during the season when their labor could not be fully employed on the line, would probably be very great, and any expenditure which may be thus incurred can hardly be considered as provided for in the above estimate.

With respect to the probable return from this capital, Major Robinson, it appears, considers that "there are very good general grounds upon which

to form an opinion that ultimately, if not at once, the line will, in a commercial point of view, be a very productive one;" but after giving this question the fullest consideration, as far as they possess the means to do so, the Commissioners are disposed to think, that, although in a military and political point of view the completion of a Railway between Halifax and Quebec may be of great importance, that as a commercial undertaking it is very doubtful whether it can, at least for a long time to come, prove profitable.

The Commissioners agree with Major Robinson in not attaching much importance to the direct intercourse between Halifax and Quebec; the passenger traffic between two cities, having respectively 45,000 and 25,000 inhabitants, and situated at the extremities of a Railway 635 miles in length, would be quite insignificant, and there are no towns of any size between the termini. The productions also of the several Provinces of British America are not of a nature to offer a prospect of any important interchange of commodities between them until new branches of industry have sprung up.

It is anticipated, apparently, that the principal immediate revenue would be derived from the transport of the agricultural produce of the western part of Upper Canada and of the parts adjacent thereto of the United States, to Halifax for exportation; that the construction of the Railway would lead to a rapid settlement of the Province of New Brunswick, and the development of its agricultural and other resources; that the Cumberland coal field, which is crossed by the line, would occasion a considerable traffic; and that the increased value likely to accrue to the ungranted lands adjacent to the Railway would be equivalent to a considerable diminution in the cost of its formation. But it is difficult to believe that the agricultural produce from the Settlements on the Lakes of Upper Canada, when either the lateness of the season or the rate of freight at Montreal prevents its shipment at that Port, will be forwarded by the circuitous route of the Saint Lawrence to Quebec, and thence by Railway to Halifax, instead of by the more direct existing communication through New York and Boston, or by that which the Montreal and Portland Railway, now constructing, will afford, especially when the Differential Duty which at present favors the exportation from a British Colonial Port has ceased; the early closing and the late opening of the navigation between Upper Canada and Quebec, on which the proposed Railway would be dependent for its connection with the west, would also induce Merchants in this country to send their orders in the spring and autumn as well as in the winter, to New York, Boston, or Portland, instead of to Halifax.

It is easy to understand that Montreal may be an important depot for the commerce of the district round the western lakes, and be able to share it with those ports of the United States upon the

lakes which have communication by Railways or inland navigation with the Atlantic; but it appears improbable that Quebec should obtain an important share of this trade. Produce at Montreal will be ready to be forwarded by the Saint Lawrence when freights are low, or to Portland by Railway one-half the length of that proposed between Quebec and Halifax; and the difference in freight and insurance at Halifax and Portland could not compensate for the additional water carriage of 180 miles between Montreal and Quebec, and the transport over 300 additional miles of Railway.

That the construction of the proposed line would tend to expedite the settlement of New Brunswick there can be no doubt, but the Commissioners fear that a long time would elapse before this effect could be produced to a sufficient extent to make the railway profitable, or even to affect materially the value of the land. Although the Provinces of British North America have had for a long time a considerable advantage with respect to the duties on which their produce was admitted into this country, and although a few years ago the produce of the United States was entirely excluded from our West India Colonies, it nevertheless appears that neither New Brunswick nor Nova Scotia can at present feed their own small population, and that the price, which in the principal towns of those Provinces affords a profit to the distant agriculturist of the United States, is not sufficient to attract capital to agriculture along the river Saint John. Of the traffic which the Cumberland coal-field might occasion, it is of course impossible to judge; within the Province, while it remains thickly wooded, it is not likely that the coal would obtain a profitable sale at any great distance from the pits; but if it be of such quality as would command a good price in the ports of the United States, it might prove remunerative to connect this coal-field by railway with one of the ports of Nova Scotia; it would not, however, be prudent, until this is ascertained, to calculate on any important return from this source.

The successful result which has attended the construction of railways in the United States, affords no grounds for anticipating similar results at present in British America.

Before any railroad in Massachusetts was commenced, that State contained a tolerable population per square mile; the city of Boston had nearly as many inhabitants as Quebec and Halifax united have at present, and a considerable commerce must have traversed the State and passed through its port. But New Brunswick has barely a population of five to the square mile, and Halifax, notwithstanding its beautiful harbor, is more important as a naval and military station, than as a trading port.

To return 3½ per cent. on an expenditure of £5,000,000, a net receipt of £175,000 will be required, and as the fixed charges contingent on the maintenance of 635 miles of railway, with the necessary buildings and staff, ought not to be estimated at less than £75,000 per annum, a receipt exceeding the carrying charges by £250,000 per annum, or £4,800 per week should be obtained to yield 3½ per cent. upon the expenditure; and if it be supposed that two trains passed over the line in each direction daily, or 28 trains per week, the gross weekly receipt to make this return, ought to be about £6,500, or rather more than £10 per mile.

On looking through some of the recently printed lists of the receipts on the different railways in England and Ireland, it will be found that on the East Anglian railway, connecting the town and port of Lynn, and also several minor towns, and a considerable agricultural district and population, with the railway system of this country, the weekly receipts have generally been less than £10 per mile, and that this has been also the case with the Belfast and Ballymena and on the Londonderry and Enniskillen railways, the last being open between Londonderry and Strabane.

If this can be the result upon a railway connecting any district of England and Ireland with the port on which it depends, there is, it is feared, but little probability that a railway between Quebec and Halifax could be profitable as a commercial undertaking for many years to come.

It must, however, be observed, that Major Robinson only considers it necessary for the receipts

to be sufficient to return an interest upon £3,000,000, as he proposes that the remaining expenditure shall be met by an issue of notes. But the Commissioners understand that paper is at present extensively used in the currency of the three Provinces, and they consider that any advantages which can be derived from an alteration in the principles on which it is issued, may be obtained independently of the construction of the railway, and that if it be possible for such alteration to be accompanied by an increase in the pecuniary resources of the three governments, the returns to be expected from any proposed application of those additional resources should be as carefully considered as the return from the employment of capital under any other circumstances.

I return, herewith, the maps and plans which accompanied your communication, and remain, &c.

H. D. HARNESSE, Captain, Royal Engineers.

H. Merivale, Esquire, &c. &c.

This report, so adverse to the scheme, was not generally circulated or known in the British Provinces, and further appeals were made to the British government, and various offers tendered in the form of grants of land, and of a portion of the interest, till the despatch of Earl Grey, of the 19th of June, 1850, put an end to all hope of Imperial assistance.

Simultaneously with this, the European and North American railway was proposed; and the Portland Convention assembled in July, 1850, adopted a plan for the carrying out of that work—and the Quebec line was regarded as abandoned. The mission of Hon. Jos. Howe to England, and the revival of the Halifax and Quebec line, are matters of recent date, and of general notoriety.

The Legislature of New Brunswick took up the plan of the Portland Convention, granted a satisfactory charter—and passed a Facility Bill, pledging to the company the credit of the Provinces to the amount of £250,000 sterling, and granting "all the ungranted crown lands for the width of five miles on each side of the line." While these matters were pending, the offer of Earl Grey to Mr. Howe was received.

The Legislature of New Brunswick promptly rejected Earl Grey's scheme. In Nova Scotia the question was postponed by Mr. Howe's request.—After various negotiations, an arrangement was proposed by which Canada, New Brunswick and Nova Scotia were to assume one third of the line each, on condition that New Brunswick should have the means to build the European and North American railroad, on her separate guarantee. To these terms Earl Grey assented.

The Parliament of Canada, after long debate, assented to the scheme, by a vote of 38 to 23 in the House, and a Bill has been passed to carry the same into effect.

Mr. Howe, after arranging affairs in Canada, returns to Nova Scotia, dissolves the assembly, and orders a new election.

In the following extract from Mr. Howe's official report to the government of Nova Scotia, we present the actual conclusion of the conference between the delegates of the three provinces at Toronto:

"That the line from Halifax to Quebec should be made, on the joint account and at the mutual risk of the three Provinces, ten miles of crown land along the line being invested in the joint commission, and the proceeds appropriated towards the payment of the principal and interest of the sum required.

That New Brunswick should construct the Portland line, with the funds advanced by the British government, at her own risk.

That Canada should, at her own risk, complete the line from Quebec to Montreal, it being understood that any saving which could be effected, within the limits of the sum which the British government are prepared to advance, should be appropri-

ated to an extension of the line above Montreal.

That, on the debt contracted, on the joint account of the three Provinces, being repaid, each should own the line within its own territory."

The scheme, thus modified, threw upon Nova Scotia the expense of constructing some 90 miles of the line beyond her own borders. The first rumors from Nova Scotia gave assurances of Howe's success, and of a majority in favor of the particular plan presented by Mr. Howe.

Complete returns from Nova Scotia have changed the aspect of the question; and it appears that in a House of 53 members, the parties stand 28 Conservatives to 25 Liberals, or a political majority against Mr. Howe of three members. The late House contained a liberal majority of nine.

This result may not be conclusive on the railway question; but from the tone of the Nova Scotia press, and the local influences likely to operate on the different members, we are convinced that Earl Grey's scheme cannot be carried in Nova Scotia.

All the recent movements in Nova Scotia show that Earl Grey's scheme is unpopular, and Mr. Howe's power is on the wane.

Immediately on the result of the election becoming known, the Hon. J. W. Johnstone, late Attorney General and the leader of the Conservative party, addressed his constituents on the subject of the railway.

The following is Mr. Johnstone's letter:

Halifax, 6th September, 1851.

TO THE CONSTITUENCY OF THE COUNTY OF ANNOBON.

Gentlemen—Your confidence in returning me as your representative, unpledged on the railroad question, demands my earliest acknowledgement, and that I should lose no time in making public my opinion on the mode that ought now to be adopted.

Several methods are open for consideration, but one seems to me so much preferable to the rest that I shall alone refer to it.

The St. John newspapers have already more than once given to the public an outline of an offer made by C. D. Archibald, Esq., on behalf of capitalists and contractors in England and Lord Elgin, to lay a railway through some part of the British North American colonies, at their own expense and risk, on receiving a certain extent of the ungranted land along the line, and a provincial engagement for a limited period, and to a limited amount, towards making good to them an interest at six per cent., should the road fail to realise that amount of remuneration.

This proposal would give Nova Scotia every advantage that any scheme can offer. The formation and working of the line, with money introduced into the Province, and the benefits of its expenditure, increased revenue, developed resources, etc.

It would facilitate and render more certain the extension of the line both to Quebec and Portland; while it would save the provinces from the hazard of the undertaking and the peril of a ruinous debt and ultimate taxation.

The annual sum pledged would be of such amount as never essentially to endanger our ordinary expenditure for education and roads, and the province being untrammelled by a heavy debt, would be free to seize the first opportunity of extending the line west and east.

I trust it is yet within our power, if the proper means shall be immediately used, to secure the advantages of this offer for Nova Scotia.

If such shall prove the case, I am prepared as your representative, to give the scheme my heartiest support, and to vote a liberal sum—say £10,000 a year for a definite period—say 20 years—towards securing the company an adequate interest on their outlay, if their earnings should prove deficient; on the condition that the railway shall be of a substantial character, be kept in repair, and be efficiently worked.

It is to be regretted that this scheme had not been officially presented to the people of Nova Scotia previously to the recent elections, as there are I be-

lieve few constituencies that would not have preferred it to the one offered for their adoption.

I have the honor to be,

Your obliged and faithful servant,
J. W. JOHNSTONE.

Mr. Johnstone's letter brought out the following reply from Mr. Howe:—

TO THE CONSTITUENCY OF THE COUNTY OF CUMBERLAND.

Gentlemen,—The leader of the Opposition having since the close of the elections, addressed a letter to his Constituents, on the subject of railroads, it may be expected by you and the public generally, that I should make a few observations on that letter.

The time is rapidly approaching, when every public man must make up his mind on the great question which is now before this country. The Platform Politician, or Railway Amateur, may still continue to express a new opinion every day, and advocate either policy, as interest or personal feeling prompts, but those who are members of the Legislature—the "regular actors,"—must soon deal with the railway question in a very different style.

The plan which Mr. Johnstone now puts forward is no novelty. It has not even the claim of originality to recommend it. To your minds it must be sufficiently familiar, as it was discussed at all the public meetings recently held in Cumberland: being ultimately abandoned there, as it had been previously at Halifax, with singular unanimity, all the members elected, pledging themselves to sustain the policy of the government which Mr. Johnstone, it would appear, condemns.

From 1844 to 1850 we were occupied with various plans, the basis of them all being the assumption that an English or Colonial company could be formed, who would take grants of land and money and give us railroads. My old constituents can bear me witness that I never opposed any of these plans. I acted for years as a member of the Halifax Committee, of which Mr. Cogswell was chairman, steadily supporting every proposition that appeared to promise a practical result, and as a member of the Legislature I voted all the facilities and subsidies which any body had the conscience to ask or courage to propose.

For six years the field was open to all adventurers. During that time, we had Mr. Young and Mr. Bridge's company and scheme. We had Mr. Timmis' company and scheme. We had Mr. Campbell's company and scheme. We had Mr. Cogswell's scheme—and it is said that Mr. Cunard had offered some suggestions to the British Government, predicated, like all others, upon heavy grants from the Imperial and Colonial Treasuries, and large concessions of Colonial lands. These schemes (with the exception of Mr. Cogswell's, whose views were I believe, submitted to Earl Grey by Mr. Uniacke) had the advantage of being pressed upon the Capitalists and Government of England by their promoters, in person. They all failed, and even when the governments of Canada had granted large sums of money and vast tracts of land, the grants lay like dead letters upon the Statute Book. The Government of England civilly declined the risk—the capitalists of England (and Mr. Archibald was in the midst of them all the time) never offered to assist us.

This was the state of things in August, 1850, when I propounded that policy which Mr. Johnstone now condemns, but which in less than a year has to say the least of it, drawn upon Nova Scotia the earnest gaze of our British and Colonial brethren—has breathed new life into every portion of British America; and what is more, produced seven millions of pounds sterling, and a scheme of inter-colonial improvement, which the most imaginative person a year ago, would scarcely have believed we should live to see accomplished.

You will bear in mind, then, that during the six years, from 1844 to 1850, Mr. Johnstone proposed nothing—that Mr. Archibald proposed nothing—that what others proposed ended in no practical result—and that this very scheme which Mr. Johnstone now wishes to substitute for mine, was proposed in 1849, and that the grant of £20,000 or 20 years, and ten miles of land, which he asks us to renew, has remained on the Statute Book, inoperative ever since.

What authority Mr. Johnstone has for using Mr.

Archibald's name, or referring to his plans, I know not. What I do know is, that up to this hour, no proposition, such as Mr. Johnstone refers to, has been made to Lord Elgin, or to either of the Provincial governments, with my knowledge. Mr. Archibald, while at Toronto, offered certain suggestions for obviating the difficulties which had arisen in New Brunswick. When Mr. A. himself makes these public, it will be time enough for me to state the objections I entertain to them, looking to the simplicity of inter-colonial arrangements, and to the honor and interests of New Brunswick alone. It is enough for me to say here that, as regarded Nova Scotia, Mr. Archibald proposed no relief from any obligation which, up to that moment she had assumed. *She was to borrow all the money she required to construct the line across her own territory, pledging her own revenues and resources for principal and interest.* The company which Mr. Archibald proposed to form, were to have the expenditure of this money, under circumstances which would secure to them the contracts.

Mr. Johnstone refers to the New Brunswick papers. He might as well have referred to this paragraph, which appeared in the St. John organ of the New Brunswick government on the 2d inst. The Editor of the New Brunswicker, commenting on the Courier's version of Mr. Archibald's scheme, says:—

"The Courier states that the proposal was endorsed and recommended by Earl Grey; *this is wholly untrue.* The statement of the Courier that the proposal offered to construct the Halifax and Quebec railway on the guarantees formerly offered by the colonies is equally untrue. No such offer is or has been made; the statement of the Courier on this point is a pure invention. The Courier's representation, as to the proposal for the construction of the European and North American railroad, is altogether a misstatement. The 'solitary writer' of the Courier has quite exceeded himself on the occasion."

Of the scheme itself but little need be said. By risking £35,000 a year for a few years, Nova Scotia can secure railway communication with the entire continent, and ultimately own a road which will yield an immense revenue. Mr. Johnstone would have us give £20,000 sterling a year, or £25,000 for twenty years, and ten miles of land, and ultimately own nothing. By the one mode we must continue to pay till the road yields six per cent. By the other we have nothing to pay when it yields three and a half per cent. When it yields six and a half per cent. it will pay for itself, and the Province will then own a property which will produce a million of money every 22 years.

I have but one word more to say about schemes and companies generally. Had Mr. Archibald, [who is a personal friend to whom I am indebted for much courtesy while in England] or any body else, come to me when I entered London, with a company prepared to build our railroad at their own risk, or even upon the terms already granted by the Colonial Legislatures, my task would have been simple and my labor light. On the contrary, I found lots of embryo companies, and individuals zealous to spend money raised upon our credit, and to speculate in colonial lands. I found none who were willing to run the slightest risk, or to advance funds not guaranteed by the colonial or imperial legislature. I labored to work out my own policy, in the full conviction that none were to be found. When I had succeeded, and it was known that so large a sum, advanced or guaranteed by the imperial government, was to be expended in the colonies, the question, who should spend it, became deeply interesting. It is deeply interesting now. The interest we have in it my friends, is this—having got the money cheap, to make it go as far as possible. Assuredly it is not to embarrass ourselves with companies and associations who shrunk from us in "our extremity," but who appear very anxious to aid us now that we can do without them. Entertaining this opinion strongly, I still adhere to the belief which I expressed at the Mason's hall in May—which was reiterated at St. John, Toronto, Montreal and Quebec, that if we can bring into these colonies British contractors of eminence, on fair terms, it will be sound policy. If they come, as contractors, I see no reason why they should not expend, for their own and our advantage, the whole

seven millions. If they come as co-partners, we shall be at their mercy, and involved in complications and embarrassments which I desire to avoid.

The course which Mr. Johnstone and some of his friends have taken on this railroad question, I deeply regret. The Portland company has been the excuse for obstructing and embarrassing the government for nearly a year. That has now ceased to animate the hopes of any rational person even in New Brunswick. Mr. Archibald's company will serve the turn for a few weeks or a few months longer.

For Mr. Johnstone's conduct there is this excuse. At the great meeting in Temperance Hall, when the enthusiasm of his friends and supporters would have borne him along to share the hazard and the honor of a proposition which they universally approved, he reserved to himself the right of obstruction—the power to do mischief. Had he acted with more magnanimity, the lines of party distinction in Nova Scotia would henceforward have been faint indeed—that condition of things which many profess to consider so desirable, would have already arrived. Mr. Johnstone himself would have been asked to form part of the delegation to England, or to name a friend in whom he had entire confidence. The course he took subsequently rendered this impossible; and although the personal references to myself, made in my absence, were conceived in a better spirit, I have always regretted that an opportunity was flung away for sacrificing upon the altar of our common country the bitterness of bye-gone years.

Of the gentlemen who made no such reservation—who pledged themselves to each other and to me at Temperance Hall, and who have since violated that pledge in every essential form, what shall I say? Before they gave it, I told them that it would require us all to build these railroads. They told me to go forward, and that I should have the support of all. The mayor and council of Halifax, two thirds of whom were Conservatives, reiterated that assurance two days after, in their address to Sir John Harvey. In the strength of that assurance the government adopted the measure. In entire reliance upon the pledged faith of gentlemen whom I believed would die rather than break that pledge, I went to England—to New Brunswick—to Canada. The moment the negotiation was closed, the House was dissolved without even a visit of explanation to any distant constituency. Having offered the seat which I abandoned in Halifax to Conservatives, to balance the one I might win in Cumberland, I went to that county to vindicate the policy which we all professed to approve at Temperance Hall, and to secure its representation from adherence to the antagonistic principle. The Attorney General went to Cape Breton to sustain our railroad policy in that island, from whence, on various grounds, opposition was to be apprehended. Had either of us, before leaving town, been told that any number of the persons who had pledged themselves to us both—upon whose honor we had relied at every stage of our progress, were lending themselves to an organized system of opposition, based upon the very policy which they urged us to pursue with respect to the railroads, we could not have believed it. It was not till I reached Cumberland that I became aware of the recklessness with which the railways were to be sacrificed to party purposes. I felt then as a man feels when betrayed into an ambush, and acted accordingly. Having cut my way through unscathed, with friends enough around me to render open assault not dangerous, I am now surveying the resources of the position without any feeling, but with the full conviction on my mind that *the railways will be built*—with the aid of honorable men among the conservatives, if they choose to aid us; if they do not, then, after a fair manly battle in every county in Nova Scotia, in which treachery and surprise can supply no advantage, and in which the public will have this security, that men on all sides will have been committed, by their votes and speeches, to distinct propositions.

The executive council of New Brunswick meets on the 14th inst. They will then decide when the legislature of that province is to assemble. If New Brunswick accepts the terms offered her by Canada and Nova Scotia, our house will probably be convened at once, to ratify those terms. If this is done,

we may then go to work in earnest; if it is not, we are adrift upon the sea of negotiation and speculation again, and shall have leisure enough to communicate our thoughts to each other.

In the meantime, I have the honor to remain
Very sincerely yours,

JOSEPH HOWE.

Halifax, September 8, 1851.

This address of Mr. Howe led to the immediate publication of the original propositions submitted by Mr. Archibald to Lord Elgin on the 21st of June, which are in substance as follows:

"In order to carry out a complete railway scheme, commensurate with the prospective requirements of the British North American Provinces, provision must be made for the construction of a grand trunk line from Halifax to the American frontier at Detroit. Of this line the only part now actually in progress is the Great Western, between Hamilton and Windsor, and it is supposed that the same company will construct the link between Hamilton and Toronto. If all the provinces were to agree to accept the terms proposed by the Imperial government, provision would be made for the whole line from Halifax to Quebec or Montreal; but whilst it is not quite certain that either province will accept those terms, New Brunswick has actually rejected them. Assuming for the present, however, that Canada and Nova Scotia will concur in accepting the offer of the British government, it remains to be considered by what means the New Brunswick section can be carried through, and how the great trunk line can be extended from Montreal to Toronto. I hope to be able to suggest a plan, that shall eventually accomplish the whole object, without pressing unduly upon the resources of that province.

The configuration and geographical position of New Brunswick, render it necessary to the completion of a perfect railway system, that the province should be traversed its entire length by two main lines, and, in the present condition of its finances, the people appear to be unwilling to assume the burden of constructing both, even with the liberal proffer of aid from the British government. In view of the construction of one only of these lines, great differences of opinion and angry discussions have arisen, as to their comparative importance. The northern section of the province naturally contends for the northern line, while the southern division, including the commercial capital, as strongly advocates its favorite scheme. For my own part, I regard them both as of equal importance, and each indispensable to the requirements of its particular district. It is to the all prevailing sense, not in New Brunswick alone, of the importance of the European and North American line that we owe the revival of the Halifax and Quebec project, which had been all but abandoned; and if this latter line should now weigh heavily in the general scale, it is due not so much to any special provincial objects that it serves, as to its bearing upon emigration and colonization, which are questions rather of national concern.

It is estimated that there are in New Brunswick from twelve to fourteen millions acres of ungranted lands, which, however, are at the present moment comparatively worthless. In case of urgent necessity, the province could hardly realise £100,000 from the whole of this vast territory: and at the rate at which the lands are now taken up, several centuries must elapse before they will be fully occupied. It is one of the main features of the plan, that I am to propose, to make these wilderness lands available for the completion of the railways; and at the same time, the field of a system of colonization that cannot fail to be productive of the greatest benefits to the province, as well as to the mother country.

The parties whom on this occasion, in the absence of their more able representative, it falls to my lot to personate, are an association of British capitalists and contractors, limited in point of numbers, but powerful from their influence, combinations and means. The chief among them, are the men who have taken the foremost lead in the construction of those great lines of railway and other public works, which have been undertaken in Gt. Britain and upon the continent of Europe during the last 25 years. It will readily be believed, that

men of this stamp are not at all under the necessity of seeking employment for their capital or connections in North America; on the contrary, they are precisely the parties upon whom the largest enterprises in Europe are continually pressed, and at this moment they are pausing upon very inviting offers, on the part of the French government, until the fate of these Anglo-American railways shall be decided. Upon certain conditions, which I do not think will appear at all unreasonable, these parties are willing to make these countries, upon which British capitalists have hitherto turned their backs, the exclusive field of their future operations.

New Brunswick has already granted to the European and North American line a liberal charter of incorporation, accompanied by Facility Bills, which concede a tract of the ungranted lands along the line, and provide for the subscription on the part of the Province of £250,000 sterling, to the capital stock of the company. Towards the Halifax and Quebec or Northern line, the Province has appropriated £20,000 currency per annum for twelve years; has agreed to provide the breadth of way and stations, and has conceded a tract of land along the line estimated to contain about two million acres.

Supposing that all other plans for obviating the difficulties that have arisen in New Brunswick should miscarry, I propose, on the part of the Association which I represent, to construct the European and North American line through New Brunswick, agreeably to the Charter of Incorporation and the conditions of the Facility Bills, and to subscribe for this purpose all the capital not already taken up.—I therefore provide for the accomplishment of this project, upon the precise terms already arranged by the legislature.

With respect to the Halifax and Quebec or Northern line through New Brunswick, I propose that an act corresponding as near as circumstances will admit, with the charter of the company, shall be passed for the purpose of incorporating a company with a capital of £3,000,000 sterling; and all I ask the Province to do, in addition to what she has already pledged, is to double the quantity of wilderness lands on both lines, and to subscribe £250,000 sterling to the stock of the Northern company; or at her option to divide that amount between the Northern and Southern lines. In either case, the Province to be entitled to add two Directors to the Board of the Northern company. This being done I propose in like manner on the part of the Association, to organise the company by subscribing all the capital that shall not be taken up in New Brunswick. It is understood that the people of the Province are to have the privilege of subscribing to any extent they please, to the stock of both companies. These offers pre-suppose that the legislature will pass Facility Bills, securing the pecuniary grant, and conferring all needful powers and privileges for the settlement, disposal and management of the conceded territory, which it is understood, is to be vested in the company in fee simple, with the timber, mines, minerals and appurtenances; subject of course to such restrictions and conditions, as shall prevent the company from disposing of the lands, except in a ratio proportionate to the progress of the railway.

It is quite clear that with all that New Brunswick is expected to do, a very large amount of capital will remain to be provided by the company, and that too for the construction of the line of railway which it is generally believed, will not, for an indefinite period, pay its working expenses. So far as New Brunswick is concerned, she must begin to derive immediate benefit from the proposed arrangement. *Ex necessitate*, the company must expedite by every possible means, the sale and settlement of their lands and the development of their resources; the coal fields will be opened up, iron mines will be worked, foundries, machine shops and factories established. The expenditure upon the works will facilitate the settlement of the lands along the line, and the improvement of these lands will bring traffic to the railway. It is not too much to expect that the population and revenue of the Province will be doubled within ten years and long before the £20,000 a year guaranteed to the northern line shall become payable, the amount will be anticipated in the Exchequer from the effects of these operations; and thus the end, in advance of

its accomplishment, will furnish the means to this extent. This is no fancy picture nor does it overshadow half the realities of such a future as New Brunswick may now command.

I come now to another very important part of the general scheme, namely, the section of the Grand Trunk line from Montreal to Toronto. The capital required for this portion of the work may be estimated at about £1,600,000 sterling, one half of which would be advanced by the Province under the provisions of the act in this behalf. It is assumed that at least £300,000 would be provided by the municipalities along the line, leaving about £500,000 to be subscribed by other parties. In the event of a favorable charter of incorporation being granted, I have no doubt that, as a part of the general plan, the whole stock that shall not be taken up in the Province will be immediately subscribed. It would appear only a reasonable stipulation in this case that the Provincial advance, which will be secured by the first mortgage on the line and its tolls, shall not bear more than four per cent interest until the line shall pay a clear dividend of four per cent upon the whole paid up capital. The amount subscribed by the company to form the second charge on the line and [after payment of the Provincial interest] to be entitled to six per cent., before any interest shall become payable upon the contingent of the municipalities, which, however, shall in their turn, be entitled to a like interest of six per cent. when the profits will allow. The surplus *ultra*, if any, after the payment of six per cent on all the charges, to be received by the company or appropriated to form a sinking fund towards the extinction of the Provincial debt. It is understood that the municipalities have already agreed to some such arrangement, and I see no difficulty in organising a company on the above basis so soon as an act of incorporation shall be passed by the legislature.

It is assumed that the whole line from Halifax to its extreme Western terminus is to be carried out upon a uniform plan, and that all the Provinces will readily allow Her Majesty's Government to nominate the Engineer in Chief, who will of course be assisted by other Engineers to be appointed on behalf of the respective Provinces.

It is not too much to suppose that both the Imperial and Provincial Governments would greatly prefer these great works should be undertaken by British contractors; and it is assumed that the associated contractors, whose names have been submitted to Her Majesty's Government by William Jackson, Esq., M.P., are to have the entire contracts for all the contemplated lines upon such fair and equitable terms as may be agreed upon. These parties do not expect or desire any pecuniary preference, but as they and their associated capitalists are about to incur heavy risks, not ordinarily undertaken by contractors, they feel that they are justified in seeking to guard themselves against competition that might have the effect of enhancing the price of labour and materials to a ruinous extent. The lines to be made by funds provided under the Imperial guarantee, could be executed agreeably to estimates to be furnished by the board of engineers, or they might be constructed under inspection, upon terms of allowing the contractors a certain commission to be agreed upon. At all events, it will not be difficult to settle the "fair and equitable terms" upon which they are willing to engage the whole scheme.

I would beg to suggest that the pending negotiation between the several Provinces be brought to issue as speedily as possible. The parties on whose behalf I submit these proposals and to whom the magnitude of the enterprise is its chiefest recommendation, are abundantly able to accomplish the whole design and upon the conditions and with the encouragement I have indicated, I believe that they will be willing to undertake the task immediately. The most urgent parts of the work seem to be the section through Nova Scotia, the European and North American line through New Brunswick, and the line from Montreal to Toronto, which might all be commenced simultaneously, as soon as the needful legislative action shall have taken place."

The following is the substance of the reply of Mr. Archibald to Mr. Howe:—

"TO THE PEOPLE OF NOVA SCOTIA."

Fellow countrymen—It is one of the disadvantages of the life of locomotion I am condemned to lead, that it is impossible for me to keep *en courant* with the events of any particular locality. I have however of late often heard and sometimes seen, that my name has appeared in the public prints of this and the neighboring Province, in connection with some Railway intelligence:—but until the publication of Mr. Howe's letter in the *Sun* of yesterday, I have not observed anything that seemed to require any notice on my part.

Although Mr. Howe, in the letter to which I have just referred, does not bring against me any specific charge, the inference is that I have brought forward some scheme or adopted some course calculated to embarrass this question. Let us enquire how far I am obnoxious to such an imputation.

Mr. Howe in various addresses has spoken of the Seven Millions of Sovereigns as if we already actually had them in a *bag*; and in his letter of yesterday he says, "having got the money cheap, our interest is to make it go as far as possible." Now if this were really the fact there would be little ground for all those apprehensions which the friends of the railroad entertain; but so far from it there has hitherto, as far as I am aware, been no compliance with the conditions which justify our expectations of ever getting it at all.

In Mr. Howe's letter of the 10th March, it is expressly stated that "Her Majesty's Government would not feel justified in asking Parliament to pledge the credit of the country, until arrangements should be made with the Province of Canada and New Brunswick, by which the construction of a line of railway, passing wholly through British territory from Halifax to Quebec or Montreal, shall be provided for to the satisfaction of Her Majesty's Government." In reply to this, Mr. Howe, on the 12th March, assures Lord Grey, "of the sincerity of his belief that the North American Provinces will cheerfully, and to the full extent of their means exert themselves to secure upon the terms proposed, the completion of the great national highway, for the construction of which Her Majesty's Government are prepared to propose to Parliament to advance the funds or pledge the national credit." Regarding Mr. Howe as the exponent on this occasion, of the feelings and wishes of the people, not only of Nova Scotia, but of the other Provinces it was with no little sorrow and surprise, that shortly after his departure, we received in England accounts that the two Houses of Legislature in New Brunswick had by almost unanimous acclaim, rejected the whole plan. It did occur to me at this juncture, that the man who should devise ways and means of obviating this unexpected difficulty, would be rendering good and acceptable service to all who were sincerely desirous of seeing this great work carried out. For special reasons, I will not particularise the negotiations and consultations that ensued; suffice it to say, that I submitted a plan in writing, which was regarded with so much favor that it was considered desirable to bring it under the notice of the Provincial authorities as speedily as possible. I left England in haste, and proceeded without delay to Toronto, fondly imagining that I should be welcomed by my good friend, Mr. Howe, as a messenger of glad tidings.

The proposals, which I submitted to the Governor General on that occasion, have now been made public, with Mr. Howe's consent; and that they should have so long remained dormant, is certainly no evidence of desire on my part to embarrass or unduly interfere. I invite Mr. Howe "to state the objections he entertains to these proposals," and that too with special reference "to the honor and interests of New Brunswick," which I assuredly have no wish to assault. Well may he say of my plan, that it has not the least merit of originality, for it is a simple adoption of those *faits accomplis* of legislation, which, like our own upon the same subject and at the same epoch, were carried with a unanimity, which I fear is not likely soon to characterise future proceedings. The plan was intended and, I believe, every way calculated to obviate the whole difficulty that has arisen in New Brunswick, and I must leave it to the common sense of the public, to say whether it does not look more like "a provision for a continuous railway through British territory," than the last recorded

acts of the New Brunswick Legislature; and more like an approach to compliance with those conditions, which are to justify the Secretary of State in appealing to the British Parliament, than even the plan upon which we are told the Governments of Nova Scotia and New Brunswick are of accord, but which still requires the sanction of their respective Legislatures. I have already paid a deserved tribute to the liberal and enlightened policy of New Brunswick, in regard to these undertakings. Her people are distinguished for enterprise and intelligence; amongst her public men I have valued personal friends whom I know to be every way capable of protecting their own and their country's interests. I have not presumed to do more than present a plan, based upon their own recorded measures. If they accept it, well and good; if not, I have no intention of bringing further influence to bear, but I incline to think, that it will not be without much persuasion that the people of that Province will be induced, after opening up their own wilderness, to construct 60 miles of railway through the howling waste of Lower Canada.

Mr. Howe says, that "as regarded Nova Scotia, Mr. Archibald proposed no relief from any obligation, which up to that moment she had assumed. She was to borrow all the money she required to construct the line across her own territory, pledging her own revenues and resources for principal and interest." My answer to this is, that I only felt myself called upon to deal with the difficulty that had arisen. New Brunswick had fallen from the scheme, and Canada and Nova Scotia were separated by an impassable void. What then was the conduct of those capitalists, who it is said have never offered any assistance? In the face of all the discouragement of the rejection on the part of the Province of these much vaunted offers, they threw themselves into the breach, and "provided for the construction of a continuous railway from Halifax to Quebec," and the European and North American line into the bargain. But let us see if it be true that "I proposed no relief for Nova Scotia." If "she was to borrow all the money she required to construct the line across her own territory," I, at least saved her the necessity of borrowing any more, and from the burden of "pledging her own revenues and resources for principal and interest," for building and maintaining eighty miles of railway beyond the limits of her territory and dominion.

I come now to speak of the parties on whose behalf these proposals were submitted and to whom Mr. Howe has made frequent allusion; amongst the number, are several with whom I am on intimate terms, and all of them are well known in England as men of wealth and influence. With respect to their character and standing, I may confidently refer to Her Majesty's Ministers, past, present and to come; nay, more, I will refer to the Prince Consort to say who, of all the great and enlightened with whom he has lately been associated, has contributed most to the success of that mighty enterprise which has conferred such distinction on this year of grace. Full well I know that he will indicate the man whose name stands foremost on the roll of that Association, which I hope and believe, if we understand our true interests is destined to confer great benefits upon these North American Provinces.

Not having the advantage of any constituency to whom I can appeal, I claim the privilege of addressing myself to the whole body of my fellow countrymen. That our railroads, not only the trunk but the branches also, will speedily be undertaken I firmly believe, and all the more speedily if party jealousies and influence could be for a time suspended. For my own part I have every motive and cue for action and will not relax an effort whilst I have ability to move in so good a cause.

I have the honor to be

Your very obedient Servant,

C. D. ARCHIBALD.

Halifax, Sept. 9. 1851.

Indiana.

The New Albany railroad is finished to Buena Vista, a point 10 miles beyond Salem, and 26 miles this side of Bedford, and the work is progressing rapidly.—*Louisville Courier*.

Steam Boilers, and the Causes of their Explosions.

Continued from page 589.

5th. Explosions arising from mismanagement or ignorance.—To mismanagement, ignorance and the misapplication of a few leading principles in connexion with the use and application of steam, may be traced the great majority of accidents which from time to time occur. Many of these accidents so fruitful of the destruction of property and human life, might be prevented, if we had well constructed vessels judiciously united to skill and competency in the management. To convey a few practical instructions to engineers, stokers, and engine-men, would be an undertaking of no great difficulty. A young man of ordinary capacity would learn all that is necessary in a few months; and if placed under competent instructors, he might be made acquainted with the properties of steam, its elastic force at different degrees of pressure, the advantages peculiar to sensitive and easy-working safety-valves the necessity for cleanliness and keeping them in good working condition; the use of water gauges, fusion plugs, signals, &c., &c., connected with the supply and height of water in the boiler. The dangers to be apprehended from a scarcity of water, the danger of explosion when the engine is standing, or when the usual channels for relieving the boiler of its surplus steam are stopped,—all these are parts of elementary instruction which the stoker, as well as the engineer, should be acquainted with, and no proprietor of a mill, captain of a steamship, or superintendent of locomotives, should give employment to any person unless they can produce certificates of good behaviour, and a knowledge of the elementary principles of their profession.

If these precautions were adopted, greater care observed in the selection of men of skill and responsibility in the construction of boilers, and a more strict and rigid code of laws in the management, we may look forward with greater certainty to a considerable diminution, if not a prevention, of those calamitous events which so frequently plunge whole families into mourning by unexpected and instantaneous death.

As an individual, I would cheerfully lend my best assistance to the development of a principle of instruction calculated to relieve the country of the ignorance which pervades that part of the community on which the lives of so many depend. A resolution on the part of those who employ persons of this description, and whose interests are so much at stake, to take none whose knowledge and character does not come up to the requisite standard, and pay for it, would soon find, from the economy of the management and the increased security of their property, a very important change in all the requirements of the economy, as well as the application of steam. How often do we find implements of danger, and vessels containing the elements of destruction, in the hands of the most ignorant and reckless practitioners, whose insensibility to danger, and total incompetency to judge of its presence, renders them, above all others, the most unfit to be employed. And why? because they are the very persons, from their defective knowledge, to increase the danger and aggravate the evils they were selected to prevent. It is not the first time that engineers, to secure (if I may use the expression) an insane pressure, have fastened the safety valves and screwed-down the steam-valve, closing every outlet, without ever thinking of the fire that was blazing under the boiler.

Under such circumstances, what could be expected but a blow up? A madman rushing with a lighted match into a powder magazine could not act with greater insanity: such, however has been the case, and that arising from want of thought, or what is worse, from the total absence of knowledge which it was the duty of his employer as well as himself, to have possessed.

I have on former occasions, stated that I am not an advocate for legislative interference, either in the construction or management of boilers, but, seeing the dangerous tendency of these vessels when placed under the control of ignorance and incapacity, I would forego many considerations to encourage a more judicious and intelligent class of men than has hitherto been employed in the care and management of steam and the steam-engine. The reforms necessary to be introduced may be

done by the owners of steam-engines, steam-boats, railways, and others engaged in the use and application of this important element. A desire to enforce more judicious and stringent regulations, to remunerate talent, and to employ only those whose good conduct and superior knowledge entitle them to confidence, is the only sure guarantee of public safety and the prosperity of the employer.

Lastly, *The remedies applicable for the prevention of accidents arising from explosion.*—Having noticed, in the foregoing remarks, most of the causes incident to boiler explosions, it now only remains to draw such inferences as will point out the circumstances which it is desirable to cultivate, and others which it is desirable to avoid. These circumstances I have endeavored to class in such way as to bring the subject prominently forward, and to point out, under each head, first, the causes which lead to accident; and, secondly, the means necessary to be obtained in avoiding it. In a general summary it may not be inexpedient briefly to recapitulate these statements, in order to impress more forcibly upon the mind of those concerned, the necessity for care and consideration in the use of one of the most powerful agents ever placed at our disposal.

One of the most scientific nations of Europe places the greatest confidence, as a means of safety, on the use of fusible metal over the furnace. These plates are alloys of tin and lead with a small portion of bismuth, in such proportions as will ensure fusion at a temperature something below that of molten lead. In France the greatest importance is attached to these alloys, and in order to ensure certainty as to the definite proportions, the plates are prepared at the royal mint, where they may be purchased duly prepared for use. In this country these alloys are not generally in use, but in this respect I think we are wrong, as boiler explosions are not so frequent in France as in this country, and high-pressure steam, from its superior economy, is more extensively used in France than in England. In my own practice, I invariably insert a lead rivet one inch in diameter immediately over the fire-place, and as lead melts at 640 degrees, I have invariably found these metallic plugs a great security in the event of a scarcity of water in the boiler. I am persuaded many dangerous explosions may be avoided by the use of this simple and effective precaution, and as pure lead melts at 600 degrees, we may infer from this circumstance that notice will be given and relief obtained before the internal pressure of the steam exceeds that of the resisting powers of the heated plates. As this simple precaution is so easily accomplished, I would advise its general adoption. It can do no harm to the boiler, and may be the means of averting explosions and the destruction of many valuable lives.

The fusible metal plates, as used in France, are generally covered by a perforated metallic disc, which protects the alloy of which the plate is composed, and allows it to ooze through as soon as the steam has attained the temperature necessary to ensure the fusion of the plate. The nature of the alloy is, however, somewhat curious, as the different equivalents have different degrees of fluidity, and the portion which is the first to melt is forced out by the pressure of the steam, leaving the adhesion of the less fusible parts in a most imperfect state, incapable of resisting the internal force of the steam. The result of these compounds is, the fusion of one portion of the alloy and the fracture of the other, which is generally burst by pressure.

This latter description of fusible plates is different to the lead plug over the fire, as the one is fused at 600 degrees by the heat of the furnace, and the other by the temperature of the steam raised to the fusible point of the alloy, which varies from 280 to 350 degrees.

Another method is the bursting plate, fixed in a frame and attached to some convenient part of the upper side of the boiler; this plate to be of such thickness and of ductility as to cause rupture whenever the pressure exceeds that of the weight on the safety-valve. There can be no doubt that such an apparatus, if made with a sufficiently large opening, would relieve the boiler; but the objection to this and several other devices is the frequent bursting of those plates, and the effect every change of pressure has upon the material in reducing its powers of resistance, and thus increasing uncer-

tainty as to the amount of pressure in the boiler, as well as the constant renewal of the plates.

It has already been noticed that one of the most important securities against explosions is a duly proportioned boiler, well constructed, and to this must be added ample means for the escape of the steam on every occasion when the usual channels have been suddenly stopped. The only legitimate outlets under these circumstances appear to me to be the safety-valves, which connected with this inquiry are indispensable to security. Every boiler should, therefore, have two safety valves, of sufficient capacity to carry off the quantity of steam generated by the boiler. One of these valves should be of the common construction, and the other beyond the reach of the engineer or any other person.

Defective construction is unquestionably one of the greatest sources of the frightful accidents which we are so frequently called upon to witness. No man should be allowed unlimited exercise of judgment in a question of such vital importance as the construction of a boiler, unless duly qualified by matured experience in the theoretical and practical knowledge of form, strength of materials, and other requirements requisite to ensure the maximum of sound construction. It appears to me equally important that we should have the same proofs and acknowledged system of operations in the construction of boilers, as we have in the strength and proportions of ordnance. In both cases we have to deal with a powerful and dangerous element, and I have yet to learn why the same security should not be given to the general public as we find so liberally extended to an important branch of the public service. In the ordnance department at Woolwich (with which I have been more or less connected for many years), the utmost care and precision is observed in the manufacture of guns, and the proofs are so carefully made, under the superintendence of competent officers, as to render every gun an engine of perfect safety to the extent of 1,000 to 1,200 rounds of shot.

Copper Smelting and Manufacturing.

About four years since, the Pittsburgh and Boston mining company erected an establishment on the Monongahela river, two miles above the iron city, for smelting their own copper from the Cliff mine. It was the first undertaking of the kind on an extensive scale in the United States, and they succeeded to their satisfaction in smelting and refining the copper, and produced an article that at once commanded the highest price in the market. We find the following description of their establishment in the Lake Superior Journal:—

"This establishment is capable of turning out six or eight tons per day of pure metal. It is beautifully and conveniently situated, so that the copper is transported by water directly from Cleveland to the place of destination at the works. The masses, some of which frequently weigh from two to three tons, are lowered through the tops of the oven-shaped furnace, and after going through this fiery ordeal and being brought to the required state of refinement, the liquid metal is dipped out by means of ladles and run into moulds of different kinds, the smallest forming the common ingot of 15 to 20 pounds in weight, and the largest the flat cakes 1 by 14 feet square, 2 inches in thickness, and of the right description for the rolling mills.

In connection with the smelting establishment, and a few rods from it, Messrs. Hussey & Avery have erected a rolling mill at an expense of \$100,000. There are two sets of rollers, through which the large cakes of roasted copper are passed till they are rolled down to the thin and beautiful sheets sold in market. These sheets are manufactured in the same building into various kinds of stove boiler bottoms and other articles requiring to be tinned; and this is the first time, we believe, that native American copper has been thus manufactured to any extent. The copper for every purpose has been found to be of the most superior quality and the demand for it is growing better every day. The enterprising proprietors propose to connect other kinds of copper manufacturing to their establishment, such as that of making brass and brass wares of various descriptions, and expect eventual-

ly to manufacture all or most of the products of the smelting establishment."

At Cleveland quite an extensive smelting establishment has lately gone into operation, the following description of which was published in the Cleveland Plaindealer a few weeks since:

"We visited yesterday, by the politeness of Mr. J. G. Hussey, the smelting works of J. G. Hussey & Co., located in a beautiful situation on the canal, near the Cleveland and Chagrin Falls plank road. The company have five acres of land, sufficient for their smelting works; a rolling mill, and houses for the workmen employed about the establishment.

The location is a good one, having all the advantages of the canal, in obtaining both stone-coal and charcoal, and in taking the heavy masses of copper ore from the vessels or dock in the harbor, to the dock at the works. In the winter a good plank road is at hand for any hard teaming that is to be done.

The company have erected a good substantial brick building, seventy-five by fifty feet—fireproof. At present they have but one furnace up, but have made arrangements for another. Mr. Wm. Jones is their foreman—a gentleman well qualified for the task; than whom one more competent or better skilled in the business of smelting, is not to be found in this country.

They are now smelting what is called the barrel ore, which yields about 66 per cent.; the large lumps yield from 85 to 90 per cent. They run off from six to seven tons every twenty-four hours, or average 40 tons per week with one furnace and ten men. The ore is put into an oven, built of the best fire brick, which is melted by stone coal in an arch or furnace; the draught of which passes through the oven and directly out of the chimney. When the ore is all melted and refined, it is dipped out with ladles and run into ingots or bars at pleasure.

Mr. Hussey is well pleased with the quality of stone coal he gets here, and from his thorough acquaintance with the business of copper smelting knows what he says when he affirms that the smelting of Lake Superior copper can be carried on at this place, at least two dollars per ton cheaper than at any other point—and the company are highly pleased with their prospect of success.

As this is the first movement of the kind in Cleveland, we take a great deal of pleasure in noticing it, and wish the enterprising proprietors abundant success—hoping it may be the germ only of an infinite number of manufactories. This is decidedly the best point, taking into account the easy access to every thing pertaining to manufactories, the cheapness of provisions and abundance of labor, that can be found west of the mountains."

Cleveland Coal Trade.

In 1827, 800 bushels of mineral coal arrived at Cleveland by the Ohio canal. In 1830, 5,100 bush. In 1835, 50,473 bush. In 1840, 167,045 bush. In 1845, 887,880 bush. In 1850, 2,317,849 bush. In 1851 the receipts will reach 2,700,000 bush, worth \$243,000.

The demand upon our coal dealers comes from all portions of the lakes, as far West as Chicago and as far North as Sault. When the Cleveland and Pittsburgh railroad is completed we look to see the coal trade of Cleveland doubled, prices reduced, and the growth of manufactures in our midst greatly advanced by this reduction in the price of fuel.—*Cleveland Herald.*

Egypt.

In the East some important railroad projects are on foot. A late London letter says:—

The Pacha of Egypt has been led, by some English capitalists, to consent to their making a road from Alexandria to Cairo. Another project is on foot to connect the Mediterranean and Red Sea by railroad; and a third to continue the Hungarian road to Constantinople, so as to facilitate the communication of England with her East India possessions. There are, at present, two routes from London, one by Paris, Marseilles, the Mediterranean and Red Sea, and the other by Berlin, Vienna, and the Adriatic. That by Constantinople would be more speedy.

Experiments on Burning Fluids.

So many accidents have occurred within the past year or two from the explosion of burning fluids, many of them attended with loss of life and nearly all with more or less destruction of property, that many persons entertain the opinion that these fluids cannot be used with safety. We noticed not long since a recommendation in the Tribune that legal enactments should be resorted to, to prevent their use. It appears, however, upon a careful examination of the subject, that these accidents are entirely to be attributed to carelessness. We give below the results of some important investigations with reference to burning fluids, which were communicated by Professor Horsford to the American Academy:

"It has been maintained by many that several of the various preparations under the general denomination of *burning fluids* are, in certain conditions, explosive. It has been asserted by vendors, on the other hand, that they are not explosive. Wherein the misapprehension lies, how the numerous accidents that have occurred in the use of burning fluid are to be explained, and by what precautions the repetition of these accidents may be prevented, have been subjects of experimental enquiry. The burning fluids as a class are rectified spirits of turpentine, or turpentine with an admixture of a small percentage of highly rectified spirits of wine, or of some other inflammable body readily soluble in turpentine or alcohol. Turpentine, alcohol, and ether, when fired in an open vessel, burn at the surface, so long as a supply of oxygen is kept up. The accidents with burning fluids have ordinarily occurred during the filling of lamps from the cans, and always in the presence of flame, from a burning lamp or other source. In these facts lies the explanation of the phenomena that have been observed.

"The general principle, that a mixture of highly combustible gas with oxygen or atmospheric air is explosive, suggested the idea, that in the chamber above the burning-fluid in the flask from which the lamps are filled, there might be an admixture of the vapor of the burning-fluid in such proportion with atmospheric air as to make it susceptible of explosion. To test the value of this suggestion, experiments were made with alcohol by directing a current of air into the upper part of a loosely stoppered laboratory glass spirit-lamp, while burning, causing thereby a mixture of alcohol-vapor and air to rush past the flame. After a moment or two the jet took fire, and was instantaneously followed by explosion. The result was invariable. After permitting a drop of alcohol in a large glass flask with a small neck to evaporate for a moment, and applying flame to the mouth, explosion resulted generally, but not invariably. Ether similarly treated yielded less uniform results, because probably of the greater difficulty in obtaining the proper mixture of the vapor of ether and air. A variety of burning-fluid in extensive use, said by the vendors *not to explode*, was subjected to similar experiments, with still less frequent affirmative results. They were, however, sufficient to show that explosions with them are possible. Similar experiments have been made with another variety of burning-fluid by Dr. M. Wyman, with like results. It is, then, conceivable, that, when the proper relative amounts of burning-fluid vapor and atmospheric air are mixed together, as they may be in the upper part of a partially filled can or receiver, and a flame is brought sufficiently near, explosion must result. If the quantity of mixed gases be large, the explosion may cause the destruction of the containing vessel, or, if that remain entire, it may drive out a portion of the fluid, which, taking fire, may cause more or less injury. The course of safety has been pointed out by the dealers in these articles for illumination. It is to fill the lamps (the tops of which are without special air-holes and which screw on) in the *absence of flame*, by daylight, for example, in which case no explosion can occur.

"Similar accidents to the above have taken place in the use of the so-called air-tight stoves for burning wood. After the wood has been fired and the supply of air for some time shut off, on reopening the draft, and sometimes even without, occa-

sionally explosions of great violence have occurred, attended with the blowing off of the door, and, in some instances, producing still greater injuries to the stove. The probable explanation is this. After firing the wood and shutting off the draft destructive distillation commences and inflammable gases issue from the wood, which mingling with air derived from the pipe or remaining still unconsumed, furnish an explosive mixture, which the first jet of flame, or perhaps the incandescent coal, causes to explode. As these accidents are not of frequent occurrence, it may be found that the probability of producing inflammable gases in the required quantity is less with some varieties of wood than with others."

From the Baltimore American.**Resources of Virginia.**

The report of the committee appointed by the Mercantile Convention which recently met in Richmond, is published in the papers of that city—the object being to show the ability of Virginia to maintain a direct trade by steamers with Europe and South America.

The report gives some interesting statistics. The trade on the James River and Kanawha canal for the last year reached in value an aggregate of \$6,135,865 from the interior, and of \$7,727,224 of merchandise and goods carried into the interior. The business of the Central railroad has doubled within the year. The inspections of Virginia tobacco amount to 50,000 hogsheds, of which the larger portion is shipped to Europe, whilst the remainder, with a large amount not inspected, is manufactured in the state for consumption at home and abroad. The flouring mills of Richmond manufactured last year 1,173,000 bushels of wheat, and they are expected this year to manufacture upwards of a million and a half bushels.

The tonnage employed in the direct foreign trade between Europe and the waters of James river amounts to nearly 30,000 tons. The report says:

"If it were in our power to present the commercial statistics of the cities of Norfolk, derived from the Roanoke River, the Dismal Swamp canal, and other sources; the rapidly increasing trade of Alexandria, derived from the Chesapeake and Ohio canal, and from the country adjacent to her, of Petersburg and Fredericksburg, we do not doubt that the amount of Chesapeake trade could be demonstrated adequate to sustain at once, by the energetic and united patronage of our merchants, a direct trade with Europe and South America. The material for this trade already exists. Any doubt, however, which may be entertained of the present amount of Virginia commerce becomes unimportant, in view of the immense accessions to follow the completion of the improvements referred to. 'Whilst we pause to make the figures the fact is upon us.' A succinct statement of the works of artificial improvements, now in progress, and actually completed, will serve to embody the facilities upon which we may rely, and to develop the capacity of transportation upon which the future trade of Virginia must principally depend. We think, therefore, it sufficiently appears that looking alone at the present trade of our cities, we have ample encouragement to commence at once upon this undertaking, with the fair prospect of trade enough to ensure handsome profits to capitalists who may embark therein."

There are now completed in Virginia 565 miles of railroad, and 468 miles of canals, and there are in course of construction 890 miles of railroad and 220 miles of plank road. The appropriations for those works are already made and the money has been almost entirely raised at home without the necessity of incurring a foreign debt. The report reviews the progress of railroads in Georgia, South Carolina, Alabama and Mississippi, and contemplates the certain connection of the Virginia system of roads, with the extended and comprehensive network of roads now spreading throughout the South and the South-west. References are also made to the growth and prosperity of the city of Boston and other Northern cities as resulting from their internal improvements by which access from the interior and the great West was facilitated for products seeking an Atlantic outlet.

We give to the projected undertaking of the Virginia merchants and business men our best wishes

for its success. If carried out prosperously a demonstration will be afforded to Baltimore of her ability to do as much or more; and thus we shall profit by the experiment of our neighbors. In this view of the case, we shall watch with much interest the progress of the undertaking—if it is to make any progress—and learn from its several steps all that they may be qualified to teach. A direct trade with Europe is a good thing—an excellent thing—and we are very desirous that Baltimore should enjoy it in regular steamers of her own, so soon as she is possessed of the means of maintaining it with profit. If Richmond and Norfolk get ahead of her, by reason of superior enterprise and capabilities, we shall endeavor to catch a spirit of generous emulation and strive to imitate so good an example.

Statement of the Railroads in Virginia completed and in Progress.

	Length.	Completed.
Baltimore and Ohio Railroad.....	251	90
Richmond and Danville Railroad.....	147	35
Richmond and Petersburg do.....	22	22
Clover Hill Railroad.....	15	15
South Side do.....	132	10
Manassas Gap do.....	60	60
Petersburg and Roanoke Railroad.....	60	60
Seaboard and do.....	77	77
Appomattox Railroad.....	9	9
Winchester and Potomac Railroad.....	32	32
Virginia Central Railroad, (including Blue Ridge Railroad).....	138	98
Virginia and Tennessee Railroad.....	205	10
Orange and Alexandria Railroad, (including branch to Warrenton, 10 miles).....	100	10
Richmond, Fredericksburg and Potomac Railroad.....	76	76
Greensville and Roanoke Railroad.....	21	21
Northwestern Railroad.....	120	
Miles.....	1,455	565
Chesapeake and Ohio Canal.....	185	185
James River and Kanawha Canal.....	200	200
Dismal Swamp Canal.....	23	23
Fred's Valley Plank Road.....	40	1
Staunton to James River.....	40	
Boydton to Petersburg.....	75	
Junction Valley.....	65	

Floating Bridge Across Lake Champlain.

The *Champlain Beacon* of Saturday thus speaks of it:—On Monday, for the first time in the history of the world, Lake Champlain was crossed by a train of cars. The floating bridge emerged from its slips—the monster "Sea Serpent" crept forth from his den, and stretched his huge proportions from pier to pier, connecting shore with shore, State with State, New England with the West. Without difficulty or accident, and with as little delay as could have been expected on the first trial of this novel and grand invention—the youngest born of Campbell's scheming brain—the whole Boston tram engine and all, passed safely over from the Vermont to the New York shore of Lake Champlain. The excitement and enthusiasm were indescribable. The monster depot—500 feet long by a hundred broad—the wharf, the piers, the hotel, were crowded to their utmost capacity. His marine majesty received such a royal greeting as probably a serpent never received before.

Fowey Consols Mine.

On Monday the 28th instant, the "Man Engine" for facilitating the descent and ascent of the miners employed in working this mine was set to work, on which occasion invitations were issued by the adventurers. The engine, which has been constructed by Mr. West, the talented engineer of the mine, is the invention of himself and Capt. Puckey, and is worked by a water wheel of thirty feet in diameter, six feet in breast, with a crank to form a stroke of twelve feet, balanced by four large balance beams; the wheel is regulated over the centre by a massive fly wheel of upwards of twelve tons in weight, driven or multiplied by three to one of the water wheel which gives it a regular rotatory motion. By means of this engine, miners are enabled to descend a depth of two hundred and eighty fathoms from the surface in the most easy manner possible, and it was truly gratifying to witness the

heartfelt delight which was unanimously expressed by them on their being thus relieved of at least a third of their labor.—*London Mining Journal*.

American Railroad Journal.

Saturday, September 27, 1851.

Mr. Poor is still prevented by illness from attending to his accustomed duties.

Cast Iron Machinery.

Messrs. Reeves, Buck & Co., having purchased a patent right for manufacturing *Tapered Iron* on the Hydraulic principle, are about starting one of their Rolling Mills at Phenixville, Pa., for the purpose of manufacturing this Iron. They will manufacture bars of Iron thick in the middle and decreasing in size at each end, or the two ends of unequal thickness, ships' knees, arms of water and paddle wheels, &c., &c. Nothing of this description has yet been made by machinery in this country, and the greatly reduced cost at which it can be furnished, in comparison with hand labor, will ensure its general adoption.

Complimentary Tribute.

On the resignation of David A. Neal, Esq., as President of the Eastern railroad corporation, the operating officers of the company presented to him a splendid Pitcher, on a massive Salver, with a Caster to match. The whole is richly chased, and was from the manufactory of George B. Foster, No. 29 Tremont Row, Boston. The Pitcher bears the following inscription: "Presented to D. A. Neal, by the Operating Officers of the Eastern Railroad Company, on his resignation of the Presidency, August, 1851."

Nashville and Tennessee River Railroad.

The subscriptions for stock in this road now amount to about \$150,000. It is expected that the corporation of Nashville will take \$100,000 and her citizens \$50,000 more; and between Columbia and Nashville that \$200,000 more can be raised. The \$500,000 thus obtained, says the Republican Banner, from which we gather the above, will build, equip and put into operation the portion of the road between Columbia and Nashville, which it is proposed to do at once, before going to work on the other part of the road at all. It is then proposed to borrow \$300,000 from the State; and it is expected that the business between Columbia and Nashville will pay the expenses of working the road, the interest on the State loan, and 7 per cent. to the stockholders. The Banner adds:—

"From Columbia to Clifton, the nearest and most accessible point on the Tennessee river, the distance is sixty-five miles, and the construction of the road between these points will cost at \$12,000 per mile, about \$800,000. \$100,000 worth of stock can be obtained between these points, whenever the road is located there, and this sum, with the \$300,000 borrowed from the State on the ample security offered by the finished part of the road from Columbia to Nashville, will grade the road from Columbia to Clifton; and then again we ask the State for a loan to buy and put down the iron giving her a lien upon the whole work, and the road is finished. The first part of this road can be built in eighteen months; the second part in two years, making 3½ years for building the whole road at the cost of \$1,300,000—\$600,000 of this being in capital stock, \$700,000 borrowed."

A survey for a railroad from Nashville to terminate at Madrid Bend, on Mississippi river, has just been completed by a competent engineer. Its length will be 175 miles, and he estimates its cost, adding 10 per cent for contingencies, and including buildings and equipments, at \$2,500,000.

Baltimore and Ohio Railroad.

In anticipation of the opening of this road west of Cumberland for business, the company have attached a passenger car to the train which conveys materials from Cumberland to the workmen, and facilities will thus be rendered to travellers in that region. Freight will also be taken, under certain restrictions, to Wilson's Summit, and about the first of October to Oaklands—a point fifty-three miles from Cumberland. Thus this great work is already preparing for the large trade which will be poured into the lap of Baltimore when it reaches its terminus on the Ohio river.

Mobile and Ohio Railroad.

The Mobile Tribune states that the directors of this road will commence laying the superstructure next week, and that the whole work to Citronelle, thirty-three miles, will be finished and in operation within three months.

That paper adds that two hundred miles of the road will soon be let out for grading, and that in Mississippi the *bona fide*, unconditional subscriptions amount to fully \$900,000, which will be greatly increased the moment ground is broken.—The lands granted by the government are all located.

New York.

Buffalo and New York City Railroad.—The directors of this company have received a proposition from the Buffalo and Rochester company to sell a portion of the present road between Attica and Buffalo. The Directors have consequently requested the contractors to suspend operations on the new line for the present, and have ordered the chief engineer to examine the old road, and report upon its value as compared with the new location.

Texas.

New Orleans and Opelousas Railroad.—A railroad meeting was held at La Grange, Texas, on the 23d ult., at which it was resolved to hold a convention of delegates from the different counties of the State at Austin on the third Monday in November, for the purpose of taking into consideration the subject of uniting with Louisiana in extending the New Orleans and Opelousas railroad to Texas, and thence to the Pacific.

New Hampshire.

The Cocheco Railroad was opened from Dover, New Hampshire, to Lake Winnepisiokee on the 1st instant. The event was celebrated by the usual excursion and speeches. A steamer called the Dover runs on the lake, connecting with the trains.

East Tennessee Railroad.

The cars are now running upon the Georgia and East Tennessee Railroad, as far as the town of Charleston, on the banks of the Hiwassee River. The track has been graded as far as Athens; and the Company are now engaged in laying the iron between the Hiwassee and that place. We were present at the celebration of the opening of the road at Charleston, on the 5th. The crowd was immense—numbering at least 5000 people. An excellent Barbecue was served upon the occasion by the citizens of the place and the surrounding country. Interesting addresses were delivered by Messrs. Smith, of Charleston, Cuyler, of Savannah, and Swan of Knoxville.

We have, now, no doubt in regard to the ultimate completion of the work; not only to Knoxville, but, also, to Lynchburg, Va. It is also contemplated to construct a cross road from Chattanooga to Charleston; a distance of forty miles, for the purpose of making the connection between the East Tennessee, the Nashville and the Memphis road more perfect.—This is an important link;

as it would reduce the travel between these points just forty miles or one-half.

The East Tennessee road is a most substantial and capital work. It is constructed with a *heavy rail* upon cross-ties, and is altogether a *model road*. Its cars and machinery are all of the most approved kind. For a new road, it is admirably managed, and makes excellent time. The distance from Dalton to Charleston, 40 miles, was travelled the day we were upon the road in one hour and twenty minutes.

We commend all our friends who are engaged in the grain and provision trade, to lose no time in extending their business relations to East Tennessee. She is a young Empire in herself. Her rich valleys and fertile hill sides are destined to team with valuable products, all of which will be needed for consumption in Central and South Western Georgia. This trade can now be secured to this section, if our business men will make the proper effort at an early day. We feel assured that they will consult their own interests by giving the matter immediate attention.—*Macon Messenger*.

Stock and Money Market.

We have no change to note in the money market. Rates are still high. The distrust occasioned by the recent failure of some of our large houses not only prevents the usual negotiation of paper in the street, but very materially embarrasses transactions in produce and merchandise. We believe nearly all the banks are discounting to their customers to the full amount of their receipts. The demand for stocks is limited, and there has been a slight decline in prices in some instances. Bonds of new works cannot be disposed of without sacrifice. We are now, however, receiving more gold than we are exporting, and the prospect of improvement continues favorable. The total amount of gold dust and bullion exported from San Francisco from the 1st of January to August 14th, 1851, was according to official reports, \$56,638,204; imported during the same period, 2,892,124; excess of exports, \$53,746,080.

The New Bedford Whaling List contains some interesting statistics, from which some idea of the extent of the whaling business may be formed.—The greater portion of the business is confined to Massachusetts. The whole number of vessels employed is six hundred and five. New Bedford has two hundred and seventy-five ships and barks, and more than half the tonnage. Nantucket, New London and Fairhaven have about an equal interest in the business. There are now one hundred and thirty-two large ships and barks in port, fitting for sea, and they will require nearly four thousand men for officers and crews; the total amount of property invested in the whaling business must be between twenty and thirty millions of dollars.—The first seven months of this year there has been landed about \$2,800,000 worth of sperm oil, \$4,500,000 worth of whale oil, and \$1,200,000 worth of bone—making a total of \$6,500,000 for the first seven months, giving for the year, nearly \$15,000,000.

The receipts of the Virginia Central railroad company for passage, fare and freight for the months of July and August 1851, were.....\$27,129 70
Receipts for the same months of 1850... 17,376 11

Increase.....\$9,753 59

The injunction which was procured by the Southern Michigan Railroad against the Central road has been dissolved. The Detroit Daily Advertiser of the 19th, says, that the work on the Central road will now proceed with vigor, and without let or hindrance, and by the 1st of January next the connection with Chicago will be completed.

The business of the Ohio and Pennsylvania road

for the week ending 13th inst., was \$2,210, showing an increase of \$546 over the previous week.

The receipts of the Cleveland and Columbus railroad company continue fully to reach the estimates of the managers. The earnings for the first two weeks of September for passengers alone were \$20,080 66
Freight and mails estimated..... 15,200 00

\$35,280 66

The passenger receipts for August were \$38,557.

The Evening Journal gives the annexed statement of the quantity of flour, wheat, corn and barley, left at tide water during the 3d week in September in the years 1850 and 1851, as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1850...	128,346	82,923	72,950	132,595
1851...	112,562	126,695	283,446	57,257

Dec.... 15,784 Inc. 43,772 Inc. 210,496 de. 75,336

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 22d Sept., inclusive, during the years 1850 and 1851, is as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1850...	1,491,498	1,063,070	2,742,592	460,687
1851...	1,092,722	1,639,531	5,946,586	282,179

Inc.... 601,224 576,461 3,206,994 dec. 178,508

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 22d Sept., inclusive, during the years 1849 and 1851, is as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1849....	1,614,429	1,112,682	4,031,108	136,520
1851....	2,092,722	1,639,531	5,949,586	282,179

Increase. 478,293 526,849 1,918,478 145,659

By reducing the wheat to flour, the quantity of the latter left at tide water this year, compared with the corresponding period of last year, shows an increase of 716,516 bbls. of flour.

Report of the Mining Intelligence Association.
Before the Board at the Mining Intelligence and Copper Stock Exchange Office, Eagle Harbor, Michigan, August 23, 1851.

Name of company.	Asked.	Offered.	Sold.
Pittsburgh and Boston (Cliff).....	\$128 00		
Copper Falls.....	40 00		
North West.....	34 00		
Phenix.....	8 50	8 00	
Ridge.....	8 50		
Algoma.....	3 00		
Lac la Belle.....	3 00	2 00	
New York and Michigan.....		1 50	
Bohemian.....		5 00	
Piscataqua.....		5 00	
Avery.....	1 50	1 00	
Norwich.....	5 00	4 00	
Ohio Trap Rock.....		5 00	
Quincy.....		2 50	
Wheal Kate.....		2 50	
Albion.....	2 00	1 50	
North American (old stock).....	35 00	32 00	
Minnesota.....	180 00	175 00	
North Western.....	14 00	12 00	
Adventure.....	9 00		
Iron City.....	6 00	5 50	
Forest.....	8 00	7 00	
Cape.....		2 00	
Star.....	2 50	2 00	
Farm.....			5 50
Toltec.....	3 50	3 00	
Medora (Agate Harbor).....	3 00	2 00	
Bluff.....		1 00	
Aztec.....	8 00	7 00	
Ohio.....			6 00
Eureka.....			3 00
Douglass Houghton.....	7 50	6 50	
Winthrop.....	3 00	2 00	
Dana.....	3 00	2 00	
Forsyth.....	9 50		

The question of taking stock is to be submitted to the people of the counties lying upon the route from Terre Haute to Alton, for the purpose of constructing the railroad contemplated between Alton and Terre Haute.

The people of McKean county, Pennsylvania, are taking measures to secure the construction of a railroad from Smithport to the New York and Erie railroad at or near Orleans. The sum of \$100,000 was pledged towards the enterprise.

A convention of the friends of the Sunbury and Erie railroad was held in Philadelphia on the 25th inst. The citizens of Erie have held a meeting at which resolutions were passed in favor of Erie county subscribing \$200,000 and the city of Erie subscribing \$300,000 toward the completion of the Sunbury and Erie railroad.

The Wilmington and Manchester railroad company in North Carolina, have purchased through their agents, Messrs. Winslow, Lanier & Co., of this city, 7,000 tons of iron, which with previous purchases, will be sufficient to lay the entire track, 162 miles in length. The purchase was effected on reasonable terms, the company's bonds being taken in payment at 90 cents on the dollar, and the cost of the iron delivered at Wilmington and Charleston at \$41 50 per ton.

Railway Share & Stock List;

CORRECTED WEEKLY FOR THE
AMERICAN RAILROAD JOURNAL.

NEW YORK SEPTEMBER 27, 1851.

GOVERNMENT AND STATE SECURITIES.

U. S. 5's, 1853.....	101½
U. S. 6's, 1856.....	105½
U. S. 6's, 1862.....	110
U. S. 6's, 1862—coupon.....	114½
U. S. 6's, 1867.....	115
U. S. 6's, 1868.....	116
U. S. 6's, 1868—coupon.....	122½
Land Warrants.....	140a145
Arkansas 6's.....	52a53
Alabama 5's.....	91a92
Indiana 5's.....	79
Illinois 6's, 1870.....	65a68
Kentucky 6's, 1871.....	105a106
Massachusetts sterling 5's.....	105a106
Massachusetts 5's, 1859.....	100½
Maine 6's, 1855.....	103
Maryland 6's.....	102½
Michigan.....	—
Mississippi.....	—
New York 6's, 1865.....	117a118
Ohio 6's, 1860.....	109½
Pennsylvania 5's.....	91

RAILROAD BONDS.

Atlantic and St. Lawrence, 6 per cent.....	85
Baltimore and Ohio, 1867.....	94½
Boston and Providence 6's, 1855.....	101
Boston and Worcester 6's, 1855, convertible.....	107½
Bost., Concord and Mont. 6's, 1860, mortgage.....	87½
Cheshire 6's, 1860.....	91½
Connecticut River 6's, convertible.....	98
Erie 7's, 1859.....	98
Erie 7's, 1868.....	108½
Erie income 7's.....	90½
Hudson River 7's, 1853.....	101½
Michigan Central, convertible, 8's, 1856.....	104½
New York and New Haven.....	100½
Norwich and Worcester, mortgage, 1860.....	80a85
Old Colony, 1854.....	97½
Ogdensburg 7's, 1859.....	94
Portsmouth and Concord.....	80a85
Passumpsic 6's, 1859.....	94½
Rutland 7's, 1863.....	97
Reading mortgage, 1860.....	80
" " 1870.....	75
Sullivan, mortgage 6's, 1855.....	75
Vermont Central 6's, 1852.....	93
" " 6's, 1856.....	83
Vermont and Massachusetts 6's, 1855.....	95

RAILROAD STOCKS.

[CORRECTED FOR WEDNESDAY OF EACH WEEK.]

	Sept. 17.	Sept. 21.
Albany and Schenectady.....	89½	—
Atlantic and St. Lawrence.....	60a65	—
Androscoggin and Kennebec.....	30a35	—
Boston and Maine.....	103	104½
Boston and Lowell.....	109	109
Boston and Worcester.....	101	100½
Boston and Providence.....	84½	87
Bost., Concord and Montreal.....	40	—
Baltimore and Ohio.....	71½	—
Baltimore and Susquehanna.....	36	—
Cheshire.....	53	—
Cleveland and Columbus.....	—	—
Columbus and Xenia.....	—	—
Camden and Amboy.....	—	—
Connecticut River.....	60	—
Delaware and Hudson (canal).....	95	96
Eastern.....	79	75½
Erie.....	92½	92½
Fall River.....	108½	108½
Fitchburgh.....	—	—
Georgia.....	68½	66½
Georgia Central.....	—	—
Harlem.....	124	—
Hartford and New Haven.....	52	—
Housatonic (preferred).....	71½	71½
Hudson River.....	50a55	—
Kennebec and Portland.....	15½	14½
Little Miami.....	—	—
Long Island.....	92	92½
Mad River.....	104	104
Madison and Indianapolis.....	14½	15½
Michigan Central.....	106½	106½
Montgomery and West Point.....	—	—
Michigan Southern.....	97	89
Manchester and Lawrence.....	14½	15½
Morris (canal).....	106½	106½
New York and New Haven.....	133	—
New Jersey.....	66	66½
Northern.....	107½	—
Nashua and Lowell.....	111	—
New Bedford and Taunton.....	50	48½
Norwich and Worcester.....	20	—
Norfolk County.....	34	33½
Ogdensburg.....	65½	66
Old Colony.....	80	—
Passumpsic.....	—	—
Pennsylvania.....	95	—
Pittsfield and North Adams.....	28	29
Philadelphia, Wilm'gton & Balt.....	—	—
Petersburg.....	55	54½
Richmond and Fredericksburg.....	106	106
Richmond and Petersburg.....	53	45½
Reading.....	43	41½
Rochester and Syracuse.....	—	—
Rutland.....	123½	—
Stonington.....	25	—
South Carolina.....	108	—
Syracuse and Utica.....	90	—
Sullivan.....	—	—
Taunton Branch.....	—	—
Troy and Greenbush.....	—	—
Tonawanda.....	127½	127½
Utica and Schenectady.....	99½	99½
Vermont and Canada.....	33½	35½
Vermont Central.....	25½	27
Vermont and Massachusetts.....	—	—
Virginia Central.....	103½	102½
Western.....	—	—
Wilmington and Raleigh.....	28½	—
York and Cumberland (Pa.).....	20	—

East Tennessee and Georgia Road.

About three miles of track beyond Calhoun are already laid, and the work will be pushed forward with all possible speed by Col. Dent. He expects to reach Athens by the 1st of November.

The Athens Post says that large quantities of wheat are being sent south over the East Tennessee and Georgia road, from Calhoun and Charleston. The prices at these places the Post quotes at 80 cents per bushel. Thus it is that the farmers of East Tennessee are beginning to realise the benefits of the new railroad communication with commercial marts, in the enhanced value and increasing demand for their produce.

South Carolina.

Greenville and Columbia Railroad.—We have received the fourth annual report of the President and Directors of this company, submitted to a recent meeting of the directors at Newberry C. H., from which we make the following abstract. Nearly sixty miles of the road have been completed and put into operation; and nearly eighty miles more have been graded. Iron for the road and all its branches has been procured, or contracted for; and most of the timber has also been contracted for.—The quantity of work done has been immense, and the progress made is very gratifying.

The road from Newberry to Columbia has been in operation since the 17th of March; and its business has met the most sanguine expectations of its friends. Constantly employed in transporting timber and iron for the completion of the road beyond its respective termini, it has averaged about \$5,500 per month in receipts, and has required about \$3,000 per month for expenses, including salaries of clerks, agents, conductors and rumors, leaving a net profit of about \$2,500 per month, or a total income of \$10,000 for the four months ending July 17, when the report was prepared. The entire cost of the road to Newberry, including outfit, is \$498,698 65. The income realized is in the ratio of a little more than six per cent. per annum on the whole investment. This gives good reason to believe that more than 7 per cent. annual profit will be realized on the entire cost of the road, by the time it is entirely finished.

The company has actually expended already, about \$876,776 83. This sum taken from the whole cost of the road, \$1,352,991 34, will leave \$476,214 51, to which must be added \$141,000 for the outfit still to be supplied; for there are already engines, passenger, baggage and freight cars, only to the amount of a little more than \$50,000. These two sums make a total of \$617,214 51. To meet it there are, according to the Treasurer's estimate, in arrears of stock \$431,028 19, to which must be added the State's subscription of \$75,000 South Carolina railroad stock, making a total of \$506,028 19. This will leave \$111,186 32 to be provided for, which the directors are confident the road can meet and pay.

According to the Treasurer's report, there are outstanding notes and bonds to the amount of \$45,627 31. To pay this sum, \$19,000 in the Columbia bonds hypothecated are provided, and a note for \$5,000 has since been paid, leaving only \$21,000 of indebtedness beyond their means, to be provided for. This would require no special provision from the stockholders, for the income of the road would be sufficient to pay that also, before the road should be finished to Greenville; but it is feared that the estimate of stock in arrear is too large. It was impossible to ascertain the precise amount; and it is therefore recommended that the stockholders authorize the issue of bonds for \$300,000, payable in ten years, at 6 per cent. the interest to be paid quarterly, and in advance, at Charleston or New York, wherever the bonds may be sold. With this sum, which it is thought can be raised on those terms, the road can be pushed through to completion by the close of 1852. The stock in arrear can, as collected, be applied to purchase the bonds, or invested in equal securities.

Finding that it was highly probable that the South Carolina railroad company would not be able to furnish more than seventy-five miles of the single rail, and thus that 35 miles more would be needed to complete the road, the President, by the

authority of the board, made a contract for 2,700 tons of T rail weighing about 50 pounds to the yard, the cost of which, including duties, will be about \$43 per ton, making a total of \$116,100.—Part of this iron is shipped and is daily expected.—To the cost of the rails must be added the transportation by the South Carolina railroad company to Columbia, about \$2.75 per ton, making \$7,375, for which the South Carolina railroad company will take stock in payment.

A survey of the route of the Union and Spartanburg railroad was made by the Chief Engineer of this company, from which it appears that a road can be constructed over a rich and interesting country between Newberry, Union and Spartanburg, sixty-five miles in length, at the comparatively small expense of about \$635,000.

The chief engineer's report gives details of the progress of the work on the various sections of the line. The road is now in operation for fifty-four miles. One hundred and thirty-seven miles have been graded, leaving twenty-seven miles, upon which the contractors are now at work.

The entire cost of the road will be \$1,352,991 34. It is 164 miles in length, making a cost of about \$8,250 per mile.

When the iron arrives which is daily expected, the engineer proposes to commence laying it at Little river, from which point it will reach to Cokesbury. From thence to Abbeville, Anderson and Greenville, it is intended to use the rail to be delivered by the South Carolina railroad company.

A statement is given of the receipts and expenses of the road from its opening until the 1st of June, from which it appears that the number of passengers transported over the road has been 16,542.

The amount of passage money was.....	\$16,482 87
“ freight “	18,699 99
	<hr/> 35,182 86
Total expenses same time.....	20,340 42
	<hr/>
Profits.....	\$14,842 44

The total expenses during this period bear a larger proportion to the receipts than the current expenses at the present time, because there is thrown into the aggregate the expenses of transportation of material for construction during a long period, when the car power was almost wholly applied to this purpose. The expenses during the whole period cover the cost of transportation of all the timber for superstructure and bridging, which has been carried up the road.

The business of the road has hitherto been performed by three locomotives, two passenger and two baggage cars, and about fifty box, platform and dirt cars. In anticipation of the fall and winter business, five additional locomotives have been ordered; one passenger and one baggage car have just been received, and about a hundred more box, platform and dirt cars ordered. Workshops are in process of erection, to enable them to keep the equipments of the road in constant repair; and there is every indication that the affairs of the road are in competent hands, and will be managed so as to afford a good return to the stockholders.

The officers of the company for the ensuing year are—

Hon. J. B. O'Neill, President.
James D. Gantt, Secretary and Treasurer.
Wm. Spencer Brown, Chief Engineer.
Wm. P. Patton, J. S. Preston, D. Nance, S. Fair, Joel Smith, F. G. Thomas, T. C. Perrin, J. P. Reid, Josiah Kilgore, V. McBee, Daniel Blake and J. N. Whitner, Directors.

Ohio.

Steubenville and Indiana Railroad.—We are indebted to D. Kilgore, Esq., president of this company, for a copy of the second annual report of the Board of Directors. It is a carefully prepared document, which sets forth the condition of the work in a clear manner, and lays before the stockholders and the public what has been done, and what is doing for the road, with its means and revenues, and also annexes a number of tabular statements, showing the fertility, condition and the present and future prospects of the country intersected by the road, and which must mainly contribute the business to its support, and make certain the profits on investments in its stock.

The report states that surveys have been made, and careful comparisons instituted as to the relative merits of the several routes between Steubenville and Coshocton. The interests of the road as a *through line*, to connect Central and Southern Ohio, Indiana and Illinois, with the Pennsylvania improvements at Pittsburgh, by the shortest and best route, have been kept constantly in view, as questions of paramount importance to any local considerations. The commencement of the construction has been delayed to secure accuracy in the surveys and estimates, and the harmonious settlement of conflicting interests. The right of way on the entire line has been obtained with little charge and the vexatious questions usually attending the settlement of that object, have been adjusted to the satisfaction of all parties.

The spirited efforts made to secure subscriptions have been well rewarded. The valid subscriptions public and private, now amount to \$1,200,000, which is equal to \$10,500 per mile on the entire distance, from Steubenville to Newark. With these available means, and the credit consequent upon them, and the prospect of business on the road, no doubt is entertained of ability to ensure an early commencement and speedy completion of the line. It may be regarded as certain that the road will be constructed, and that it will prove a profitable one.

As the value of every investment of this nature depends upon the amount of business which the road can command, and its capacity to perform the service with equal efficiency, speed and economy with competitor roads, the report before us submits some considerations derived from the two sources from which railroads obtain their business and profits, namely, the local resources of the country traversed, and the way business these resources make; and, 2nd, the amount of travel and freight the road can attract at its termini, to be passed over it, which constitutes its through business.

The report claims for the Steubenville road, and on good data, too, the union of both these elements of business and profit. The line of road from Steubenville to Columbus is 149 miles long. If it can command business for 124 miles on each side of the line, and that seems to be a low estimate, the area embraced will be equal to 2,384,000 acres of land contributing to the local business of the road. The road traverses seven counties. Reliable statistical facts, set forth in the tabular statements, present the line to the public as one which cannot fail of success, as one which invites a comparison of its advantages with those of the most important lines in the West, with full confidence that the result of the comparison will be favorable to the Steubenville line.

The officers of the company for the ensuing year are—Daniel Kilgore, President; R. S. Moody,

Secretary; D. L. Collier, Treasurer; J. Bickensderfer, jr., Chief Engineer; Abner L. Frazer, John Waddle, Assistant Engineers; D. Kilgore, John Andrews, James Means, Wm. McDonald, James Parks, Thompson Hanna and Wm. K. Johnson, Directors.

Illinois.

Alton, Mount Carmel and New Albany Railroad.—This important road should perhaps more properly be called the St. Louis, Mount Carmel and Princeton railroad, so far as the proposals for contracts advertised literally make the road, and the slight prospect there now is of its being very soon continued to Alton or from Princeton to New Albany, are concerned. We are pleased to learn that the company, of which that enterprising gentleman, Gen. Wm. Pickering, of Albion, Illinois, is president—are now advertising for proposals to lay the superstructure of the greater part of this road from Illinoistown, just opposite St. Louis, directly across the state to Princeton, Gibson county, Indiana. The distance between these two extremes is about 153 miles. Of this there are advertised 70 miles of road between Illinoistown and the road's intersection with the great Central railroad of Illinois. This division will run through the towns of Caseyville, Lebanon, and Carlyle, with a branch 8 miles in length to Belleville. There are now about 8 miles of road laid down, and in operation we believe, from Illinoistown to the Bluffs, which is the most difficult work on the whole road, and of which this company may avail itself. Proposals are also advertised for laying the superstructure from Mount Carmel on the Wabash, to Albion, Ill., 47 miles, and from Mount Carmel to Princeton, a distance of 10 miles. This will leave a stretch of about 46 miles between the Central railroad intersection, and Albion, yet to be finished. A branch will be run to Albion so soon as the other portion is fully under headway.

We are assured by Gen. Pickering, that the work will now go straight forward. The work will be greatly assisted if the company obtain a grant of land from government, similar to that secured by the Illinois Central railroad and other roads. We are pleased to learn the proposals are so favorable for the commencement and speedy completion of this road. Its route is directly across the state of Illinois, and intersecting the greatest continuous railroad in the West—the Central railway, running from Chicago on the lake, to Cairo at the junction of the Ohio and Mississippi rivers, or to some other point in that vicinity, a distance we believe of 460 miles. It will reach the Wabash and Mount Carmel, and thence be continued for the present so as to intersect the Evansville and Illinois railroad at Princeton.

That this St. Louis railroad will be the channel of an immense travel and a large trade, cannot be doubted. Travelers from St. Louis to Louisville and the Upper Ohio generally, and vice versa, will generally take this road. It is anticipated that travelers can be conveyed by this railroad from St. Louis to Evansville in eight or ten hours. This would establish a daily packet line from Evansville to Louisville, conveying travellers between the points in sixteen or eighteen hours. Thus the time of the trip from St. Louis to Louisville by this road and river, would generally average about twenty-six hours. Our regular fast packets are generally thirty-six hours from St. Louis to Evansville. In fact, placing the time between Evansville and Louisville the same under both arrangements, the gain on the whole route will be about twenty-eight hours between Evansville and St. Louis to travellers from the latter city—a great gain in this fast age—and which would always ensure the road a full travel. During times of low water, this gain will be greatly increased, and there are but few travellers between Louisville and St. Louis who would not take this railroad at or to Evansville, and by a certain passage of eight or ten hours, escape all the tedious delays and vexations of scraping through the bars between this and the mouth of the Ohio. Of the trade which this road will bring to our city, we have no means at hand of judging, but it must have an immense influence in this particular.

In whatever way we view this road, we believe

its completion will work a great beneficial influence in favor of Evansville. For a long time that portion of the Evansville and Illinois railroad from Princeton to this place, must literally be a part and portion of the other road, and have the advantage of the trade and travel of both—while Evansville must be the depot of both roads. One great object with us should be to connect with a road penetrating to the interior of Illinois, and this object will be gained by the building of the St. Louis Railroad to Princeton.

In making these desultory remarks, we have not the advantage of any statistics, or of those documents necessary to fully inform us on the subject of this great road and its bearings. But its good effects on this city are so evident a result of the road's completion, that we cannot withhold our gratification at the prospect of its speedy commencement and promised rapid completion. To the energy and perseverance and industry of Gen. Pickering, are we indebted for the great part of what has been done to bring this magnificent enterprise to its present happy condition.—*Evansville Journal*.

Northern Cross Railroad.—The Quincy Whig of Tuesday last, states that the directors of the above road have contracted with Messrs. Bennet, Brigham & Conran, of St. Louis, for furnishing all the iron, chairs, spikes, and cross-ties, and for laying and filling the track, from that city to Clayton, after the grading and masonry contracted for by Messrs. Holmes, Redmond & Shannahan shall be completed. The Whig further states, that the contract for the work and materials has been made at such prices, that the cost of the road when completed, will be much below the average cost of roads in the country. The contractors are to take in payment \$100,000 Quincy city bonds, at par; and also agree to receive \$30,000 in the bonds of the railroad company on favorable terms, and for the balance they are to be paid in cash.

Michigan.

Michigan Southern Railroad.—We have recently visited Southern Indiana, and took the route of the Southern Michigan railroad to witness the vast improvements going on in the Southern tier of counties of our State.

Monroe being the eastern terminus, the road has been extended from the city down to the pier where a large store house has been erected and spilling going on for the erection of another. The city of Monroe is giving evidence of many improvements. Another season, Captain Edwards will have a daily line of three new steamers to run to Buffalo in connection with the railroad, which will then be finished to Chicago. The new steamers are to be of the largest class, and equally as magnificent as any that sails our waters. The engines contracted for are warranted to propel the boats at twenty miles an hour, which will enable them to reach Buffalo in fourteen hours from Monroe, while cars will reach them in eight hours from Chicago. The road is now being relaid with a heavy rail from Monroe to Adrian. West of Adrian to Hillsdale the old flat bar has already given way to a heavy T rail.

At Adrian we found a new car-house, machine and engine building going up, with many mechanics engaged by the company in repairing and making new cars. The village of Adrian continues to improve rapidly. Many new buildings were going up, and all was "life and bustle."

Eighteen miles from Adrian, which was reached in forty minutes, is Hudson, a new village rapidly growing, where plank roads are to be commenced into the interior.

Eighteen miles further west, we reached Hillsdale, a busy town and marked improvements within the past year.

Jonesville comes next, in a distance of five miles. A new depot has been constructed, the village growing and is a mart for much grain.

Nine miles brought us to Allen's station. A new depot mostly finished, ready for grain and other freight.

Nine miles further west, Coldwater is at hand. The magic growth of the village still continues to excite the traveller's wonder. Business of all kinds we are informed, has increased a hundred per cent since the completion of the road.

Twenty-five miles further on brought us to Sturgis Prairie, St. Joseph county. Several new stores

have been erected here, while the near completion of a plank road from thence to Lima, Indiana, and on to Fort Wayne, on the Wabash Canal, makes Sturgis an important point for the trade of the Indian Prairies, and openings in that direction. The plank road has been completed over 50 miles, and daily stages are running to the interior of the Hoosier State.

The road was open too for business to White Pigeon, a fortnight since. A fine large depot is nearly finished. The former dilapidated condition of the village is giving way to more enterprise, and several business men have moved into the place.

A branch of railway from Pigeon to Constantine, a distance of four miles, is to be commenced this week and completed at once.

On Saturday the cars crossed the *State Line* into Indiana, and to-day the passenger train will reach Bristol, on the St. Joseph river. The cars are now running 159 miles.

Elkhart is expected to be reached some time this month. Here a branch is being built to Goshen, 12 miles south. It is expected South Bend will hear the steam whistle within four weeks, and La Porte in November. Some 1,500 men are at work between there and Chicago. The cars will be into Chicago in February.

Probably no road ever constructed in this country has gone ahead at so rapid a rate to completion.—*Detroit Tribune*.

Bowling Green and Tennessee Railroad.

At a recent meeting of the directors of the Bowling Green and Tennessee railroad company, resolutions were adopted that prompt and energetic measures be taken to press on the enterprise as fast as their means and ability will enable them. They are also desirous of aiding in the extension of the road from Bowling Green to Louisville. It was resolved that books be opened for the subscription of additional stock in the Bowling Green and Tennessee railroad, and that the President forthwith employ a competent engineer to reconnoitre preparatory to a survey of the route for the proposed railroad from Bowling Green to the Tennessee line, and thence on to Nashville.

Illinois and Wisconsin Railroad.

The surveys of this road have been in progress for some two months, commencing at Big Foot, on the Wisconsin State line and progressing towards Chicago. The engineers have reached Fox river, and will probably complete the survey of the entire line within another month. The length of the line will not vary much from seventy-five miles. At Big Foot it will intersect the Rock River Valley Union railroad, the whole of which, from the State Line to Fond du Lac, its northern terminus, is now under contract and is to be completed within three years from April last.

We learn from the Chicago Tribune that stock sufficient to organize under the general railroad law of Illinois, has been subscribed. Two eastern companies of great experience in railroad building and of abundant capital and credit, have contracted for the construction and equipment of the entire road, from Big Foot to Chicago, at the estimates of the engineer, and they will commence operations on the spot as soon as the location of the route shall have been completed, and the estimates prepared and approved of by the board of directors.

The track is to be constructed on the six foot gauge, and laid with heavy T rail. Part of the iron has been contracted for in Europe on very favorable terms, and is now on its way hither. It is expected that a portion of it will be received before the close of navigation. The road is to be constructed in the best and most substantial style, and in all of its appointments is to be fully equal to the first roads of the United States.

Massachusetts.

South Reading Branch Railroad.—At the annual meeting of the South Reading Branch railroad company, the following gentlemen were chosen directors: Albert Thorndike, David Pingree, Isaiah Breed, Joseph S. Cabot, Wm. H. Foster, George Osborne, William Sutton. Clerk, William H. Foster.

Essex Railroad.—A meeting of the bond holders of the Essex railroad company was held at the Lyceum Hall, on Monday afternoon. Geo. Hodges, Esq., of Andover, was elected chairman, who announced that the sum required by the act of the last session of the Legislature had been subscribed.—The following gentlemen were then elected Trustees of the bondholders, viz:—Michael Shepard, Albert Thorndike, and Eben Sutton.

It is generally understood, although not yet officially announced, that a contract has been entered into by the Directors of the Essex and the Eastern railroad companies, by which the latter company have agreed to take a lease of the Essex railroad and to operate it for the term of ten years—the contract to go into effect in the course of a few weeks.—*Salem Gazette.*

Illinois.

Peoria and Ogawka Railroad.—At Burlington, on the 5th inst., \$10,000 were subscribed to the stock of this road; and strenuous exertions are being made to increase the subscription west of the Mississippi \$50,000. The Peoria Republican of the 5th contains a letter from Col. Morgan, the engineer, giving his opinion in regard to the route, the nature of the country through which it will pass, and the advantages that will accrue to the city of Peoria from its construction. He says:—

"Recent examinations give satisfactory evidence of the existence of a line possessing all the requisites for building a superior road with light grades, and generally speaking, susceptible of cheap construction, affording many facilities for the convenient transportation of stone and fine coal, which is found in unlimited quantities along the valley of the Kickapoo, and running contiguous to a remarkably fine agricultural region."

Railroad Damages.

We are pained to learn that the Pacific railroad company is likely to encounter serious difficulty in obtaining the right of way over a portion of the route already under contract. Some of the landholders have claimed heavy damages, which the company was unwilling to allow. Therefore three commissioners were appointed by the court to assess the damages in the form prescribed by the charter. The assessment has been made, and the award returned into court; but the landholders are not content with it, and, as we learn, are seeking to set aside the award and have a new assessment made. If the matter assumes the shape of an obstinate litigation, it must seriously retard the work and produce great embarrassment to the company. The contracts have been let, and the contractors, with their hands, are ready to proceed with the work. But until this question of damages is disposed of, nothing, we presume, can be done. This is a very unfortunate state of affairs, as there is a universal desire to have the road speedily in operation. We sincerely hope that some amicable adjustment may be effected which will enable the work to progress; and as the property along the entire route has already been greatly enhanced—perhaps double in value—by the mere location of the road, we think that landholders ought not to be too particular in exacting the last cent to which they may even think themselves entitled. A spirit of liberality ought always to characterise those who are in fact to be the chief gainers by the road—and we suspect that if the road were about to be relocated over a new route, somewhat distant from their lands, their estimate of the damages would be considerably modified. We respectfully suggest to the gentlemen interested, whether it would not be better to submit to what they esteem rather a low assessment, sooner than obstruct the progress of a great enterprise of such vital importance to the

people of this city and county.—*St. Louis Intelligencer.*

Steamers on Lake Erie.

We understand that a contract has been made by Messrs. Bidwell & Banta, the enterprising ship builders of Buffalo, with Capt. Arthur Edwards, of Trenton, Michigan, to build two splendid steamers, larger, longer, faster and more costly, than any that has as yet floated upon the waters of Lake Erie—which are to run between Buffalo and Monroe, the eastern terminus of the Southern Michigan railroad. These boats are to be 104 feet long, 14 feet hold, 37 feet beam, the draft of water not to exceed 7 feet, and they are to be propelled by low pressure beam engines of 13 feet stroke and 72 inch cylinder, from the Morgan Works, New York. It is expected each will make the trip between Buffalo and Monroe in 14 hours, which will bring Chicago within 22 hours' ride of Buffalo, and about 40 hours of New York.

North Carolina.

Raleigh and Gaston Railroad.—The amount necessary to rebuild this road has been subscribed.—On the 12th inst. the stockholders met at Warrenton, and by an inspection of the books it was ascertained that about \$70,000 worth of stock was yet untaken. Of this, Norfolk subscribed \$30,000, J. Dunlop, of Petersburg, \$29,000, and H. D. Byrd, Esq., \$9,000 worth. The company was immediately organised, and the following gentlemen appointed directors: W. W. Vass, J. S. Eaton, J. W. King, G. W. Mordecai, H. D. Byrd, Thos. Miller, and N. T. Green. The election of the President was postponed until the next meeting of the stockholders. It was resolved to elect a chief engineer immediately, and begin at once the construction of the road.

Ohio.

London and Springfield Railroad.—We learn from the Ohio State Journal, that the railroad from Springfield, to connect with the Columbus and Xenia road at London, has been finally located and let; the contract for the whole line being taken by Mr. DeGraff, who has agreed to complete it by the 1st of September, 1852. The road is 19 miles in length, has but three slight curves, and very easy grades.

Cleveland and Mahoning Railroad.—A meeting of the stockholders of this company was to have been held at Warren, on the 20th September, for the purpose of electing directors. The road will pass from Cleveland, through Chagrin Falls, Garrettsville, Warren, Niles, Girard, Youngstown, Poland and Petersburg, to Enon Valley. The line runs through a rich and prosperous country the whole way; and much interest is said to be felt in its construction along the entire route.

Illinois.

Galena and Chicago Railroad.—Seven miles of this road, between Belvidere and Cherry Valley, have been put under contract. The road bed for the whole of that distance is to be ready for the superstructure by the 1st of January, 1852, and it is the intention of the company to follow up with the track as fast as the grading is done. Should the weather therefore prove propitious, the cars will reach Cherry Valley, six miles from Rockford, by the 1st week in January. This will give 87 miles of railroad.

Rock Island Railroad.—The Davenport Gazette of the 11th inst., says that the contract has been taken to construct the Rock Island and Chicago road to the Mississippi by the 4th of July, 1853.

Influence of Railroads.

A late letter by a gentleman who has recently passed over the Ogdensburg railroad, says there are more buildings going up along the line than have been built in the last fifteen years. The value of real estate has almost doubled since this railroad enterprise commenced, and business has received a great impulse. At the western terminus of the road a noble wharf, a mile in length has been constructed, and among the improvements upon it is a flour shed 1200 feet long, a freight house 400 feet long, and an elevator building containing 42 bins, which have the capacity of holding 168,000 bushels of grain. The elevator is worked by a steam engine and can raise from a vessel's hold into the bins, 2000 bushels of grain an hour.

Louisiana and Texas.

A late number of the New Orleans Commercial Bulletin contains a long article from Prof. DeBow, in relation to a railroad connection of some point of permanent navigation on Red river, with the waters of Trinity in Texas. The want of facilities for the transportation of their products to market is seriously felt by the people of Texas, and they are determined to remedy this inconvenience as far as lies in their power. A large portion of the cotton brought to Shreveport is now hauled from a distance varying from one hundred to two hundred miles; and the time and labor lost in its transportation necessarily depreciate the value of the article to the producer. The contemplated road, so much needed by the people of Texas, will be 160 miles long, the terminus of which will be Shreveport on Red river, and Buffalo on the Trinity, running through a fertile country, abounding in good timber, offering in short every facility for the construction of a railroad. It would tap a country west of the Trinity, which for beauty of scenery, health and fertility of soil, is rarely excelled.

The cost of the road is estimated at \$1,800,000, including all the equipments that may be required to put it in good running order. It is conjectured that Texas will take one half of the stock, leaving the other half to be subscribed for by the citizens of Louisiana. A writer in the Caddo Gazette, alluding to this subject, says: "Texas is anxious to throw her trade into New Orleans, knowing that to be the best market. If New Orleans acts, she must do it quickly, or she will lose the trade of a country of more value and importance to her than five railroads in any other direction would give her. There is no time to lose."

Indiana.

Kosciusko, Elkhart and Miami Railroad.—The charter was granted to this company in February, 1848. By its terms, the road was to be commenced in six years, and completed within twelve years of its commencement. Nearly four years have now elapsed without any action; but the people of Kosciusko, Miami and Elkhart counties are now agitating the subject, and a meeting of the citizens of these counties was held at Leesburg, in Kosciusko county, on the 13th inst., for the purpose of consulting upon the expediency of building the proposed road. It is intended to run from Peru, Miami county, to Goshen, Elkhart county, through Warsaw, Kosciusko county, a distance of nearly sixty miles. This road will be a continuation of the Indianapolis and Peru railroad, and will connect Indianapolis with the Northern Indiana road (leading from Toledo to Chicago) by a lateral branch of said road running from Elkhart, on the line, to Goshen, a distance of ten miles. The Kosciusko Republican says:

"The charter for the road is one of the most liberal ever granted by the Legislature of Indiana.—

By the terms of the charter, so soon as \$10,000 of stock is subscribed, the stockholders may proceed to the election of directors by giving the requisite notice required by the act. The capital stock of the corporation is, by the act granting the charter, \$350,000 with the power to increase the amount a sufficiency to complete the road from Peru in Miami county, to Goshen in Elkhart county; or to intersect the Buffalo and Mississippi railroad. In the county of Elkhart subscriptions may be made in money, real estate, proper material for the construction of the road, or choses in action; the charter to continue for 75 years."

Kentucky.

New Railroad Depot at Louisville.—The Louisville Courier says this building is one of the largest in the west, covering an area of 400 feet in length by 87 in breadth. It is built of brick and stone, in the most substantial manner, and will, when completed, be an ornament to the part of the city in which it is situated.

The roof is what is called a "truss roof," and attracts much attention and admiration. It is 400 feet long by 89 in breadth, and the largest piece of timber used is 4 by 6 inches, without pillars or support of any kind in the centre. It is constructed on such a principle that the roof, instead of swagging or depressing, is as level as a floor, and is justly regarded as a skillful piece of mechanism.

Trade with America.

On the 16th ult. a parliamentary paper was issued, showing the trade of the United Kingdom with the United States of America in the last four years. In 1847 the declared value of British and Irish produce and manufacture exported to the United States of America was £10,974,161; in 1848, £9,564,909; in 1849, £11,971,028; and in 1850, £15,191,961. The imports from the United States have increased. In the three years (last year's account not being made up) the official value of the imports was respectively, £20,349,882, £23,916,855, and £26,554,941.—*London Times.*

Tennessee

The cars on the Nashville and Chattanooga railroad, are now running from Nashville to a point eight miles this side of Murfreesboro. The work on the remaining portion of the road is progressing rapidly.—*Nashville Banner.*

RAILROAD SPRINGS.

Fuller's India-rubber Springs.

THESE are now made in our own factory, of the best materials. Each spring is guaranteed to perform the required work. Purchasers guaranteed against adverse claims.

Car Builders will save great expense by calling at the office of the Company.

23 Courtland St., New York.

To Contractors.

Cincinnati and St. Louis Railroad.

SEALED proposals will be received at the Office of the Company till Wednesday, the 1st day of October next, for grubbing, grading and bridging forty-five miles of the Ohio and Mississippi railroad, from Mill Creek, in Cincinnati, to a point twenty miles west of the city of Aurora, Ind.

Plans specifications, &c., may be examined by Contractors, at the Office of the Company, in Cincinnati, from the 20th of September, to the day of letting.

By order of the Board,

ABNER T. ELLIS, Pres't.

Cincinnati, August 16th, 1851.

To Railroad Companies.

THE undersigned has discovered and patented an imperishable, cheap, and sufficiently elastic substance, to be introduced between the sill and rail, so that the stone sill can be used in place of the wooden sill: entirely overcoming that rigidity where the rail is laid directly on stone. Address

J. B. GRAY, Philadelphia.

July 10, 1851.

4m

Pneumatic process for making Foundations for Bridges, Piers, etc.

THE Attention of Engineers, Contractors, and Bridge Builders, etc., is directed to this method of forming secure foundations. Hollow Cylindrical piles from 8 inches to 10 feet in diameter may be sunk through sand, mud, clay, etc., to any required depth, and filled with concrete or masonry. The efficacy and economy of the process has been demonstrated in the construction of numerous permanent works, at a much less cost than the use of any other method. (See evidence in Parliamentary enquiry, Railroad Journal, April 19, 1851.)

Contracts made, or licenses granted for the use of the invention in any part of the United States, by

CHARLES PONTEZ,
34 Liberty street, N. Y.

To Contractors.

ORANGE & ALEXANDRIA RAILROAD,
Engineer's Office, Sept. 6, 1851.

SEALED Proposals will be received at this Office, until the 1st day of October inclusive, for the graduation and masonry of the Third Section of the Orange & Alexandria Railroad, and of the Warrenton Branch Railroad.

The length of the main road now to be let completes the line to Gordonsville, a distance of twenty-six and a half miles. The length of the Branch Road is nine miles.

The work will be divided into mile sections. It will be for examination on and after the 20th inst. Specifications will be ready at the same time.

Bidders unknown to the undersigned, must produce satisfactory testimonials.

By order of the Board.

T. C. ATKINSON, C. E.

September 13, 1851.

To Contractors.

York and Cumberland Railroad, Maine.

Portland, Sept. 12th, 1851.

PROPOSALS will be received at the office of the York & Cumberland Railroad Company in this city, from the 10th to the 15th day of October next, for the grading, masonry and bridging of the York and Cumberland Railroad from Gorham Station to Great Falls, a distance of about 38 miles. Proposals will also be received at the same time and place, for building the entire line of said road, including the superstructure, or any one or more divisions thereof.

Plans, profiles and specifications will be exhibited, and all requisite information given at the office of the company, in Portland, on and after the 10th of October next.

Trains have run from Portland to Gorham during the past season; work has also been done to a considerable extent at the western end of the line, between Great Falls and Springvale.

The York and Cumberland Railroad when completed will be the great interior line—in connection with the Boston and Maine Railroad—between Portland and Boston, and will command the principal travel between the two cities.

By order of the Board of Directors,

JOHN A. POOR, President,

JOHN F. ANDERSON,

September 15.

Chief Engineer.

Virginia Locomotive and Car Works.

Wolfe Street and River Potomac, Alexandria, Va.
SMITH & PERKINS, Proprietors.

MANUFACTURE

Locomotive Engines and Tenders.

Marine and Stationary Engines and Boilers.

Chilled Car Wheels and Axles.

Patent Chilled and Wrought Slip-tire.

Machinery and Castings generally.

The undersigned having erected very extensive shops, and procured the most modern machinery and tools, are prepared to execute orders for Locomotive Engines, Cars, and Machinery of all kinds, with despatch, and on the most favorable terms.

R. C. SMITH,

Late of the Alexandria Iron Works.

THATCHER PERKINS,

Late Master of Machinery on the Balt. & O. R.R.

July 22, 1851.

To Contractors.

A DIVISION of about 30 miles of the grading, together with the mechanical works of the South Side Railroad, commencing near Farmville, and extending westward, will be let on the 15th of October next, at Farmville.

C. O. SANFORD, Chief Engineer.

Petersburg, September 4th, 1851.

Wanted,

BY the Montreal Mining Company, a Manager for their Establishment at the Bruce Mines, Lake Huron.

Applications stating terms, and enclosing certificates of character and ability, will be received by the undersigned until the 1st October next.

By order.

H. D. COCKBURN, Secretary.

Montreal, August 27, 1851.

To Contractors.

THE SUNBURY AND ERIE RAILROAD COMPANY invite proposals for grading and bridging the line of the road, for a double track, from the City of Erie to Williamsport, in Lycoming county, in a substantial and workmanlike manner, complete in every respect for the superstructure.

Proposals should be addressed to D. L. MILLER, Jr., President, Philadelphia, on or before the 20th of Ninth month (September) 1851. Contractors will state what proportion of the Stock of the Company, if any, they will take at par in payment.

It is believed that the superiority of the harbor of Erie, the favorable position of the route, and the shortness of the distance secured by this, compared with any other railroad from the Lakes to the seaboard, will render this road as profitable, and its stock as good an investment, as that of any ever constructed in the United States.

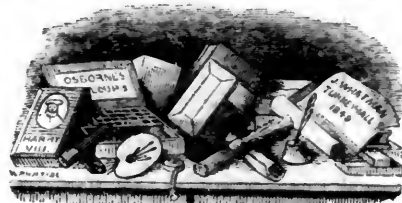
A copy of EDWARD MILLER'S Second Report will be forwarded to those to whom this Circular may be addressed.

A MASS CONVENTION of the friends of this great project will be held in the City of Philadelphia on the 25th of Ninth month (September), at which all interested are invited to attend.

3c36

Hufty's

Engineers, Architects and Draftsmen's
STATIONERY EMPORIUM.



WHATMAN'S Turkey Mill Drawing paper, Tracing paper, Plan and Profile, Protractors, Drawing Pins, Faber's, Jackson's and other makers' Pencils; Field, Level, and Memorandum Books of various patterns; Mathematical Instruments, Tape-lines, Mouth Glue, Cross Section paper, Triangles, Sabel Brushes, Gum Bands, Maiden Gum, Red Tape, Ink, Inkstands and Sand, Water Colors, Palettes, Patent Binders for letters, Portfolios, etc., together with a general assortment of Stationery and Blank Books. All goods packed with care, and forwarded to any part of the United States.

JOSEPH HUFTY,

Successor to H. L. Lipman,
139 Chestnut st., Philadelphia.

May 15, 1851.

Railroad Iron.

THE undersigned, Agents for British Manufacturers, continue to sell Railroad Iron of the best quality, and of any weight or pattern required; deliverable at any part of the United States or Canada.

They have now on hand, ready for delivery at New York:

2,000 tons of an approved pattern, weighing about 60 lbs. to the yard.

WM. F. WELD & CO.,
42 Central Wharf, Boston.

Bridges & Brother, DEALERS IN RAILROAD AND CAR FINDINGS, 64 Courtlandt street, New York.

Having established a general Depot for the sale of articles used in the construction of Railroads, Locomotive Engines and Railroad Cars, we would invite your attention to our establishment. We have already in store a good assortment of CAR FINDINGS and other articles used in the trade, and feel justified in saying, that should you desire anything in our line, we can supply on terms perfectly satisfactory, and in the event of your desiring to order, you may feel assured that your terms will be as good as though you were here to make your own purchases.

Among our goods may be found Railroad Car Wheels, Axles, Jaws and Boxes, Nuts and Washers, Bolts, Brass Seat Hooks and Rivets, Window and Blind Springs, Lifters and Catchers, Door Locks, Knobs and Butts, Ventilators and Rings, Car Lamps, Coach and Wood Screws, Jack and Bed Screws and Babbitt's Metal; also Plushes, Damask, Enamelled Head Linings, Cotton Duck for Top Covering in width sufficient without seams, Curled Hair and all other articles appertaining to cars.

Also a new and valuable CAR DOOR LOCK, well adapted to the Sliding Door. This is decidedly the best yet introduced.

LOCOMOTIVE ENGINE LANTERNS, the best article made in the country. Whistles, Gauge and Oil Cocks, Hemp Packing, American, Russian and Italian. We are also agents for Lightner's Patent Journal Box for Car Axles, that invaluable invention, for the economical use and preservation of Car Journals.

Coach VARNISH and Japan of the best quality. We would also offer our services for the purchase as well as for the sale of goods on commission.—Both members of our firm have had the experience of many years in the manufacture of Railroad Cars, and our Senior was a member of the well known house of DAVENPORT & BRIDGES, Car Manufacturers, Cambridgeport, Mass. With our knowledge of matters pertaining to Railroads, we feel quite confident in giving satisfaction to both buyer and seller, and hope that through assiduity and attention to any business entrusted to our care we shall merit a continuance of confidence and patronage.

BRIDGES & BROTHER.

July 22, 1851.

Lightner's Patent Axle Boxes.

THE Undersigned are Agents for, and offer for sale, *Lightner's Patent Axle Boxes*, for Railroad Cars and Tenders, which have, by thorough experience, been demonstrated to be one of the most valuable improvements ever introduced in Locomotion. The saving effected in oil alone, will in a few months pay the first cost of these boxes, independent of other advantages. They are now in use upon the following, among other roads, viz:

Boston and Worcester, Boston and Providence, Boston and Fitchburg, Nashua and Lowell, Providence and Worcester, Northern, N.H., Cheshire, Manchester and Lawrence, Concord, N.H., Concord and Claremont, Ogdensburg, (Northern, N.Y.) Stonington, New London Willimantic and Palmer, New Jersey Central, New Hampshire Central, Worcester and Nashua, Fitchburg and Worcester, Connecticut and Passumpsic, Lowell and Lawrence, Salem and Lowell, Wilton Branch, Newburyport.

Below will be found the certificates of a number of gentlemen, whose opinions will be good authority in every part of the country.

Office Boston and Prov. R. R., }
Boston, Dec. 29, 1849. }

MR. JOHN LIGHTNER,

Sir,—It affords me pleasure to say, that after two years' trial of your boxes, I am fully and entirely satisfied of their superiority over any other pattern we have used. This superiority consists in economy of oil and freedom from "heating." I have tried every pattern of box in use, of any note, and do not hesitate to say, that you have devised one which in every respect combines greater advantages than any other within my knowledge; these advantages are so manifest, that I am fitting up all

our cars with your boxes, as fast as practicable.

Annexed, is a statement of an experiment with your boxes, the result of which may be of use to your interests.

Ten passenger cars, running 72 wheels, fitted up with Lightner's boxes used 41½ pints of Patent Oil, at 50 cts. per gallon, ran 43,099 miles, equal to 5-18 pints per wheel for 43,099 miles. Speed, 30 to 40 miles per hour.

Very respectfully yours,
W. RAYMOND LEE, Supt.

I have examined the above statement of Mr. Lee, and fully concur with him in his opinion of the superiority of Lightner's box.

GEORGE S. GRIGGS,
Supt. Machine Shop B. & P. R. R.

Boston, July 26, 1849.

This is to certify that J. Lightner's axle boxes for railroad cars and locomotive tenders, have been in use on the Boston and Worcester railroad one year, and I unhesitatingly pronounce it, in my opinion, the best and most economical one in use, requiring less oil, of easy application, not susceptible of derangement, as in most kinds in use. When requiring repairs or renewal, the same may be done in one-fourth of the time usually occupied for that purpose. The box requires oiling not oftener than once a month—is kept quite free from dust, and consequently wears much longer than those generally in use.

D. N. PICKERING,
Supt. Motive Power, B. & W. R. R.

Office of Boston Locomotive Works, }
December 12th, 1849. }

The Boston Locomotive Company have been using J. Lightner's patent axle boxes under the tenders of their engines for several months, and find them more highly spoken of by the railroad companies that have used them in regard to economy in the use of oil, their durability and their ease of adjustment, than any other boxes which they have used. We therefore do not hesitate to recommend them to all railroad companies.

DANIEL F. CHILD,
Treas. Boston Locomotive Works.

Taunton Locomotive Works, }
Taunton, July 7, 1849. }

MR. H. F. ALEXANDER,

Dear Sir,—Your favor of yesterday came to hand in which you ask what success we have met with, in using Mr. Lightner's patent box for cars, engines, &c.

We have put it in use on the Boston and Providence railroad, New Bedford and Taunton Branch railroad, Central railroad, N. J., Norfolk County, Rutland and Burlington, and as yet we have not had one complaint from them; and from what we have used of it, and witnessed, we do not hesitate to say that it is superior to anything in use for that purpose. It is simple in its construction, and easy of access, and the reservoir is held close to the shaft, and the oil and journal is perfectly secure from dust; they will run from four to six weeks without replenishing the oil. The brass in the box is changed very much easier than by any other plan that we have seen.

Very resp. yours,
W. W. FAIRBANKS, Agent.

Office Providence & Worcester R. R. Co., }
Providence, Dec. 17th, 1850. }

H. F. ALEXANDER, Esq.,

Sir,—The "Lightner patent boxes" for cars and locomotives have been in use under a portion of the passenger cars and engines of this company for upwards of two years, and have given very great satisfaction.

Though combining many excellent qualities, their great superiority consists in the economy of oil.

The result of experiments upon this road shows the consumption of oil by the use of this box, to be not more than one sixth part the quantity consumed by the use of the common box.

With the common box, eight passenger cars, 64 wheels, running 90 miles per day, consumed in 12 months 520 gallons of oil, being an average of 8½ gallon per wheel per annum.

With the Lightner box the same cars running the same number of miles per day, during the same space of time consumed 73½ gallons of oil, being an average of 1½ gallon per wheel per annum.

So manifest are its advantages over any other box used by this company, it is intended to place it under all our cars as soon as practicable.

Besides the saving of oil, as they afford complete security from dust, we think them more durable than any other box in use.

Another advantage resulting from the use of this box is, cars run more easier than with the common box. The saving in fuel which it would effect, would of itself, we think be a sufficient inducement to use this box in preference to any other known to us.

Very respectfully,
ISAAC H. SOUTHWICK, Supt.
JOHN B. WINSLOW,
Supt. Machine Shop, P. & W. R. R.

Cambridgeport, April 5th, 1851.

H. F. ALEXANDER, Esq.

Sir,—This may certify that I have been engaged in the manufacture of railway cars since 1834, and have built for the different railroad companies cars of all descriptions to the amount of three millions of dollars, and have used on the above cars all kinds of journal boxes, and find that none give better satisfaction than the "Lightner patent box," both on account of the saving of oil and the arrangement for taking out and re-placing the composition by means of the sliding key, and other conveniences which no other box possesses.

Yours respectfully,
CHARLES DAVENPORT.

Worcester, March 17th, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—This is to certify that I have been for some years past engaged in building cars, and that I have tried most, if not all of the patent boxes, and have found Lightner's patent superior to all others as far as the saving of oil is concerned, also the ease with which they are fitted and exchanged in case they get out of order.

For the last three years, I have put them under all of the cars I have built, and in every instance they have given the most entire satisfaction.

Yours truly,
OSGOOD BRADLEY.

Office Union Works, So. Boston, }
May 23d, 1851. }

This certifies that I have applied Mr. J. Lightner's patent axle boxes to my locomotives and tenders for the past two years. I consider them superior to all others,—economical in their use, and possessing many important advantages not found in any other boxes.

SETH WILMARTH.

Office 15, R. R. Exchange, Boston, }
June 1, 1851. }

This is to certify, that we have known the success of Lightner's patent journal boxes upon various roads in New England the past three years, and have been led to examine their peculiar construction.—We are well satisfied of their merits, and have adopted them upon our small gravel cars, and take pleasure, as we ever have done, in recommending their use upon all roads where we are employed in the construction.

GILMORE & CARPENTER,
Contractors.

Amoskeag Manufacturing Co. Machine Shop, }
Manchester, May 31, 1851. }

H. F. ALEXANDER, Esq.

Dear Sir,—We are using the Lightner box on all the engines and tenders we build, and we are satisfied that it is the best box in use, and recommend the same to all those who purchase engines at our works.

Yours respectfully,
O. W. BAYLEY, Agt.

This is to certify that the Fitchburg railroad company having become satisfied of the superiority of J. Lightner's patent Axle Boxes for Railway Cars and Locomotive Tenders adopted the same

and are bringing them into general use upon their road.

One year's experience with the above improvement, has fully convinced me that there has never been anything offered to the public for that purpose which possess such intrinsic value; in fact, this is an improvement which seems to overcome all the difficulties found in all the various kinds now in use. It possesses very many advantages over all others: Some of which are [first] the first cost is much less than that of most boxes in use. [Secondly] 75 per cent is saved in oil; one gill applied to each Journal once a month, or one quart to an eight wheel car, is all these boxes require per month [Thirdly] no dust can gain access to the Journal, which is constantly lubricated with clean oil; hence the saving in repairs of Journals and composition bearings, is a matter of importance. [Fourthly,] its construction is truly simple—not complicated, having nothing liable to become loose by constant and severe service. [Fifthly] for convenience there is nothing which approaches this improvement.—The composition bearings may be removed from the Journals of an eight wheel car, by one man, and returned, or duplicates, in twenty minutes, while under the car: the same would require two men, at least half a day with other boxes in use.—The trucks and wheels using these boxes, are free from oil and dirt, usually seen upon all railroad cars, at great expense to the corporation.

NATHL JACKSON,

Supt. Car Building and Repairs, F. R. R. Co.

Boston, March 9, 1849.

I hereby certify, that I have examined a box for Car Journals, invented by Mr. Lightner of Roxbury, Mass, and I have thought so well of it that I have adopted it on our railroad, I have known of its success on other roads.

S. M. FELTON,

Supt. F. R. R.

Office of the Central R. R., N. J.,
Elizabethtown, May 1849.

H. F. ALEXANDER, Esq.,

Dear Sir:—Your favor, [wishing to be informed how we liked Lightner's patent axle boxes for R.R. Journals,] has been duly received; in answer we would say, we have used the boxes on Locomotive tenders one year, more or less, and on our cars some six months. I consider them the best boxes in every respect, I have ever used, or even seen used on any other roads—for safety, durability and the economy pertaining to all the details connected with the boxes and Journals of R. R. Car wheels; and we shall adopt them upon this road.

Yours Respectfully,

JOHN O. STEARNS.

Supt. Central Railroad Co., N. J.

Manchester, N. H., Nov. 1st, 1850.

H. F. Alexander, Sir,

I have used "Lightner's Boxes" under all the Cars of the Manchester and Lawrence railroad, and feel no hesitation in saying that I think them to be the best boxes now in use.

Yours, &c.,

THEODORE ATKINSON, Agent.

Cheshire R. R. Office, Keene,
March 5th, 1851.

Mr. H. F. Alexander,

Sir,—Lightner's Patent Boxes have been used on the Cheshire R. R. about a year, and have given the highest degree of satisfaction.

All the Passenger Cars now in use, and a considerable number of Merchandize Cars are furnished with them, and they will take the place of the Common Boxes on all the cars as fast as circumstances will permit.

Very Resp't.

L. TILTON,

Supt. Cheshire R. R.

Boston and Worcester Railroad,
Boston, April 1st, 1851.

H. F. Alexander, Esq.,

Dear Sir,—Lightner's Patent oil saving box for railroad cars, has been adopted by this corporation; we are taking out the common and substituting the

Lightner's at the rate of fifty boxes per month; it will soon take the place of all others, as it is decidedly preferable to any heretofore used by this corporation.

G. TWITCHELL, Supt.

Statement of amount of oil used on 32 8-wheel freight cars, on the Boston and Providence Railroad (with Lightner's Boxes) from March 10, 1849, to February 27, 1851, and upon 12 8-wheeled passenger cars from September 8, 1849, to February 27, 1851.

FREIGHT CARS.

Amount Oil.	No. months.	Amount Oil.	No. months.
1.—21 pts.	10	17.—23½ pts.	14
2.—19 "	6	18.—23½ "	11
3.—25 "	13	19.—36 "	21
4.—18 "	7	20.—22 "	10
5.—22 "	12	21.—38½ "	24
6.—24 "	13	22.—29 "	23
7.—20 "	11	23.—35½ "	23
8.—21 "	11	24.—37½ "	23
9.—23½ "	10	25.—51 "	23
10.—21 "	9	26.—31½ "	24
11.—20 "	9	27.—28½ "	23
12.—21½ "	11	28.—36 "	23
13.—19 "	8	29.—50½ "	24
14.—25½ "	17	30.—50½ "	23
15.—20½ "	10	31.—41 "	23
16.—31 "	18	32.—39½ "	23

Total, 925½ pts. 510

PASSENGER CARS.

1.—19½ pts.	18	7.—30 pts.	18
2.—25½ "	18	8.—25½ "	18
3.—33½ "	16	9.—29 "	18
4.—19 "	15	10.—46½ "	17
5.—15 "	15	11.—9 "	9
6.—22 "	18	12.—65½ "	17

Total, 340 pts. 197

Averaging 1 4-5 pints of oil for freight, and 1 7-10 for passenger cars per month only!

All orders and enquiries promptly attended to.

BRIDGES & BROTHER,

No. 64 Courtlandt st., New York.

July 25, 1851.

To Boiler Makers, Engineers, etc., etc.

PATENT LAP-WELDED IRON TUBES,

Manufactured by the

BIRMINGHAM PATENT IRON TUBE CO.

UNDER

PROSSER'S PATENT,

from one and a quarter to eight inches in diameter.

These tubes are well known for their superiority over all other descriptions for Locomotive, Marine and other Steam Engine purposes, for which they are used very extensively in Great Britain and on the Continent of Europe.

For sale in quantities to suit purchasers, by

WILLIAM BIRD & CO.,

44 Wall st., New York.

July 26, 1851.

To Chief Engineers, Directors of Railroads, Canals, etc.

A Civil Engineer and Surveyor, who has been professionally engaged under the British Government, East India Company, etc., is desirous of obtaining employment as an Assistant. No objection to the South or West. Address for one month to C. E. & S., American Railroad Journal office. August 16, 1851.

To Engineers.

A NEW WORK on the Marine Boilers of the United States, prepared from authentic drawings, and illustrated by 70 engravings, among which are those of the latest and best steamers in the country, has just been published by B. H. Bartol, Engineer, and is for sale at the store of

D. APPLETON & CO.,

Broadway.

September 1, 1851.

CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by POWERS & WEIGHTMAN, manufacturing Chemists, Philadelphia.

Jan. 20, 1849.

European and North American Railway.

THE undersigned, the three persons first named in the first section of an act passed by the Legislature of Maine, and approved the twentieth day of August last past, entitled "An Act to incorporate the European and North American Railway Company," and being specially authorised therefor in and by said act, hereby give public notice that, for the purpose of receiving subscriptions to the stock of said company, as established by the act aforesaid, according to the provisions thereof, not exceeding forty thousand shares, books of subscription will be opened under the direction of the undersigned, according to the regulations prescribed, at the time and places following, viz:—On WEDNESDAY, the Twentieth day of August next, At Calais, Maine, with Noah Smith, Jr., Esq. Eastport, do. " Col. Bion Bradbury. Machias, do. " Walker & O'Brien, Ellsworth, do. " Seth Tisdale, Esq. Oldtown, do. " Geo. P. Sewall, Esq. Bangor, do. " Geo. W. Pickering, Esq. Orono, do. " Hon. Israel Washburn, Jr. Waterville, do. " Hon. Timothy Boutelle. Brunswick, do. " Prof. William Smyth. Augusta, do. " B. A. G. Fuller, Esq. Belfast, do. " John Y. McClintock, Esq. Portland, do. " John B. Brown, Esq. Portsmouth, N.H. " Hon. I. Goodwin. Salem, Mass. " Stephen A. Chase, Esq. Boston, do. " Francis Skinner & Co. Lowell, do. " John Wright, Esq. Worcester, do. " Charles Washburn, Esq. Providence, R.I. " Billings Brastow, Esq. Hartford, Conn. " Hon. C. F. Pond. New Haven, do. " Allen Prescott, Esq. New York, N.Y. " R. & G. L. Schuyler, No 2 Hanover street.

Said books will remain open for ten successive days at the places and with the persons aforesaid. Dated at Portland, this sixteenth day of June, A. D. 1851.

ELIJAH I. HAMLIN,
ANSON G. CHANDLER,
JOHN A. POOR.

Trautwine on R. R. Curves.

By JOHN C. TRAUTWINE, Civil Engineer, Philadelphia, Pa.

IN press, and will be published in a few days; accompanied by a Table of Natural Sines and Tangents to single minutes, by means of which all the necessary calculations may be performed in the field.

This little volume is intended as a field-book for assistants; and will be found extremely useful, as it contains full instructions, (with wood cuts) for laying out, and adjusting curves; with Tables of Angles, Ordinates, etc., for Curves varying from 13 miles, down to 146 feet Radius.

A portable Table of Natural Sines and Tangents to minutes, has for a long time been a desideratum among Engineers, independently of its use in laying out curves.

The volume is neatly got up in duodecimo; and handsomely bound in pocket-book form.

Sold by Wm. Hamilton, Actuary of the Franklin Institute, Philadelphia. Price \$1.

Also in press, and will be issued in a few weeks, "Trautwine's Method of Calculating Excavation and Embankment."

By this method, which is entirely new, (being now made known for the first time) the cubic contents are ascertained with great ease, and rapidly, by means of diagrams, and tables of level cuttings. Thin octavo; neatly half bound, \$1. For sale by Wm. Hamilton.

June 28, 1851.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices, and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

Notice to Contractors.*Steubenville and Indiana Railroad.*

PROPOSALS will be received at the Office of the Steubenville and Indiana railroad company in Steubenville, until the first day of October next, for the Grading and Masonry of the first division of the road extending from Steubenville to the Connotten valley and also for the construction of the entire road between Steubenville and Coshocton; and also distinct proposals for the construction of that portion of the road extending from Coshocton to Newark.

The entire length of this line is about 110 miles, and it contains work of all descriptions, in great variety, some of which is quite heavy.

Proposals will be received for the Grading and Masonry of the first division entire or in sections of about a mile each, the Company reserving the privilege to make such disposition of the whole work, as may appear most conducive to its interests.

Plans, profiles and specifications can be seen at the office of the Company after the 15th of September, and further information may be obtained on application to J. Blickensderfer, jr., Chief Engineer, or to the undersigned,

D. KILGORE, President.

Notice to Contractors.*Engineers Office, E. T. & V. R. R. Company, Greenville, E. T., June 5th, 1851.*

PROPOSALS will be received until the 1st day of October next, for the Grading and Masonry of that part of the E. T. & V. Railroad between the Eastern terminus of said road at King's Meadow, and Rheatown, in Greene County, a distance of about forty-seven miles. A large amount of very heavy work, both in Grading as well as Masonry, will be found on this division, offering strong inducements to able Contractors.

Maps, Profiles, and Specifications can be seen at this Office, on and after the 20th of July next.

The Company reserve the right to reject all, or any proposals that they deem unsatisfactory.

Proposals should be directed to the Treasurer and Secretary of the E. T. & V. Railroad Company, Jonesborough, E. T.

LLOYD TILGHMAN,
Chief Engineer.**Railroad Lanterns.**

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,

No. 24 Commercial St. Boston.

August, 16, 1849.

6m33

Railroad Iron.

THE Subscribers, Agents for the Manufacturers, are prepared to contract for the delivery of Railroad iron at any port in the United States or Canada, or at a shipping port in Wales.

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29 Central Wharf.

Boston, June 1, 1851.

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40 Best Flange Bars 5½x2 inches, 11 feet long.
40 " " 5½x2 " " 7 feet 8 in. long.
40 " Flat " 6x2 " " 11 feet long.
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RAYMOND & FULLERTON,
45 Cliff street.**To Railroad Companies,
Machinists, Car Manufacturers, etc., etc.**CHARLES T. GILBERT,
NO. 80 BROAD ST., NEW YORK,

IS prepared to contract for furnishing at manufacturer's prices—

Railroad iron,
Locomotive Engines,
Passenger and Freight Cars,
Car Wheels and Axles,
Chairs and Spikes.

Orders are invited; and all inquiries in relation to any of the above articles will receive immediate attention.

THE Fourth Annual Exhibition of AMERICAN MANUFACTURES, by the MARYLAND INSTITUTE for the Promotion of the Mechanic Arts, will be opened in Baltimore on the 20th October, 1851.

The Exhibition will be held in the SPLENDID NEW HALL of the Institute, (fronting on Baltimore street) now being rapidly completed. Their edifice is centrally situated, chaste in its architecture, solid in its construction, and is by far the largest and most complete building in the United States, devoted to the Mechanic Arts. It may be added that this building is 355 feet long by 60 in breadth, with an average height of 68 feet, containing some twelve apartments, the largest of which is 255 feet by 60, and that the cost will be over \$70,000.

To this Exhibition, the Managers ask the attention of all engaged in industrial pursuits throughout the country, and cordially invite them to contribute specimens of their best productions for public inspection, and to compete for the prizes offered by the Institute. These prizes consist of GOLD and SILVER MEDALS, DIPLOMAS, etc., which were last year distributed as follows:—Gold Medals, 16; Silver ditto, 90; Diplomas, 60; besides 85 articles of Jewelry, etc., to ladies. Fair play will be scrupulously observed towards all, and every facility of Steam power, shafting, fixture, labor, &c., &c., will be amply provided free of expense. The machinery will be under a special superintendent, and a fine display of it is looked for. The last exhibition of the Institute was visited by more than 40,000 persons, and with their vastly improved accommodations and alterations, this number will be doubled at the coming display, embracing many Virginians, Pennsylvanians, and other strangers from the South and West.

Joshua Vausant, President.

Ed. Needles, } Vice Presidents.

F. A. Fisher, }

Samuel Sands, Rec. Sec'y.

Wm. Prescott Smith, Cor. Sec.

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(The last nine in *Italics* are the Committee on Exhibition.)

The Hall will be opened for the reception of goods on MONDAY, 13th October; on the next Monday, 20th, at 7 P. M., the Exhibition will be formally opened to the public, and will positively close on Wednesday, 19th November. Articles for competition must be in the Hall by Thursday night, Oct. 16, unless delayed in shipment after starting in ample time.

Those who intend depositing, will give the Committee or the Agent, notice as early as possible, stating the nature of the goods, and probable amount of room required, to exhibit them to advantage.

Circulars, containing a view of the new Hall and the full regulations of the Committee, with special information, if required, may be had promptly, by addressing the undersigned, or the Institute's Agent, J. S. Selby, Baltimore, post-paid.

ADAM DENMEAD,

Chairman Com. on Exhibition for 1851.

SUPERIOR BLACK WRITING & COPYING INK.**Jones' Empire Ink.**

87 Nassau st., Sun Building, New York city.

Net prices to the trade—

Quarts, per dozen,	\$1 50	6 oz. per dozen,	\$0 50
Pints,	1 00	4 " "	0 37½
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On draught per Gallon, 20 cents.

This is the best Ink manufactured. It flows freely, is a good copying ink, and will not mould, corrode, precipitate or decay. Orders for export, or home consumption, carefully and promptly attended to by

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THEODORE LENT.

To Railroad Companies, etc.

The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

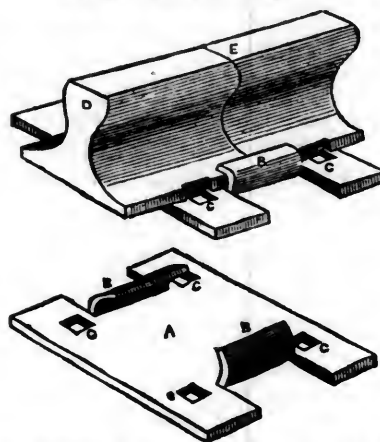
I also invite attention to an improved PATENT SPRING LOCK, for SLIDING Doors to Freight and Baggage Cars, now in use upon the Pennsylvania Central, Greenville and Columbia, S.C., Reading, Pa., and other Railroads.

Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH,

46 South 8th St. Philadelphia.

May 9, 1851.

The American Railroad Chair Manufacturing Co.

ARE prepared to make WROUGHT IRON RAIL ROAD CHAIRS, of various sizes, at short notice.

By use of the WROUGHT IRON CHAIR, the necessity of the wedge is entirely done away—the lips of the chair being set, by means of a sledge or hammer, close and firmly to the flange of the rail.

The less thickness of metal necessary in the Wrought Iron Chair gives much greater power and force to the spikes when driven—and consequently a much less liability to the spreading of the rails by reason of the spikes drawing or becoming bent.

The less weight necessary in the Wrought Iron Chair, will enable us to furnish them at a cost much below that of CAST IRON CHAIRS.

DESCRIPTION OF THE ABOVE CUTS.

Figure 1 is a perspective view of the rail secured in the chair, and fig. 2 is a perspective view of the chair itself. D, E, are sections of two rails placed together, and secured at the joint on the chair by the jaws B, B. The chair is bolted down by spikes C, C. In fig. 2, the chair is represented as made of a single block or plate A of wrought iron.

The chair is set in its proper place on the track, spiked down, and the ends of the two rails brought together within the jaws as represented in fig. 1.

For further information address,

N. C. TROWBRIDGE, Secretary,
Poughkeepsie, N. Y.

June 1, 1851.

Railroad Commission Agency.

THE Subscriber offers his services to Railroad Co's and Car Makers for the purchase of equipment and furniture of roads and depots and all articles and materials required in the construction of cars, with cash or approved credit. No effort will be spared to select the best articles at the lowest market price.

He is sole Agent for the manufacture of the ENAMELED CAR LININGS, now in universal use. The best Artists are employed in designing new styles, and he will make to order pieces with appropriate designs for every part of the car, in all colors, or with silver grounds and bronzed or velvet figures.

He is also Agent for Page's Car Window Sash Fasteners, which is preferred by all who have used it to any other.

CHARLES STODDER,

75 Kilby st., Boston.

June 20, 1851.

3m.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 136 NASSAU ST., NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.
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ASSISTANT EDITORS,
J. T. HODGE, *For Mining and Metallurgy.*
GEN. CHAS. T. JAMES, *For Manufactures and the Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & CO., 136 NASSAU ST.

Saturday, October 4, 1851.

For the American Railroad Journal.

Marietta and Philadelphia vs. the Parkersburgh and Baltimore Railroad.

Under the above heading, an article signed "Philadelphia," appears in the Journal of 23d, in reply to one signed "Baltimore," in that of the 9th of August last.

Circumstances have not permitted an earlier notice of what is said by "Philadelphia." To that in it which requires comment, the following remarks are addressed.

The mode employed by "Baltimore" of estimating distances upon surveyed lines, is sneeringly spoken of by "Philadelphia," as a "convenient" method—whereby, with the aid of a "sliding scale," any desired result may be produced.

To this imputation of unfairness it is simply answered, that at least as much confidence is to be placed in such measurements upon authentic maps, with due allowance for increase of distance by ne-

cessary deviation and curvature, to be determined by the known topography of the country, and the ascertained results of surveys for similar objects, over such ground—as in lines run for effect, without due regard to the principles which should govern railway locations, but to help the projectors of such lines to raise the capital to make them. I charge this kind of trick upon no one particularly, but I do aver that it is in all cases proper to suspend opinions till the plans, profiles and estimates of cost upon competing routes are exhibited. The public will be wise enough to await the result of these further developments before they decide.

Further discussion about distances would be fruitless. The facts will be known in due time, and with these before them, the profession and the public will determine who has the best line. Until their incorrectness is demonstrated, I shall adhere to my estimates of distance heretofore offered—and which make the Parkersburgh and Baltimore route from Philadelphia to Athens 519 miles (with the Knobly cut-off,) while between the same points the route via the Hempfield road and Marietta would be 530 miles—a difference in favor of the Baltimore line of 11 miles, instead of one of 23 against it, as asserted by "Philadelphia;" who has, however, abated 21 miles of the difference claimed by the party who preceded him on that side of the question.

Next as to the *time of transit*, which is well enough said to measure distance to the traveller. Let us see if some mistakes have not been made by "Philadelphia" under this head.

First. The Baltimore and Parkersburgh route.

1st. He allows 6 hours for the 98 miles between Philadelphia and Baltimore—only 16½ miles per hour over one of the straightest and most level routes in the country—and he asserts this to be the "express mail time" over that road. But the fact is otherwise. The express mail, while it ran during the interval of steamboat navigation, made the distance in 4½ hours, notwithstanding the obstructions mentioned by Philadelphia. The "boat" at the Susquehanna is not a row-boat, as he would appear to wish us to believe, but in fact a floating bridge, on which the entire train of cars might be carried over, were it not considered best to let the passengers loose for a little while, with a loss of not more than ten minutes of time. The "various streams and indentations of the Chesapeake," re-

ferred to as crossed by "long trestle bridges," are the Gunpowder, Bush and Back rivers, about 1½ miles wide in the aggregate. The speed over them might safely be 20 miles per hour or more; but reducing it to 10 miles per hour, and comparing that speed with the average of 25 miles over the rest of the road (which can be made with more ease than over any section of the Pennsylvania route of equal length) the loss of time upon these bridges will be but 6 minutes; and the total loss upon them and at the Susquehanna together will be but 16 minutes. Then 98 miles, at 25 miles per hour, with 16 minutes of time lost, will give a total time of 4 hours and 12 minutes instead of 6 hours; and the time can readily be reduced to 4 hours.

2d. Philadelphia makes the distance from Baltimore to Parkersburgh 400 miles, which at his assumed rate of 25 miles per hour, would give just 16 hours; but he makes it 17½ hours, besides the other allowance next mentioned. His arithmetic has been at fault here, as I shall have to show that it has also been at another place.

3d. He allows 2 hours' loss of time by high gradients; meaning those of 82, 105 and 116 feet per mile, which he professes to set forth in detail. Now of these gradients the one of 82 feet on each side of Parr's ridge occupies 4 miles, those of 116 about 20 miles, and those of 100 and 105 about 13 miles—making a total of 37 miles out of 519 miles. Upon these grades an average speed of 20 miles per hour up and down can be safely maintained; but allowing 2 hours to pass the 37 miles at 18½ miles per hour, while at 25 miles per hour they would be passed in 1½ hours, we have a loss of but ½ hour, instead of 2 hours as asserted by Philadelphia.

4th. A delay of ½ hour is estimated for the crossing of the river at Parkersburgh "for want of a bridge which cannot be supplied." But this is a groundless assumption. The river is little more than ¼ of a mile wide, and a floating bridge can carry the whole train over with no more loss of time than the 10 minutes allowed at the Susquehanna. Nor can any one but a stockholder in the Wheeling bridge look upon that as the only point on the river where a similar structure can be built, and at an elevation which will at once and forever put it out of the way of the navigation. By a bridge of this character, also, the Susquehanna will no doubt be passed at a future day, while the pile bridges over the inlets of the Chesapeake will be

converted into solid embankments of earth.

5th. From Belpre to Athens, 36 miles, the time is put at $1\frac{1}{2}$ hours, and as this computation is very nearly right, though still a fraction too much, we will not disturb it.

Second. The Hempfield and Marietta route.

1st. Athens to Wheeling in $4\frac{1}{2}$ hours, at 25 miles per hour, gives a distance of but $112\frac{1}{2}$ miles. It would probably turn out not less than 122 miles when properly located, and that would make the time 4 hours 53 minutes at the assumed rate of speed.

2d. Wheeling to Philadelphia in 16 hours, at 25 miles per hour, would give a distance of but 400 miles. It is likely to turn out 408 miles, which would give 16 hours 20 minutes, to which add for loss of time on 10 miles of 95 feet grade, at 20 instead of 25 miles per hour, 6 minutes, and the total time becomes 16 hours 26 minutes. No allowance is made by "Philadelphia" for loss of time in the river crossing at Wheeling. Yet, although the Ohio is bridged there, the bridges were neither of them built for locomotive engines, nor indeed for railway cars. They are not stiff enough to carry such loads, and if they were, the grades up to and over them are too strong for anything but horse power at a very slow speed. There is, moreover, an island some half mile wide between the bridges, which must be considered a part of the crossing; so that, all things considered, it will be but fair to allow at least as much delay at Wheeling as at Parkersburg, or say 10 minutes for passing the river.

Revising now the estimates of "Philadelphia," so as to correct the errors above shown, both in time and distance, we have the following:

1st. Philadelphia, via Baltimore and Parkersburg, to Athens.

	Hours. Min.
Philadelphia to Baltimore, 98 miles, at 25 miles per hour, with 16 minutes loss at the Susquehanna.....	4 12
Baltimore to Parkersburg, 35 miles, at 25 miles per hour, with $\frac{1}{2}$ hour for grades.....	15 54
Parkersburg to Athens, 36 miles, at 25 miles per hour, with 10 minutes for crossing river.....	1 36
Total distance 510 miles, and time.....	21 42

2d. Philadelphia, via Hempfield and Marietta, to Athens.

	Hours. Min.
Philadelphia to Wheeling, 408 miles, at 25 miles per hour, with 6 minutes for grades.....	16 26
Wheeling to Athens, 122 miles, 25 miles per hour, with 10 minutes for crossing river.....	5 03
Total distance 530 miles, and time.....	21 29

Difference against Baltimore route.... 13

Thirteen minutes at most, instead of seven hours, as estimated by "Philadelphia."

And the passenger from Athens, instead of reaching Philadelphia an hour sooner than Baltimore, would reach it full four hours later. That is, Baltimore is at least 4 hours nearer to Athens than Philadelphia.

The average velocity upon the Baltimore route would then be 24 miles per hour, and upon the Philadelphia route 24 7-10 miles; the latter about three per cent greater than the former; and by this mode of computation, the grades of the Pennsylvania route would be only that much better than those of the other; certainly a very small advantage, after all that has been said on that subject.

Lastly. As to ascents and descents, and distances

equated for them, "Philadelphia" admits that he has not seen the profile of the Baltimore road, yet he adventurously dashes into an estimate, with the following results:

He first boldly assumes, without an attempt at proof, that the mountain grades of the Pennsylvania railroad are just balanced by those [and the curves] between the Patapsco and Potomac on the Baltimore and Ohio railroad: meaning, of course, those at and near Parr's ridge. The fact, however, is, that the grades of 82 feet per mile at that ridge, surmount in 4 miles an ascent and descent of but 340 feet, on curves of radii not less than 1500 feet; while the mountain grades of the Pennsylvania railroad, between Altoona and Johnstown, in 10 miles on the east side with a maximum of 95, and 30 miles on the west side with a maximum of 52 8-10 feet per mile, the whole distance being 40 miles, and the shortest curves of 800 feet radius, surmount an ascent and descent of 2032 feet; about six times as much as the other.

With this basis for an equation, "Philadelphia" proceeds to estimate the altitude overcome by the mountain grades of the Baltimore and Ohio railroad, and makes it $3226\frac{1}{2}$ feet of ascents and 1511 feet of descents; a total of 4737 $\frac{1}{2}$ feet. But in order to produce this product, he has to show that $11\frac{1}{2}$ multiplied by 116, makes 2334. The real product of these figures, it will be seen, is 1334; just 1000 feet less than "Philadelphia" makes it. Without discovering his mistake, however, he goes on with right good will to frame his "equation;" and with 66 feet as the equivalent of a linear mile for his divisor, he shortly figures out an addition of $\frac{4737\frac{1}{2}}{66}$

= 72 miles, to be added to the 23 miles previously made out against the Baltimore route. Thus the difference in favor of Philadelphia is increased to 95 miles—just about the distance between the two cities, the latter of which is thus brought as near to Athens as its rival. I shall forbear to retort the sneer with which my own mode of estimating distances is called a *convenient* one; but really this result does look as if the rule by which it is reached were constructed somewhat upon the *ex post facto* principle. "Philadelphia" cites one of the parties to the Grave and Fish creek controversy, in support of the use of 66 as a divisor. That person is doubtless obliged for the compliment, but would, I suspect, be quite willing to give way on this occasion to the authority of the other party to that discussion, who makes 160 feet of rise and fall equivalent to a mile of measured distance. With this last divisor, and correcting the mistake of 1000 feet

just noticed, we should have $\frac{3737\frac{1}{2}}{160} = 23\frac{1}{2}$ miles

only, instead of 72.

Computations so full of false assumptions and arithmetical blunders as those of "Philadelphia," cannot profitably be followed further. I therefore pursue them no longer, as it has been sufficiently shown how little that writer is to be relied upon for correct figures: and if not for them, why for aught else? To the professional authority quoted as not only of the highest but most "disinterested" character upon the points at issue, I must demur, and express my entire dissent from the conclusions of that authority, the incorrectness of which must be sufficiently evident, when it is observed that he makes the whole cost of transportation proportional to the extreme load that an engine of given power can draw upon the extreme grade of each road.

The assertion of "Philadelphia," that there is no charter permitting the Hillsboro' company to go to Belpre, has been contradicted decisively enough by the publication of that charter in the Railroad Journal of 13th September. Even if an obligation under this charter, to go to Marietta, were conceded, [although it is more than doubtful,] there is no prohibition of Belpre, but an unlimited authority to go almost anywhere in the State of Ohio. Such a right would be cheaply bought by the cost of a road of 12 miles up to Marietta on the river bank. But as Marietta would be fully accommodated by the Chillicothe road, it could not be difficult for the Hillsboro' company to procure a release from the making of this useless section. As to the difficulty suggested by "Philadelphia," in the constitutional non-ability of counties and towns to subscribe to such works hereafter, it is first to be seen what the securities of such communities are really worth in the New York market.

The part of his paper in which he is most at home, is that wherein he speaks of the extent and value of the trade of southern Ohio, Kentucky and Tennessee; and I only differ with him here in regard to the share of it which the city of Baltimore is likely to possess. It is not much to the purpose to say that the city of Philadelphia may have had most of it heretofore. A new order of things is about to arise. The smaller community will also be the nearer one to this valuable trade, and cannot be deprived of her share by the jeers of the larger one. If Philadelphia to her greater capital can add the greater enterprise necessary to draw the trade of those rich sections to herself by an attraction so strong as to make it elude the grasp of Baltimore even while passing through her streets, the former city may well afford to the latter "the price of a breakfast or supper to the traveller," as he hurries on his way to her. But Baltimore has her claims as a *terminus*, as well as a *thoroughfare* of trade and travel; and although these have been somewhat lost sight of in comparing her great line of road from Cincinnati with other routes to the more eastern cities, yet they will be thoroughly asserted, and with a success that will surprise both Philadelphia and New York. BALTIMORE.

Manufacturing in Mississippi.

We find in the Clinton (Louisiana) Floridian, an interesting sketch of the cotton factory at Woodville, Miss., which is now in active operation and turns out per week 38,000 yards of Lowells. Both as to finish and durability the goods are of the first order—the linseys particularly fine. The demand for both the cotton and woolen fabrics is greater than the supply. The experiment so far has equaled the most sanguine expectations of the founders. The factory comprises one brick building four stories high, which contains the whole apparatus for manufacturing. There are one engine, eighty horse power, two lappers and willows for preparing the cotton, thirty-six cotton cards, two drawing frames, four railway heads, five speeders, one batting card, two wool cards, one jack, four thousand spindles, two spoolers, two warpers, four dressers, eighty looms, and all corresponding machinery calculated to do 38,000 yards per week. The capital invested \$75,000; the profits when in full operation are about fifty per cent. The number of operatives is generally one hundred and twenty five, at a cost of \$4 25 per week. For the operatives, there are three brick buildings, two stories high, with a basement seventy-five feet long. Each building contains four tenements.

The City of Dayton, Ohio, and her Interests in connection with the Dayton and Western Railroad Company.

Ohio truly takes her position as the first Agricultural State of the Union, and is closely connected in all her interests with Pennsylvania, the largest manufacturing State, also with Indiana, another of the great agricultural regions of our country.—These three States number over five millions of inhabitants, almost one-fourth the entire population of all the States. The business transactions, and social communications between these three States must be far beyond any present calculations.—Who can estimate even the number of persons who will constantly pass east and west from these agricultural, manufacturing, mineral and coal regions to other parts of our common country? No one. The great question then suggesting itself, and which is becoming very important to tens of thousands of our people is, Through which great channel shall this immense product, trade and travel pass in its transit east and west to market? I hesitate not in saying that its course will chiefly be over the *magnetic central back-bone line of railroads*, having its triple head in the cities of New York, Philadelphia and Baltimore, and running through the centre of Pennsylvania to Pittsburgh; and from Baltimore through Maryland and Virginia to Wheeling and Parkersburg, and from these places to a common centre in Ohio, and from thence west. *That centre I claim is to be Dayton.* Who will deny it after examination? Start with your finger upon the map at Pittsburgh and follow the line of railroad to Beaver, Wooster, Loudonville, Delaware and Springfield to Dayton. Or from Pittsburgh again trace the line running through Steubenville, Newark, Columbus and Xenia to Dayton.—Or place your eye upon the map at Wheeling and follow this arm of the Baltimore and Ohio railroad company to Zanesville, Columbus and Springfield or Xenia to Dayton; or from another arm of the same road reaching the Ohio river at Parkersburg, Marietta or Belpre, and from thence west through Chillicothe and Xenia to Dayton and *here in Dayton making a common junction or centre with the Sandusky, Cleveland, Columbus and Xenia, Cincinnati, Hamilton and Dayton, and the Michigan and Dayton railroads.* From this place it passes west with their united trade and travel over the Dayton and Western railroad, as it is united with the Richmond, Indianapolis and Terre Haute road through the very heart of Indiana and Illinois to St. Louis. *What a gigantic chain of railroad is this*, that extends over one thousand miles, and yet is the most direct route between the points named, and is now almost throughout its entire length ready for the—"here comes the train." *Where is the route which unites such vast, extended and valuable interests?*

Look at it upon the map—examine it carefully in all its varied bearings and influence, and then answer whether it is not justly entitled to be called the *Magnetic Central Line*? With New York the very centre of the golden magnet which attracts the monied interests of the whole country, standing at its eastern terminus, and St. Louis in the west holding the key, and all ready to open the door by her Pacific road to the far West, and thus pour into this Central line all the rich products and mighty trade and travel of that boundless country which reaches to Oregon and California. One arm of this extensive railroad route as it passes east from St. Louis will branch off at Dayton and run through Xenia to Chillicothe, thence to Belpre, Marietta

and Parkersburg, and unite with the Baltimore and Ohio railroad company. Another as before named will branch off at Zanesville and run to Wheeling. These things being true, and who can gainsay them, how important it is that the Dayton and Western railroad should be speedily finished. The city of Dayton, together with all interested in this line of railroad, are deeply engaged for its completion; therefore all are ready to rejoice, because this day the company commence laying down the T rail upon which the cars now ready, will soon be running. The progress and completion of this very important line in that chain of railroads which is, at no very distant day, to bind the Atlantic with the Pacific coast, speaks well for the city of Dayton, and will no doubt have a happy influence for good in her future history and prosperity. Indeed the burnished steam car, as it runs over our western road, would seem to be the crowning jewel in her crown of macadamized and railway improvement.

The President of the Dayton and Western railroad company, in his exhibit of the condition and prospects of his road, gives a picture not over-drawn of the city of Dayton, viz:

DAYTON.

This handsomely laid out city is situated on the south bank of the *Great Miami River* immediately below the juncture of Mad river and Still water with the Miami. The locality of Dayton makes it a prominent point and focus in the great chain of railroads. Its character and importance are already developed, and are not to be made by future improvements. Dayton must be, to the various railways diverging from her, as Lowell and other manufacturing cities, a prominent feeder to each. Her population is about fourteen thousand inhabitants, with a water power, when fully developed equal to 200 run of stone, and in the midst of a country and valley overflowing with every product. The enterprise and intelligence of her citizens is marked—her fine churches, schools, markets, public buildings, and institutions point to the one—the other is illustrated by the development and application of her water power. There are now in successful operation within her limits, six flouring mills, five oil mills, producing 400,000 gallons linseed oil and 3,000 tons oil cake per annum, six saw mills, four cotton and three woolen mills, four paper mills, one flax factory, six large machine shops, five foundries, three breweries, one extensive car factory, one file factory, one burr mill stone factory, one bobbin and turning factory, one lath factory, several carriage factories, with a number and variety of extensive shops in the various branches of mechanical industry, producing for the necessity of a wide extent of country that is attracted to it. There are now finished to Dayton sixteen distinct travelled or macadamised turnpike roads, radiating from 50 to 20 miles in every direction, through a country second to none in this or any other land with a canal passing thro' it north and south from the Ohio at Cincinnati to Toledo on Lake Erie, with numerous streams furnishing water power to every portion of the country, and upon which are erected factories, mills and distilleries, &c. These improvements make Dayton the depot for its commerce. The additional influence which railways will give to this sketch of present prosperity is obvious.

And yet more can be said. Already, and even since this report, is Dayton stretching out still further iron arms that will add much to her commercial importance, and aid in binding more closely portions of our country now widely separated.—Look at the map, and trace the great North Western railway, starting at Milwaukee and Chicago, thence to Peru or Logansport on the Wabash, and from these along the valley of the Mississippiway to the head waters of the Miami at Greenville, and thence to Cincinnati via Dayton, and thence thro' Lexington and Nashville to Charleston, S. C.—This road, when completed, will be another of the

most important and attractive railroad communications in our country, connecting, as it will, the northwest with the southeast. Upon this route, Dayton will be a very important point, because of its position at the junction of the Sandusky, Cleveland, Columbus and Xenia, Cincinnati and Hamilton, and Dayton and Michigan roads.

From the report above alluded to, we learn that this central route approaches nearer to an air line between New York and St. Louis than any other now surveyed or making. Also that the excess of taxable means on this route over that of any other, through Ohio, Indiana and Illinois is equal to fifty millions of dollars.

Another very significant and remarkable fact is, that all the railroads now constructing from the Ohio river, and running north, have their termini in this great central line; and this is true, almost without exception, of all the roads now being constructed from the Northern portions of Ohio, Indiana and Illinois. The mention of the names of the chartered companies thus having their termini in this great thoroughfare will surprise every one. In Ohio, on the south, you have the Marietta and Belpre roads, referred to in this communication, the Cincinnati Hamilton and Dayton, the Little Miami railroad, Cincinnati and Zanesville, and the Hamilton and Eaton roads. On the north, the Steubenville and Newark road, the Springfield and Loudonville road, Cleveland and Columbus, Mad River and Lake Erie, Dayton and Michigan, and the Greenville and Miami roads.

In Indiana you have, entering from the north, the Newcastle and Richmond, the Bellefontaine and Indianapolis, the Peru and Indianapolis, the Lafayette and Indianapolis, and the Lafayette and Crawfordville roads. And from the south, the Evansville and Vincennes, the New Albany and Salem, the Jeffersonville and Columbus, the Madison and Indianapolis, the Edinburg, and Shelbyville and Knightstown roads. The names of the roads in Illinois I have not at hand. But these facts are sufficient to show that two things are certain:

1st. That this is to be the great road of roads running east and west, connecting the Atlantic ocean with the Mississippi river.

2d. That the stock will pay good dividends.

B.

Ohio and Mississippi Railroad.

A telegraphic despatch was received in this city yesterday, from a reliable quarter, which furnishes the agreeable information that Seymour, and his associates of New York, have contracted to build the entire road between Cincinnati and Vincennes, Indiana.

This portion of the road between Cincinnati and St. Louis, is the roughest and most difficult of construction. Now that its completion has been secured, we can see no real obstacle in the way of the early construction of the residue, between the Wabash and the Mississippi—thus giving us a line of railroad reaching from the Mississippi to the Atlantic.

The Ohio and Mississippi road when built, will cross the Central railroad leading from Cairo to Chicago and Galena, the Evansville road from the Ohio to Terre Haute, in the heart of Indiana; the Louisville, Jeffersonville and Indianapolis railroad, and the Madison and Indianapolis railroad. If the proper exertions are made, within three years we shall have a railroad communication to Louisville, Nashville, and thence to Savannah and Charleston—a railroad communication to Memphis—a railroad communication to Cincinnati and thence to Baltimore and Philadelphia, by two different routes—and we shall be connected with New York and Boston by railroads of great speed and excellence.—*St. Louis Republican.*

Direct trade between Europe and the South.

The late commercial convention at Richmond, Va., and a recent call for a planter's convention at Macon, Ga., are indications of a growing feeling which pervades many sections of the south, to enter more largely into commercial and manufacturing pursuits, as a means of advancing their pecuniary interests and maintaining their commercial independence and prosperity. While the foreign trade of this country is increasing so rapidly, the South begins to feel that she has not that share of it which she might secure by entering into vigorous competition with northern enterprise and capital. Within a few years, the total foreign trade of this country has increased fifty per cent. Our imports and exports, which amounted in 1845 and 6 to about one hundred and twenty millions each, have risen to nearly two hundred millions. And this change has been, to some degree, at the expense of our domestic trade. In 1846, the consumption of raw cotton in the United States was 427,567 bales. In the present year, it is ascertained to be about 464,000, and in this year a much larger portion must have been used by Southern factories and consumed at home, than before.

In view of these facts, the South are beginning to inquire why it is that the commercial intercourse between this country and Europe has hitherto been to such a great extent confined to New York and other northern cities. The Savannah Republican answers that question as follows:—

"Providence has conferred with a liberal hand upon the South, all the elements of greatness and independence. Indeed, His munificence seems to be the prime cause of Southern apathy and neglect of our true interests. With a soil rich, varied and productive—with a climate mild and genial, nature spreads out the tables of luxuriance and ease, and invites us to the feast, with scarcely an effort on our part of labor or enterprise. Want has never pressed upon us a feeling of that necessity which would compel us to live by our 'wits.' Enticed by our agricultural pursuits and rural pleasures, and enriched by the productions of our fields, we have entirely neglected commerce and navigation. We have been content to let England and the north do our carrying trade and make our commercial exchanges. They constantly wait at our doors to bear away our productions, and bring back to us the luxuries of foreign climes. The productions of our fields, and the commerce and navigation growing necessarily out of it, feed and clothe the world—supports the merchant princes of Europe, and supplies with wealth, comfort and ease, those of the North to whom nature has been less beneficent than to us. We, from indolence and ease, have given up our commerce and manufactures to others. They, from these means, have enriched themselves at our expense, and from dependents they have become our superiors.

We are not only now dependent upon others for our commerce and manufactures, but from our inertness we are actually dependent, especially upon England, for the very prices which we are to get for our great staple. They dictate to us the terms, not only upon which we shall dispose of our products to them, but what we shall pay for their manufactures. Every season the manufacturers are earnest in their desires, first to ascertain the probable productions of our fields—knowing well what is their capacity for consumption; and as soon as they ascertain the amount of our productions they quietly, but firmly fix the terms upon which we shall sell to them. On their terms usually, we ship them our cotton to manufacture for our use and purchase our necessities upon their terms again. This is the reason why, from affluence and independence, the South has enriched others and reduced herself to a state of dependence. And how can it be otherwise under the existing state of things? We have no shipping—no manufactories to compare with England and the North. We produce our staple depending upon others to manufacture them into suitable fabrics for ourselves and the

world. Until therefore the order of things is reversed—until we build up our own commerce—until we manufacture our own cotton for ourselves and others—till then, we will be dependent upon others and we shall be subject to dictation and impositions, if not oppressions. It is high time that the South should "awake out of sleep"—should improve the natural advantages we enjoy—throw off our commercial dependence—rid our minds of the delusion that we can do nothing but raise cotton, and heartily engage in the business of manufacturing—building our own ships—carrying our own produce and importing our own supplies; and thereby secure and save to ourselves all the wealth and independence which must necessarily grow out of such a course of action."

The *Southern Press* has also a long article upon the same subject, expressing similar opinions, from which we take the following extract:—

"What, then, is the reason that the principal part of all the commodities we obtain from abroad, are received at the single port of New-York—and that so very large a part of our exports are shipped at the same place? One reason is, that it is probably the nearest harbor to Europe that we have which is open at all seasons of the year. Another is, that through New-York the valleys of the St. Lawrence and Mississippi are most accessible to the commodities and emigrants of Europe. These circumstances give to New-York an advantage, as a seaport and commercial town, over any other in the Union. And with this advantage, New-York becomes the mart where there is usually a greater amount of goods to be bought and sold, than any other place on this continent. The simple fact that she has a greater assortment, secures her almost a monopoly. For men will overcome distance and incur expense, to arrive at the greatest variety and abundance of articles to sell, and hence she obtains the greatest number of buyers, as well as sellers. To such a place capital will resort, because there also are the opportunities of investment greater.

These considerations are sufficient to account for the commercial superiority of New-York over not only all Southern, but all other Northern ports. But there is another, which goes to account for the inferior size of Southern cities. In the South there has always been greater agricultural attractions for capital and labor, than in the North. The soil and climate are better generally, and more congenial to slave labor. Hence, in the South, when merchants become rich, they retire to plantations, whilst in the North the reverse occurs—wealthy farmers seek the cities and become traders. Of course, agriculture largely preponderates in one section—in the other, commerce and manufactures ultimately prevail. And because the cities and commerce and manufactures of the South have not become so great as those of the North, superficial observers have inferred that the South is less enterprising and thrifty.

They were holding last week a jubilee in Boston, because Massachusetts had completed about a thousand miles of railroads. Yet Virginia, with less white population than Massachusetts, has already completed a thousand miles of railroads and canals, and is rapidly progressing with six or seven hundred miles more. And in Virginia, the average density of population is about one-tenth only of that of Massachusetts, and an agricultural people like those of Virginia, do not require to travel half as much as a commercial and manufacturing population like Massachusetts.

Virginia, however, has a large surplus production for export to Europe, the West Indies, and South America. And the question is, has the time arrived when the amount of her exports and imports is large enough to make a direct trade profitable—large enough to concentrate the requisite capital for the purpose?

In determining this question, we must consider some important changes on the other side of the Atlantic. The city of Liverpool occupies the same position as to the other cities of Europe in reference to our trade, that New York does as to the other cities of this country. Liverpool is nearest to us, and concentrates not only the articles of British, but continental production we want. But of late years, manufactures have increased rapidly on the continent—in France, Holland and Switzerland.

And the question now is, whether a Southern port, shall send a large part of her exports via New York and Liverpool to Havre, Amsterdam and Antwerp, and receive her returns by the same circuit, or, go and return direct. It must be obvious that the extra expense of two transshipments on such a route is very great, and the loss of time considerable. And to save these, some advantages could be relinquished, of the more comprehensive markets we now deal in. The cities of the continent have plenty of capital, and we scarcely doubt they can furnish it at a much lower rate, than what we now use. Indeed, we can hardly account for the clumsy and costly manner in which the business is now done. A shipper of tobacco or cotton at present, draws a bill on his consignee in Europe on time, and gets it cashed in an American bank, and pays virtually, ten or twelve per cent. interest, the value of money here. Why is there not in Richmond, Charleston and New Orleans, English, French and Dutch capital to advance on shipments at the rate of five per cent. per annum?

But our limits do not now permit us to pursue the subject further. We shall investigate the charges and duties at the various ports. And we hope when the Macon convention meets, a body of facts will be presented, on which material improvements on the present course of trade can be safely made."

The examination and discussion of this subject in its true light, as the Savannah Republican pertinently remarks, will do more in a few years to "maintain the rights and advance the interests and independence of the South, than could be effected in an age, by the useless cry and clamor about Northern aggressions and Federal oppressions."

New York.

Rome and Watertown Railroad.—This road, now nearly completed, is at the present time attracting much attention. Not only is it an important enterprise, as constituting the last link of a complete chain of railroad communication between New York and the outlet of Lake Ontario; but the people of Boston and the State of Massachusetts generally are looking to its completion as opening to them a new and rival route, which we think must divert a great portion of the trade from the Ogdensburg route. This new route will be by the way of the Boston and Worcester and the Western railroads, 200 miles, to Albany; thence on the great central line of railroad from Albany to Buffalo, 107 miles, to the town of Rome, 13 miles west of Utica. At that point the Rome and Watertown railroad commences, and runs through the counties of Oneida, Lewis, and Jefferson, to Cape Vincent at the outlet of the lake. This road is now open to Watertown, a distance of 72 miles, and will probably be completed to Cape Vincent, 25 miles further, sometime in November. The whole distance by this route from Boston to Cape Vincent is 405 miles. Cape Vincent, some 60 miles above Ogdensburg, is a point which all the travel and transportation between Boston and Canada West, and other portions of the great west, must pass. It being at the outlet of Lake Ontario, it must therefore be regarded as a common starting point for Boston.

The Worcester Palladium makes a comparison of these routes, as follows:—

"By the new route, the distance will be 405 miles. By the northern, or Ogdensburg route, the distance from Boston to Cape Vincent is 446 miles by way of Fitchburg, Rutland, and Burlington; and 460 by way of Montpelier and Burlington; so that by the way of Ogdensburg, over the Rutland road, it is 41 miles—and by the way of Ogdensburg over the Vermont Central, it is 55 miles, further from Boston to Cape Vincent, than by the new or southern route over the Rome and Watertown road. We are not aware that the northern route has any advantages over the southern to compensate for this excess of distance—41 miles over

one of the roads to Burlington, and 55 over the other.

The general course of the new route, from the outlet of the lake to Boston, is southeast; while by the northern route, nearly or quite one-third of the distance, the course of the route is north-east; which necessarily increases the distance to Boston. Besides, the northern route runs so far north as necessarily to encounter greater quantities of snow in winter than may be expected on the southern route. At Albany there is a change of cars for both passengers and freight; and although they have constructed a floating bridge over Lake Champlain, on the Ogdensburg road, yet it remains to be seen whether it can be made available for passing trains across the lake at all times and under all circumstances.

But it is not in distance alone that the southern route to the outlet of Lake Ontario has the advantage. Over 300 miles of that route is now occupied by strong roads. The line from Boston to Albany has the capacity and power to do ten times as much business as it now does; and the character of the great central line in New York can be determined from the fact that the ordinary receipts on 104 miles of that line, in the month of June last, exceeded \$98,000. In December next, the new law of New York will go into effect, which will allow the railroads in that state to carry freights without paying tolls to the state for the benefit of the canals. A large increase of the receipts of the railroads may reasonably be anticipated from the operations of that law. A large portion of the northern line is oppressed with debt.

The Rome and Watertown road when completed to Cape Vincent—opposite Kingston, Canada West—will be 97 miles in length; and through so favorable a country that its whole expense, when equipped with engines, and cars, (as we are informed by reliable authority,) will not exceed \$1,500,000; or \$15,000 a mile. Cape Vincent has a fine harbor for the commerce of Lake Ontario, which comes to it through the Welland canal, or from the thriving regions of Canada West, north and west of Ontario. The river is readily crossed by a ferry from Cape Vincent to Kingston: where, in time, railroads will start for the great interior, and form the most direct route from the Atlantic to Lake Superior. Canada West is filling up rapidly with an industrious and enterprising population; and the time is not far distant when the Atlantic states will have to look there for their supplies of lumber, &c.

Sackett's Harbor is probably as good a port as there is at the east end of the lake—and probably as good a harbor as any lake port in the country. A branch road is to be built from Watertown to Sackett's Harbor. So the distance from Boston to that port by way of the Rome and Watertown road and its branch, will be 379 miles. The distance from Cape Vincent to Sackett's Harbor is 40 miles; so that from Boston to Sackett's Harbor by way of Ogdensburg, is 500 miles; or 121 miles farther than by way of Albany, Rome, and Watertown.

At the distance of 31 miles from Rome a branch road is to be constructed, 27 miles in length, to Oswego, which will reduce the distance 16 miles below the present route by way of Syracuse.

In another point of view the Rome and Watertown railroad is to have an important influence upon the Ogdensburg or northern route to Boston. It opens a direct communication from the outlet of Lake Ontario to the city of New York, which not only has a preference to Boston as a market, but an advantage of not less than 90 miles in distance. The relative importance of the cities of New York and Boston, as markets, is seen in the fact that during the last year, of the 2,400,000 tons of freight brought down the canals to Albany, only 60,000 tons, or one fortieth part, came to the Western railroad. Possibly an equal amount might have been transported to Boston by water; which would leave nearly 2,300,000 tons for New York city, the towns upon the Hudson, and a few of the miner seaports, such as Providence, Hartford, &c. It is scarcely possible that New York could have taken less than 2,000,000 as her share of the 2,400,000 tons of freight delivered last year at Albany. And now as New York is soon to come into direct competition for the trade that flows down to the outlet of Lake Ontario, it will not do for Boston to in-

dulge very high anticipations of any great accessions of trade through the Ogdensburg route. And until the result of these new routes is known, it seems to us an improvidence, bordering upon folly, to engage in any new experiments for western trade, like that of the *Hoosac Tunnel*; which, whatever its fortune, must be an oppressive tax upon the industry and capital of the country."

From the London Athenæum, April 8, 1851.

On the Nominal Horse Power of Steam Engines.

By L. G. HEATH, R. N.

The inadequacy of the present term "nominal horse power" for giving a definite idea of either the absolute or relative power of engines was first examined, by comparing the engines of H. M. steamships *Garland* and *Basilisk*, which were both constructed on the same principle, with oscillating cylinders, and were both used to drive paddle wheels. This comparison was made under three distinct heads,—the mean effective pressure, the number of revolutions per minute, and the size of the cylinders. It was urged that Watt's constant of seven pounds per square inch, for the mean effective pressure, was not only in itself inapplicable, but that no constant quantity could be universally applicable. Also, that the method of determining the number of revolutions per minute, from a conventional speed, founded on the length of stroke of the piston, was equally fallacious. It was therefore proposed, that the term "nominal horse power," should be abolished; and that engines should in future be designated by the cubic contents of their steam cylinders, jointly with their nominal consumption of a standard description of fuel during a given period of one hour. A table might be drawn up giving this nominal consumption in terms of the grate and the heating surface, and should be accompanied by rules and directions for ensuring the uniform measurement of the grate and the heating surface. This system, it was contended, would be more in accordance with the present practice of construction, and would enable the relative size and power of engines to be more accurately estimated than by the present method.—*Proc. Inst. Civ. Eng., April 8, 1851.*

It was admitted that it would be very desirable to fix the nomenclature of the power of engines, for though it was well known that James Watt did really take as his standard, what he found to be actually performed by a powerful horse drawing a weight over a pulley,—viz: the equivalent of 33,000 lbs. raised one foot high in a minute—yet commercially it had gradually become a custom among the manufacturers to give a surplus of power, ostensibly as an allowance for the friction and deficiencies of the machine, so that now, the mere statement of the nominal horse power had no definite meaning. It was, however, contended that the standard of 33,000 lbs. should be retained; and that, supposing the workmanship to be equally good in two engines, it was only necessary to compare the areas of the cylinders, the effective pressure of steam on the piston, and the speed of the piston, to determine their relative power. This was in fact, shown by the indicator, an instrument the value of which was now universally admitted, and which, when skilfully used, did really give a true representation of the power of the engine. It was the universal custom of Boulton and Watt to calculate the power exerted by an engine by the speed of the piston, together with the average pressure of the steam as shown by the indicator; and although much vagueness and uncertainty had latterly been introduced into the subject, this was rather to be attributed to the assumption of arbitrary quantities to represent those results, than to any defect in Watt's standard horse-power, which definitely expressed both the measure of power and the space through which it acted. The proposed standard of comparison of the quantity of water evaporated in a given time, by a given amount of fuel, or the combustion of a given quantity of fuel in a given time, were shown to be of no value; as then not only the generation of the steam, but the administration of it, must be considered, and these were points merely tending to complicate the question. For pumping engines in Cornwall the term horse-power was almost unknown, engines being sold to raise a given quantity of water,

which was a standard easily reducible to that of other districts, where 33,000 lbs. was assumed to be the actual power of a horse.—*Proc. Inst. Civ. Eng., April 15, 1851.*

Pennsylvania.

Sunbury and Erie Railroad.—A convention of the friends of the proposed Sunbury and Erie Railroad was held in Philadelphia on the 25th ult.—John B. Myers was appointed to preside, and a large number of Vice Presidents and Secretaries were also appointed. The Bulletin says—

Hugh Bellas, Esq., having been called on, made a brief and able speech in favor of the Sunbury and Erie Railroad. Mr. Edward R. Biddle also made an able speech, opening the importance of the lake trade, and after referring to the enterprise of Boston in securing this trade, showed conclusively the advantages that Philadelphia would have by the completion of the Sunbury and Erie Railroad—having the shortest route to the Lakes and the best harbor on the Lake Erie. A letter was read from Edward Miller, Esq., Engineer of the Western Division of the Pennsylvania Railroad, accompanying two reports made by him on the Sunbury and Erie Surveys, with a map of the region traversed. He speaks of the entire feasibility of the project, and of the great superiority of the route over all others. The progress made in engineering science since the reports were made gives reason to believe that the route may be still further improved. Mr. Miller regretted that his engagements would prevent his attendance at the Convention. A speech was made also by Hon. Thomas Struthers, of Warren, who, among other interesting facts, stated that the people along the line of the proposed road having been consulted, it was believed that they would subscribe \$1,200,000 to its stock. Mr. Chas. E. Penrose also addressed the meeting in a very interesting speech. The Convention then adjourned till the afternoon.

At the evening session, Judge Woodward, chairman of the committee on resolutions, offered the following, which were unanimously adopted:

1. Resolved, That Pennsylvania, endowed, as she is, with varied and unbanded mineral resources, ranking as she now does, with the first agricultural States of the Union, and possessing, in Pittsburgh, the key to the trade of the Valley of the Mississippi, in Erie, the best and safest harbor on the Lakes, and in Philadelphia, the second commercial and first manufacturing city of the country, is destined now to a position in the front rank of commercial communities.

2. Resolved, That the present wants of the State demand the immediate connection of Philadelphia and Erie by a continuous railroad, which will penetrate the now neglected wilderness, but rich, arable and mineral regions of the State.

3. Resolved, That subscriptions, to the amount of one million of dollars, to the stock of the Sunbury and Erie Railroad having already been pledged by the people of the counties through which the road will pass, it is hoped that the citizens of Philadelphia will make such addition thereto as will secure the immediate commencement and early completion of the work.

4. Resolved, That the extensive system of railroads constructed, or about being completed, by the States of Ohio, Michigan, Indiana and Illinois, on which a sum of over forty millions is being expended, verging towards the unrivalled harbor of Erie, demands that this State should be prepared at the very earliest practicable moment to open for public use this, the shortest and most direct avenue through the heart of Pennsylvania, from that port to the city of Philadelphia.

5. Resolved, That we believe that the prosperity of the agricultural, manufacturing, mining and commercial interests of the State will be immensely promoted by the early completion of the Sunbury and Erie Railroad, the most direct route from the lakes to the seaboard cities—and that we therefore urge our citizens to subscribe promptly and liberally to the Sunbury and Erie Railroad stock.

6. Resolved, That the commerce and rapidly growing business of the several lines of Railroad and Canal, by which New York and Boston are connected with the Lakes, is a sufficient guarantee of the profitability of this road as an investment.

7. Resolved, That no public work could now be projected that would increase so vastly the value of the taxable property of our citizens, and the revenues of the State as the Sunbury and Erie Railroad.

8. Resolved, That a committee of — be appointed by the Chairman of the Convention to prepare and publish an Address to the public, in aid of the enterprise in which we are engaged.

Judge W. supported the resolutions in an able speech. He was followed by Judge Kelly, who eloquently advocated the policy of building the road at once. In the course of his remarks he recited the following interesting facts, to wit:—That the city and county of Erie has engaged to subscribe \$500,000, Warren county \$500,000, Lycoming \$300,000, Elk \$100,000. After speeches from several other gentlemen the Convention adjourned.

York and Cumberland Railroad.—At the election held in York on the 23d ult. the following persons were chosen President and Directors of the above company for the ensuing year:

President—Eli Lewis, Esq.

Directors—John P. Kennedy, Adam Deninead, Patrick H. Sullivan, Samuel Small, Jacob Kirk, Jr., and John Hough, Esq's.

It will be observed by the foregoing that the old Board have been re-elected, with the exception of George M. Gill and William B. Duval Esq's, who declined re-election.

New Machine for Blooming Iron.

The purpose of this machine, which has been invented and patented by Mr. J. Brown, is to perform the process of blooming the iron from the puddling furnace, which is usually done by hammering, and in some instance, by squeezing; the object being to squeeze out the cinder from the puddled ball, and to compress the iron into a form ready for rolling into a bar, which is done at the same heat. The machine consists of three large eccentric rolls, placed horizontally in strong holsters, the centres of the rolls being arranged in a triangular position, and the bottom roll nearly central between the top rolls. These all rotate in the same direction, and are driven by a centre pinion working into three pinions of equal size, fixed in the roll spindles. In the present machine the driving power is applied direct to the bottom roll, by means of a large wheel, for the convenience of carrying the main shaft under the floor, but it could be applied to the centre pinions, if preferred. The rolls are cast solid with their journals like ordinary rolls and are driven in the usual manner by coupling boxes and spindles. The roll faces are sixteen inches long, and the bottom roll has strong flanges at each end, eight inches deep, between which the two upper rolls work.

The object of these flanges is to upset or compress the ends of the bloom as the iron in the operation becomes elongated, and the ends are forced against the flanges, which makes them square and sound. The top roll has a large hollow, in which the puddled ball is placed by the puddler, and this roll carries it around and drops it into the space between the three rolls, this space being at the moment at its largest capacity. The three projecting points of the rolls, immediately impinge upon the ball and compress it forcibly on three sides, and giving a rotating motion to the ball, at the same time they have a powerful kneading action upon the iron, squeezing out the cinder very effectually, which flows freely away down each side of the bottom roll. The space between the rolls gradually contracts from the eccentric or spiral form of the rolls, thereby maintaining an increasing compression upon the iron on all sides and on the ends, until it is liberated by the points simultaneously passing the bloom, which falls down and is discharged by the machine at the same moment that another ball is dropped in at the top of the machine. The projecting teeth on the surface of the rolls assist this action, by seizing hold of the iron, and kneading into it as it rotates, and these teeth gradually diminish in projection, the last portion of each roll being plain, and the bloom is consequently turned out in a smooth compact form. The space between the flanges of the bottom roll is widened for a short distance beyond the point, for the purpose of allow-

ing the bloom to drop out readily and admitting the fresh ball. The time occupied in producing the bloom is 12 seconds; by the ordinary plan it is from 30 to 80 seconds.

Considerable difference of opinion was expressed as to the relative value of iron bloomed by the machine and the hammer, some of the members contending that the machine lapped the cinder up, while Mr. Cowper and others, who had seen the machine at work, held the contrary was the case. Mr. Slate said that there could be no doubt that the machine was far superior to the ordinary squeezers. Mr. Eaton Hodgkinson said that he had entered the room with strong prejudices against the machine, but he was bound to say that the samples of iron produced had removed them in some degree. Still he doubted if the iron produced was superior to that made by the hammer. The Chair remarked that it was desirable that the relative qualities of the iron, and the cost of the different processes, should be accurately ascertained, and he suggested that Mr. Beasley should make further experiments and report to a subsequent meeting.—*Birmingham Journal*.

Mad River and Lake Erie Railroad.

In company with some very agreeable and pleasant friends, we took a hasty trip up this "father of western railways," on Saturday last to Sandusky city and were "quite surprised" to find the improvements upon it moving onward at so rapid and steady a rate. Companies of workmen are advancing with the work, at five different points, and have the T rail laid for sundry miles at each of the points upon the line. This makes an agreeable variety in the ride. From Urbana northward there are some six miles permanently laid with this rail; a considerable distance, also, between Huntsville and Kenton; some between Kenton and Carey; nearly the whole distance between Carey and Tiffin, and from Sandusky city southward, for a long stretch, the work is progressing. The rail being laid is of the best quality, and is coming on as fast as it can be clinched down. There has been so little said of late about this work, that we had no idea there was so much accomplished.

There is one fact about this improvement which will render this road more agreeable for travel than, perhaps, all others, when finished: and that is this: the grading for the present structure is nearly all done by reducing the old bed of the road. This will give to the track a permanency it could not otherwise have, as the earth deposited in "fills" many years ago to make the levels, has undergone a settlement of so firm a character, that it will be next to impossible for the railing to become uneven.—This signal advantage this road will have over roads made of new earth, which are consequently, subject to more or less early unevenness. When the surface of the track upon a newly graded road becomes once distorted from its given exactness, it is so difficult of repair, that the warping it is driven into, is, for the most part, ever after maintained.

From the specimens of reconstruction we witnessed upon this road, we are borne out in the opinion that this line, when completed, will not be surpassed, if equalled, by any road for solidity and smoothness—the absence of jarring and jousting, as the train pass over it.

William Durbin, jr., of Sandusky city, has charge of the northern division, and Mr. Brown, of this city, of the southern division of the road. They are both highly accomplished engineers, and are driving energetic men.

In a conversation with E. F. Osborne, Esq., the excellent Superintendent, we learned that by the first day of October next there will be such distance of T rail laid on this road, as will, with the line from Cincinnati to Dayton, measure half the distance from Cincinnati to Sandusky city, with good T railroad; and from that time forward the distances of flat rail will be continually diminishing, as the work of reconstruction progresses; so that not many months hence, the whole length of the road will be fraught with this improved material. The whole distance from Cincinnati to Sandusky is two hundred and fourteen miles. Of this distance the Mad river road will have, at that time (Oct. 1st,) some over fifty miles linked with this

rail, while the road from Cincinnati, through Hamilton to Dayton, will have the distance of fifty-six miles, of all T rail; making one hundred and seven miles T rail travel upon this route. We pen these plain matters of fact that our readers may know what is in progress.—*Springfield Gazette*.

Governor Hunt's Letter.

The advantage of sending our products by the Northern instead of the New Orleans route.

The Louisville Courier of the 16th ult. says:—

After writing the article that appeared in yesterday's Courier, inviting the attention of our business men to the propriety of taking some formal and energetic action in demonstrating to the planting interest of this whole section of country, how much more it is to their advantage to form business connections with Louisville and from thence send their tobacco, cotton, hemp, &c. by the Northern or Lake route, we received the following letter from Gov. Hunt, of New York, and which, by his kind permission, we are permitted to lay before the public. It is in the same liberal spirit which the Governor manifested in the personal interviews we had with him, and echoes but the feelings of all persons, whether official or private, who in any way were interested in any of the artificial channels of communication through the great State of New York, by which the Atlantic seaboard is reached with the products from the West and South-west. It may be proper to say here, that we addressed a note to Gov. Hunt asking, if not inconsistent with his views of propriety, that he would make a reply that might be used for the information of the commercial and agricultural interests in this section of the Union. It was to that note he made the following answer:

ALBANY, N. Y. Sept. 6, 1851.

Dear Sir:—Your letter of the 29th ult. came here during my absence in the Northern counties.

Your views in regard to the commercial relation between New York and Kentucky, and the mutual advantages to result from a more direct trade through the Western lakes and the canals of this State are eminently wise and sagacious. Our interests are reciprocal, and I consider it of the utmost importance that perfect concert and co-operation should be established between us.

We desire to present the strongest inducements to the people of the South-west to adopt the shortest and cheapest line of communication with the Atlantic markets. We are prepared to make it decidedly advantageous for you to send your surplus cotton, tobacco, hemp and provisions to the seaboard through our canals. There can be no cause for doubting that our Canal Board will adopt a liberal and enlightened policy on this subject, making such discriminations as will prove satisfactory to your merchants and producers. Our interests in this regard are in harmony with the sentiments of our people. We desire to create "a more perfect union," and strengthen the political ties which connect us with our brethren in the valley of the Ohio and Mississippi, by cultivating a more intimate commercial intercourse, on the grounds of just reciprocity.

I remain, with great regard, yours truly,
WASHINGTON HUNT.

This letter furnishes a basis upon which not only our own merchants, but those of our neighboring city, Cincinnati, can at once enter upon this great project of laying the foundation of trebling the carrying trade by way of the North. Whatever benefits we derive by opening this new and prolific trade, Ohio must share equally with us, as her public works form one of the links in this great chain of inland communication with the seaboard. May we not, therefore, look for as favorable action from the canal board of Ohio, and of the railroad companies from Cincinnati to Cleveland, as Gov. Hunt assures us will be made on the part of the Empire State? The same action is necessary on the part of Ohio, as is promised by the State of New York, to secure complete success, for it would be unreasonable to expect tolls and transportation to be reduced in New York and by the Lake lines of steamers, unless corresponding reductions are made by the remaining links making up the line of communication commencing with the steamers between this city and Cincinnati. It was with

the view of accomplishing this, and from a thorough conviction that it can be done, that suggested the proposition we made yesterday, of some formal and authorized action on the part of our most substantial and deeply interested commercial men. The labor will have to be performed by some two or three persons, in the nature of a committee, but the existence of that committee, to have the desired effect, must receive the sanction and countenance, as well as emanate from the only proper source, our commercial community. Will that action be taken? Shall such committee or other authorized medium of communication be created? Shall the commercial importance of Louisville, through this simple project, be placed upon a basis that will in a few years leave her without a rival on either bank of the Ohio? These are inquiries which can alone be answered by those more directly interested in the subject than ourselves—the merchants of this city.

Rome and Watertown Railroad Jubilee.

The completion of this road to Watertown was celebrated in that village on the 24th ult. A large number of invited guests, from different parts of the State, assembled at that place, and a procession was formed, in which a number of military and fire companies, as well as citizens and strangers joined. The procession moved through the principal streets, and halted in the public square, where the assembled multitude were addressed by Hon. J. Clarke, who gave a succinct and interesting history of the rise and progress of the enterprise. The road was chartered in 1832. Nothing, however, was then done, and the charter was twice renewed—in 1836 and in 1845. It was not until 1848 that any thing efficient was done. During that year Hon. O. HUNGERFORD and Major KIRBY (both recently deceased) took hold of the work and after great labor, they succeeded in securing the necessary subscriptions—rather, it was supposed, as gifts than as profitable investments. But he would not admit that the road would not pay handsomely. It cost but \$15,000 a mile—the cheapest road in the Union; and yet it is a thoroughly built and substantial road. Mr. C. dwelt at length upon the advantages of the work, and the vast trade which it would attract from Canada and elsewhere.

In the afternoon there was a grand dinner with toasts and speeches. The President of the village presided, and the following regular toasts were drunk:—

1. The opening of the Watertown and Rome Railroad. A day most auspicious to the prosperity of our County and Town. Long it be remembered as the commencement of a new era of enterprise, wealth, and prosperity.
2. Our Canadian neighbors, soon to be annexed by ties of oak and bands of iron, too strong, we trust, to be ever sundered. May our relations ever continue mutually agreeable and profitable.
3. The citizens of the village of Rome. Our efficient and zealous co-laborers in the important enterprise we celebrate. These strong bands of iron are an expressive type of the tenacity and durability of the friendship and good feeling of Watertown towards them.
4. The city of Utica. Her enterprise and energy command our admiration. She is too generous to be jealous if we shall seek to emulate her in these attributes of her prosperity.
5. The city of Albany, the honored Capital of the Empire State. Her generous and liberal citizens bestow with a bounteous hand their wealth to promote every important public enterprise. She cannot fail to find her account in the construction of the Rome and Watertown railroad.

The toasts were responded to in short and pertinent addresses from several of the distinguished guests; and a number of volunteer toasts were also drunk. In the evening there was a festival and ball, graced by the presence of about 300 ladies.

The occasion is described as one of unalloyed pleasure.

We congratulate the enterprising citizens of Jefferson county on the successful completion of this important work to this point, and we trust that the communication with the Lakes and Canada may be speedily consummated by the completion of the route to Cape Vincent.

New Jersey Iron Manufactory.

This State, in common with the others extensively engaged in this business, has been laboring under almost insupportable burthens, arising from a want of an adequate tariff of protection to this important branch of American industry. In the county of Morris, and small portions of Passaic and Sussex, immediately adjoining, there are estimated to be 83 forges, capable in the aggregate of producing annually 12,500 tons of refined iron, besides large quantities of pig iron, the latter of which is sent into other States to be wrought into various articles in daily use.

These forges alone, to say nothing of the miners and other employees, if they were at full work, would occupy constantly, 1500 men, and if the forges were adequately compensated, the amount received by them in this comparatively small iron region, would reach the sum of about \$1,000,000. At this time it is computed that only about one-fourth the above number of forges are in blast, and the proprietors of these are working them from \$10 to \$15 less than would be a fair remuneration for the labor employed, without including the necessary outlay of capital. Those who do continue the business, do so, because they have farms connected with their forges, and by continuing to make iron they find a home market for their agricultural products; others, perhaps, are induced to continue in consequence of being able to make some peculiar kind of iron for which they find a market, though it may be at a very reduced price.

In the county of Morris there are also five extensive rolling mills, which have all been obliged to change their occupations—some to nails, spikes and rivets, in consequence of inadequate protection to merchant iron. And added to these are manufactories of bar steel, which have been obliged to discontinue altogether. To show the immense foreign competition in this business, there were imported the first six months of 1851, 167,309 tons; excess this year, 12,604 tons. Of the amount imported in the last half year 40,003 tons were railroad iron, 26,701 tons bar, 25,346 do. pig, 5,229 do. English sheet and boiler, 5,098 do. Swedes and Russia, 5,094 do. hoops and rods.

The hopes of the iron men are now dependent on a reduction of wages to the standard of competing countries, which the workmen must submit to; or, by forcing upon Congress the imperious necessity of a reform in the tariff upon this article, until they shall submit to a just revision.—*Newark, N. J., Adv.*

Matine.

Androscoggin and Kennebec Railroad.—It gives us pleasure to announce that the contract with the Atlantic and St. Lawrence railroad to do the connecting business was yesterday concluded by our Directors, on the terms proposed by the Committee of the Stockholders, and reported by that Committee at the last annual meeting.—*Waterville Mail, 18th ult.*

The basis of this arrangement is upon the pro-rata principle, the Atlantic and St. Lawrence receiving one-third of the gross receipts, and the Androscoggin and Kennebec two-thirds, being in proportion to the distance run over the respective Roads. A further allowance is made to the Androscoggin and Kennebec for the use of cars, of one-half a cent per mile for each passenger and every ton of freight, provided the proportion belonging to the Atlantic and St. Lawrence shall amount to \$40,000 per annum. In other words, the arrangement amounts to a virtual guarantee on the part of the Androscoggin and Kennebec Railroad, that a third of the connecting business shall amount to \$40,000, and in the event it does, or exceeds that figure, then the division shall be made upon the above basis.

Edwin Noyes, Esq., has been appointed Super-

intendent of the Androscoggin and Kennebec Railroad, in place of Gen. Simonds, resigned. Gen. S. has gone, or is about to go to California. Mr. Bodge left New York for that region on Saturday last.—*Leveiston Journal.*

Mexico.

The Tehuantepec Affair.—By the Robert Spedden we have late dates from Mexico—from Vera Cruz to the 22d, and from the city of Mexico to the 19th ult. The most important item of news we find in our files, is the general terror which pervades the country, on account of the apprehended blockade by the English fleet, for the nonpayment of the bonds held by English subjects.

In reference to the Tehuantepec affair, we learn that the Mexicans are coming to their senses, and begin to view in a proper light, the consequences of their violence and breach of faith in the seizure of the property of the Company. The barges which were sent down to Minatitlan having been seized by the Mexican commandant, Captains Thompson and Whitney proceeded to Vera Cruz, where they were met by the Governor of that Department, with the request to return, as orders would be given for the release of these vessels. Our consular agent replied that such order could be sent to the agent of the Company, Mr. Sidle, who would receive back the barges. On this subject we shall have something further to say in to-morrow's edition.—*N. O. Delta.*

Philadelphia and the West.

A late number of the Philadelphia North American contains an article on the subject of the progress of the railroad communications between Philadelphia and the west, in which the speedy completion of the Pennsylvania railroad is strongly urged, in order to establish this communication before the current of trade shall become permanently turned in another direction. The writer remarks that a railroad to be efficient, must be continuous; it must not be patched out with canal-packets. The traveller measures his journey by time, not by miles; and in order to command most of the travel, the route through Pennsylvania must not only be the shortest, but the quickest. The article concludes as follows:

"How then can we connect with the railroad system of Ohio in the shortest time, and at the smallest cost? The answer is, by the Ohio and Pennsylvania Railroad, which was chartered by both the States for this express purpose. From Pittsburgh to New Brighton, twenty-eight miles, the road was opened in July, and has been in successful use ever since, averaging about three hundred and sixty passengers per day. From Pittsburgh to Beaver, twenty-five miles, it was opened for public use in fifteen months from the time when the first contracts were let. It does not cross the Ohio river; it is a first class railroad, easily kept in good order; and it is now run at the rate of twenty-five miles an hour. At Alliance, fifty-three miles from New Brighton, the road will connect with another, now in use, to Cleveland, making the whole distance from Pittsburgh to Cleveland one hundred and thirty-eight miles, which will be run in less than six hours. It is the determination of the officers of the Ohio and Pennsylvania Railroad that this shall be done in December of the present year; thus bringing Cincinnati and Pittsburgh within nineteen hours of each other. A large body of experienced track layers are now at work, laying the track on the fifty-three miles, which is the link in the long chain of 394 miles of first-class railroads, connecting the four cities of Pittsburgh, Cleveland, Columbus and Cincinnati. From Cleveland by Pittsburgh to Philadelphia, the distance is one hundred and twenty miles less than from the same point by Dunkirk to New York.

In about ninety days, the work is to be done; and then, the lake being closed, the city of Philadelphia and the Pennsylvania Railroad Company will behold a rush of western travel, which will teach many people a lesson in geography that they have been slow to learn. They will see that it is by tapping the Ohio railroads that we are to get the western travel; and not by stopping our efforts

within our own State, whether the terminus we fix on be either Pittsburgh or Erie."

American Railroad Journal.

Saturday, October 4, 1851.

Mr. Poor is still prevented by illness from attending to his accustomed duties.

St. Andrews and Quebec Railroad.

We learn from JOHN WILSON, Esq., President of the St. Andrews and Quebec Railroad Company, that the entire line of that road, from St. Andrews to Woodstock, 80 miles, is under contract; on such terms as will secure its completion. The first 10 miles is nearly finished, and will be ready for running this fall. The balance of the road, 70 miles, has been let to Shaw and Co., a party of English contractors, at very favorable prices. There is a new race of contractors coming into the field as competitors with Yankee enterprise. There are sets of rich capitalists now associated together in England, who are turning their attention to this continent, as a better field for enterprise than that of Europe, now that the English Railroads are built. We shall be glad to see men of this stamp engaged on more of our own roads.

Canada.

Great Western Railroad.—The numerous friends of Roswell G. Benedict, Esq., will be glad to learn that he has received the appointment of chief engineer of this great work. Mr. B. has the capacity and energy necessary for the important position to which he has been called. The contract has been made for all the rails required, with a house in Wales. A portion of them will be out this fall.

St. Lawrence and Atlantic Railroad.—The Sherbrooke Gazette states that the railroad from Montreal will be opened to Richmond, near there, in the early part of this month, when a public demonstration is to be made, at which his excellency the governor general has signified his intention of being present and uniting in the celebration of an event the most important to that section of the province of any which has ever occurred. As soon as the cars commence running to Shipton, passengers may leave Sherbrooke in the morning, take the cars, reach Montreal about noon, transact business, and return to Sherbrooke early next morning; or by extending the time to 48 hours, may go to New York or Boston and return. The Gazette thinks that his excellency should be invited to extend his visit to Sherbrooke, and were he to proceed still farther south, through Stanstead county, and take a trip through Lake Magog, he would be enchanted with that portion of her majesty's dominions, and would carry away a high opinion of the character of the eastern townships of Canada.

Georgia.

The Milledgeville Railroad.—The Southern Recorder of the 18th ult. says:—"We are happy to be authorized to say, that the Cars on this road, from Milledgeville to Gordon will be running by the 25th of October, in time to carry to Macon all who may desire to attend the Agricultural Fair, from this and the surrounding country."

New-York.

Hudson River Railroad.—This road is at length completed. Grand trains have passed over the entire road this week, and the regular passenger trains will probably commence their trips on Monday next. A grand jubilee may be expected soon.

Railroad Iron.

THE undersigned are prepared to enter into contracts now at specific prices, to deliver Railroad Iron during the coming Winter and Spring, free on board at the shipping ports in Wales, or at ports in the United States.

CHOUTEAU, MERLE & SANFORD,
Sept. 30, 1851. No. 51 New st.

Railroad Iron.

THE undersigned offer for sale 1000 tons Railroad Iron, now ready for delivery from ship "Niobe."

CHOUTEAU, MERLE & SANFORD,
Oct. 1, 1851. 51 New st.

Saunders, Samuel,

Civil Engineer, Architect and Surveyor,
Charleston, Kanawha county, Va.

Maryland.

Lonaconing Railroad.—We learn from the Miner's Journal that the work on this road has been commenced by W. H. Smith, Esq., Engineer and Superintendent of the George's Creek Coal and Iron Co., and will be prosecuted with energy to its completion. Mr. S. has commenced operations at Piedmont, and has about 40 hands at work building two bridges, one over the Potomac. In a few days he will increase his force to over 100 hands.

North Carolina.

Raleigh and Gaston Railroad.—The following are the officers of this Co. for the ensuing year:—
Geo. W. Mordecai, of Raleigh, President,
W. W. Vass, " " Treasurer.
H. D. Bird, of Petersburg, Engineer and General Superintendent.

The President declines receiving compensation for his services; the Treasurer's salary is \$1,000 per annum, and the Engineer's is fixed at \$2,000. Mr. Bird, the Engineer, is also the President of the Petersburg Road.

Indiana.

The "Indianapolis Locomotive" says that permission has been granted the Madison company to run on the Terre Haute road, after they get it completed as far west as Plainfield, fifteen miles from that city. The Madison company will get all the proceeds, but will be controlled by the Terre Haute company, who will devote all their time and attention to completing the road through. This arrangement only lasts until the road is completed, when the Terre Haute company will put on their own cars and engines, which are now contracted for, and many of them ready for use.

Peru and Indianapolis Railroad.—The following were elected directors of the above road for the ensuing year, at the late meeting of stockholders in Noblesville:—James M. Defrees, W. J. Holman, George L. Dart, C. D. Murray, P. Hersleb, John Green, S. Dale, W. W. Conner, D. R. Brown and John Burk.

The same officers were continued, viz:

John Burk, president; J. J. Cox, secretary; W. W. Wright, treasurer; W. J. Holman, engineer.

Ohio.

Central Railroad.—The Zanesville Courier says that the following gentlemen have been appointed a committee to make the arrangements necessary for the railroad barbecue, to be held on the line of the Central Ohio railroad, on the 11th instant:—Col. James Raguett, John M. James, Col. John A. Blair, Wm. Ruth, Jacob Glessner, E. T. Cox, H. Baird, Jacob Oshe, George A. Jones, James Darlington, Mark Loudon and Joseph Galigher.

Messrs. W. Dennison, Jr., of Columbus, Ex-Governor Shannon, Hon. W. Medill and Hon. F.

Corwin, President of the Cincinnati, Wilmington and Zanesville railroad company, have been invited, and are expected to be present to address the assemblage.

Stock and Money Market.

The Money market shows a feeling of gradual amelioration. The influence of the uncurrent money panic has passed away and stocks have resumed their previously improving tendency. No Gold is going this week to Europe, and the declining rates of Sterling Exchange indicate the probability that little or none will go next week. Sterling is offering at 9½ and 10¼ per cent. for the best bills, and the supply is likely to be increased largely from the South before the next steamer sails. The Brokers have generally returned to the discount of our State money; for the present, all uncurrent money is bought ½ and 1 per cent. higher than usual quotations. In bonds of new works there is still little or nothing doing.

The exports for September, 1851, are as follows:

Domestic Merchandise.....	\$2,593,986
Foreign Merchandise, (free).....	134,271
Foreign Merchandise, (dutiable).....	316,047
Specie	3,490,142

The Receipts of the Erie Railroad for the month of September, 1851, were as follows:

From Passengers and Mail.....	\$192,255 60
From Freight.....	114,633 36

Total.....	\$306,888 96
Same month in 1850.....	150,017 57

Increase.....\$156,871 39

The following is a statement of the export of breadstuffs to Great Britain and Ireland, in the month of September:

	1851.	1850.
Flour, bbls.....	111,242	144,521
Meal,	1,180	nil.
Wheat, bush.....	178,682	50,681
Corn,	36,027	41,239

Below we give the operations of the United States Mint at Philadelphia for the month of September:

	Gold.	Pieces.	Amount.
Double Eagles.....	162,922		\$3,258,440 00
Eagles.....	13,844		138,440 00
Half Eagles.....	31,755		158,875 00
Quarter Eagles.....	80,944		202,360 00
Gold Dollars.....	329,308		329,308 00

Total.....618,793 \$4,078,423 00

	Silver.	Pieces.	Amount.
Half Dollars.....	11,400		7,200 00
Quarter Dollars.....	62,000		15,500 00
Dimes.....	31,000		5,000 00
Three Cent Pieces.....	615,300		18,459 00

Total.....1,441,493 \$4,136,682 00

	Copper.	Pieces.	Amount.
Cents.....	535,271		5,352 71

Total.....1,976,764 \$4,142,034 71

Gold bullion deposited for coinage from 1st to 30th September, 1851, inclusive:

From California.....	\$3,960,500
Other sources.....	75,000

Total.....\$4,035,400

Silver bullion deposited in same time.. \$8,700

Vermont and Massachusetts Railroad.—Comparative receipts for eight months in three years:—

	1849	1850	1851
January.....	8,031 80	10,474 50	13,839 89
February.....	8,679 14	11,281 49	12,680 80
March.....	11,047 20	11,959 97	15,096 88
April.....	13,368 40	14,593 66	17,996 72
May.....	12,518 37	14,142 38	17,348 35
June.....	11,792 51	13,599 75	14,948 44
July.....	11,996 36	16,106 27	18,645 30
August.....	14,767 61	19,118 56	

Morris Canal.—The gross receipts for the week ending Sept. 20, were.....\$5,240 13
Allowance for drawbacks..... 613 63

Corresponding week last year..... 1,266 54
Increase.....\$3,359 96

The *Oswego Times* furnishes the following comparative statement of the shipments by Canal during the 3d week in September, for two seasons:

	1850.	1851.
Flour.....bbls--	23,374	20,662
Wheat.....bush--	45,423	54,912
Corn.....	888	27,757
Lumber.....ft--	3,049,424	3,468,710

Vermont Central Railroad.—The earnings of this Railroad for August, 1851, have been..\$55,682 00
For August, 1851, 22 days
freshet.....\$24,749 96
Add same proportion for 5 day 5,625 00

Would have been.....\$30,374 96

Increase over last year.....\$25,307 13
Or 83 per cent. As compared with July, 1851, the increase is \$4,469 63.

On the last quarterly return day of the City Banks, the amount of specie held jointly by them was counted, and ascertained to be as follows:

	In Banks.	In Sub-Treasury.	Total.
Sept. 25.....	5,865,000	4,067,000	9,932,000
Sept. 8.....	7,113,000	3,430,000	10,543,000
Aug. 25.....	6,904,505	3,400,000	10,304,505
July 23.....	7,843,957	2,051,000	9,894,957
July 1.....	8,523,574	2,294,877	10,808,451
June 16.....	8,733,000	2,652,000	11,385,000
June 2.....	9,731,000	2,307,000	12,038,000
May 13.....	7,967,000	4,400,000	12,367,000
April 10.....	7,218,000	4,287,000	11,505,000
March 3.....	8,053,000	3,803,000	11,856,000

The *National Intelligencer* says:—"The uncoined bullion on hand at the Mint, on the 20th ult., was: Belonging to the bullion fund assayed 5,236,623 43
Unassayed..... 51,600 00

5,288,223 43

All deposits of gold previous to the 20th September had been paid to the depositors, and all mint certificates are redeemed on presentation immediately after being issued."

The *Evening Journal* gives the annexed statement of the quantity of flour, wheat, corn and barley, left at tide water during the 4th week in September in the years 1850 and 1851, as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1850.....	159,547	169,593	114,560	152,643
1851.....	105,663	156,993	236,785	91,304

Dec.....53,884 12,600 Inc. 122,225 de.61,239

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 30th Sept., inclusive, during the years 1850 and 1851, is as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1850.....	1,651,045	1,232,663	2,857,152	613,230
1851.....	1,198,385	1,796,524	6,186,371	373,483

Inc..... 547,330 563,861 3,329,219 dec.239,747

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 30th Sept., inclusive, during the years 1849 and 1851, is as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1849.....	1,729,161	1,192,666	4,151,523	193,871
1851.....	2,198,385	1,796,524	6,186,371	373,483

Increase. 469,224 603,858 2,034,848 179,612

By reducing the wheat to flour, the quantity of the latter left at tide water this year, compared with the corresponding period of last year, shows an increase of 660,112 bbls. of flour.

Erie Canal.—The amount received for tolls on all the New York State canals during the 3d week in September, is.....\$127,184 63
Same period in 1850..... 132,812 61

Decrease in 1851.....\$5,627 98

The aggregate amount received for tolls from the commencement of navigation to the 22d September inclusive, is.....\$2,275,885 99
Same period in 1850..... 2,025,127 37

Increase in 1851.....\$250,758 62

Boston, Concord and Montreal Railroad.—The following statement gives the receipts of the Boston, Concord and Montreal Railroad, from February 1st last, to Sept. 1, as compared with the corresponding months of the previous year:

	1850.	1851.	Increase.
Gross receipts	1850.	1851.	Increase.
For February.....	\$8,778 33	\$9,279 56	\$501 23
For March.....	9,976 67	11,150 10	1,173 43
For April.....	10,396 65	12,336 06	1,939 41
For May.....	9,948 79	11,756 92	1,808 14
For June.....	10,715 94	12,718 55	2,002 64
For July.....	13,245 18	16,579 77	3,334 59
For August.....	16,113 35	18,249 81	2,136 46

Total.....\$79,174 90 \$92,070 80 \$12,895 90

It will be noticed by the above that the business of this promising Road is increasing handsomely.

Railway Share & Stock List;

CORRECTED WEEKLY FOR THE

AMERICAN RAILROAD JOURNAL.

NEW YORK OCTOBER 4, 1851.

GOVERNMENT AND STATE SECURITIES.

U. S. 5's, 1853.....	101½
U. S. 6's, 1856.....	103½
U. S. 6's, 1862.....	110
U. S. 6's, 1862—coupon.....	114½
U. S. 6's, 1867.....	115½
U. S. 6's, 1868.....	116½
U. S. 6's, 1868—coupon.....	122½
Land Warrants.....	140a145
Arkansas 5's.....	52a53
Alabama 5's.....	91a92
Indiana 5's.....	79
Illinois 6's, 1870.....	65a68
Kentucky 6's, 1871.....	105a106
Massachusetts sterling 5's.....	105a106
Massachusetts 5's, 1859.....	100½
Maine 6's, 1855.....	103
Maryland 6's.....	102½
Michigan.....	—
Mississippi.....	—
New York 6's, 1865.....	117a118
Ohio 6's, 1860.....	106½
Pennsylvania 5's.....	91

RAILROAD BONDS.

Atlantic and St. Lawrence, 6 percent.....	85
Baltimore and Ohio, 1867.....	94½
Boston and Providence 6's, 1855.....	101
Boston and Worcester 6's, 1855, convertible.....	107½
Bost., Concord and Mont. 6's, 1860, mortgage.....	87½
Cheshire 6's, 1860.....	91½
Connecticut River 6's, convertible.....	98
Erie 7's, 1859.....	96
Erie 7's, 1868.....	108½
Erie income 7's.....	89
Hudson River 7's, 1853.....	101½
Michigan Central, convertible, 8's, 1856.....	104½
New York and New Haven.....	100½
Norwich and Worcester, mortgage, 1860.....	80a85
Old Colony, 1854.....	97½
Ogdensburg 7's, 1859.....	90
Portsmouth and Concord.....	80a85
Passumpsic 6's, 1859.....	94½
Rutland 7's, 1863.....	97
Reading mortgage, 1860.....	80
" " 1870.....	75
Sullivan, mortgage 6's, 1855.....	75
Vermont Central 6's, 1852.....	93
" " 6's, 1856.....	88
Vermont and Massachusetts 6's, 1855.....	85

RAILROAD STOCKS.

[CORRECTED FOR WEDNESDAY OF EACH WEEK.]

	Oct. 1.	Sept. 24.
Albany and Schenectady.....	89½	—
Atlantic and St. Lawrence.....	60a65	—
Androscoggin and Kennebec.....	30a35	—
Boston and Maine.....	106	104½
Boston and Lowell.....	109	109
Boston and Worcester.....	100	100½
Boston and Providence.....	84½	87
Bost., Concord and Montreal.....	40	—
Baltimore and Ohio.....	71½	—
Baltimore and Susquehanna.....	36	—
Cheshire.....	53	—
Cleveland and Columbus.....	—	—
Columbus and Xenia.....	—	—
Camden and Amboy.....	—	—
Connecticut River.....	60	—
Delaware and Hudson (canal).....	—	—
Eastern.....	95	96
Erie.....	73½	75½
Fall River.....	92½	92½
Fitchburgh.....	108½	108½
Georgia.....	—	—
Georgia Central.....	—	—
Harlem.....	63	66½
Hartford and New Haven.....	124	—
Housatonic (preferred).....	52	—
Hudson River.....	68	71½
Kennebec and Portland.....	50a55	—
Little Miami.....	—	—
Long Island.....	13	14½
Mad River.....	—	—
Madison and Indianapolis.....	92	92½
Michigan Central.....	104	104
Montgomery and West Point.....	—	—
Michigan Southern.....	—	—
Manchester and Lawrence.....	97	89
Morris (canal).....	14½	15½
New York and New Haven.....	104½	106½
New Jersey.....	133	—
Northern.....	65	66½
Nashua and Lowell.....	107½	—
New Bedford and Taunton.....	111	—
Norwich and Worcester.....	45½	48½
Norfolk County.....	20	—
Ogdensburg.....	30	33½
Old Colony.....	65½	66
Passumpsic.....	80	—
Pennsylvania.....	—	—
Pittsfield and North Adams.....	95	—
Philadelphia, Wilm'gton & Balt.....	28	29
Petersburg.....	—	—
Richmond and Fredericksburg.....	—	—
Richmond and Petersburg.....	52½	54½
Reading.....	105	106
Rochester and Syracuse.....	41	45½
Rutland.....	40½	41½
Stonington.....	—	—
South Carolina.....	—	—
Syracuse and Utica.....	123½	—
Sullivan.....	25	—
Taunton Branch.....	108	—
Troy and Greenbush.....	90	—
Tonawanda.....	—	—
Utica and Schenectady.....	127½	127½
Vermont and Canada.....	97	99½
Vermont Central.....	26½	35½
Vermont and Massachusetts.....	25	27
Virginia Central.....	—	—
Western.....	102	102½
Wilmington and Raleigh.....	—	28½
York and Cumberland (Pa.).....	20	—

Pittsburgh and Steubenville Railroad.

We are informed that the consulting engineer, W. Milnor Roberts, Esquire, and the chief engineer, David Mitchell, Jr., have made a preliminary reconnaissance of the projected Pittsburgh and Steubenville Railroad, and have found the route as favorable as was anticipated. Two corps of engineers have been organized, who will enter upon duty immediately—one commencing at Pittsburgh, the other at the river opposite Steubenville. The following gentlemen compose the engineer corps:

David Mitchell, Jr., chief engineer; W. Milnor Roberts, consulting engineer; James E. Day, R. T. Mason, principal assistants; W. Graydon Smith,

P. Brady, assistants; P. Livingston, Finley Patterson, surveyors; James Seibnock, Andw. Beaumont, topographers and draftsmen.

Pennsylvania.

Chartiers Creek Railroad.—The Railroad of the Chartiers coal company (4 feet 8½ inches gauge,) begins upon the Ohio river, in a cove behind "Brunot's Island," near "McKee's Rocks," three miles below Pittsburgh, at a spacious wharf, called COAL HARBOR, and extends inland by the valley of Chartiers Creek, five miles to the nearest outcrop of the Pittsburgh coal-seam at the first mines owned by the company, upon the "Irwin Tract." The flat bar rail of this railway is entirely of American iron, manufactured at the Brady's Bend Works.

On the lower part of this Railroad, from the River to Davis's Run, (near the Turnpike,) 3½ miles, the grades are either level or have a moderate descent towards the River, with easy curves horizontally.

From Davis's Run to the Mines, 1½ miles, the grade is ascending towards the Mines, at the rate of 133 to 145 feet per mile (chiefly 145,) with curves of 550 feet, minimum radius.

The level of the coal vein at the outcrop, is 346 feet above low water mark in the Ohio river, at Coal Harbor.

At the wharf, top rail is above low water... 30 feet.
Top rail at the chute at the mine, above wharf..... 262 "
Outcrop of coal above top rail at the chute. 54 "

Height of coal crop above low water. 346 "

The total ascent on the heavy grade is about 215 feet in 1½ miles, on the remainder of the road, 47 feet in 3½ miles.

At the first mines, the company have four openings and as many more at their second mines, (one mile further inland,) to which the railroad is not yet extended, though it is partly graded.

The company have at present one locomotive, and 50 large four wheeled coal cars (built by Knapp & Co., of Pittsburg,) on the railroad, and 40 drift cars, (built by Marshall, Brothers,) in the mines, —the former when fully loaded, will carry about five tons each—the latter one ton.

All the coal shipped by this company will be weighed, five cars at once, on a large scale, sixty feet long, (now building by Ellicott & Abbott, at the wharf,) and sold by the ton of 2240 lbs.

The capacity of this railroad to transport coal from the mines to the river, depends on the number of empty cars the locomotive can work up the heavy grade at once. This has been ascertained by trial, to be from 15 to 20, at each ascending trip, and each empty car weighing about 2½ tons.

As each car will carry about five tons of coal, the six wheel connected locomotive, "John Thompson," now on the road, will work down each day, in six trips, about 540 tons, or 16,000 bushels.

The company own four tracts of coal land, (about 550 acres,) and the coal right on another of about 90 acres. The total investment of this company is about \$200,000.

The arrangements at the mines, at the wharf, and upon the railroad, will enable this company to transact a heavy business, and by proportionally increasing the rolling stock, their capacity to deliver coal afloat, will be very great.

The residences of the miners (in houses owned by the company,) are at the upper mines, at the village of Remington.

The large amount of coal, and the regularity of

its delivery daily at Coal Harbor by locomotive power, will furnish great facilities to a heavy steam towing line upon the river, calculated to receive and take away the coal with promptitude and regularity.

A steam ferry is about to be established between Coal Harbor and Manchester.

Proposed Railroad from Nashville to the Mississippi.

A reconnaissance has recently been made by Geo. H. Hazlehurst, Esq., first assistant engineer of the Nashville and Chattanooga railroad company, with a view to ascertain the practicability of a railroad from Nashville to the Mississippi river, near the northwest corner of the State of Tennessee.

The route examined, after leaving Nashville pursues a nearly westerly course, through Davidson, Dickson and Humphreys counties, to the Tennessee river, which it crosses a few miles above Reynoldsburgh. Thence it pursues a northwesterly direction through Benton county to Paris, in Henry county; thence westerly to Dresden, in Weakley county. From the latter point, two routes were examined; the southern passing about 3½ miles south of Troy, the county seat of Obion county, and thence northwesterly passing near the borders of Reelfoot Lake, and reaches the Mississippi a short distance below the Madrid Bend. The northern route passes eight miles north of Troy, and the proposed terminus is immediately at the head of Island No. 10, some three miles south of the State line (which here touches or cuts off a small portion of the Missouri shore), and about eight miles east of the northwest corner of Tennessee.

From the northern terminus to the southern, the distance by land is eight miles, while by the river the distance is some twenty five miles. The country contained in these limits is known as the Madrid Bend, which is an exceedingly fertile body of land at a general elevation of fifteen feet above the highest rises of the Mississippi. As far as the topography of the country is concerned, the Madrid Bend possesses unsurpassed advantages for the most extensive railroad business, or for the location of a city that may be expected to rival New Orleans in extent.

No serious obstacles were encountered on the route, with the exception of the Tennessee river, which requires a bridge about 1800 feet in length, and the lower chords of the arch through which it is proposed for boats to pass, will require to be at an elevation of ninety feet above low water.

The line of road is very direct, and the grading as light as could be anticipated. The following is an estimate of the probable cost of the road, the distance being assumed to be 175 miles. This is about the distance from Nashville to the northern terminus, which is some five or six miles shorter than to the southern.

Grading, including small bridges, at \$4,000 per mile..... \$700,000
Iron, 100 tons per mile, cost \$50, at \$5,000 per mile..... 575,000
Timber for superstructure and laying down at \$1,500 per mile..... 262,500
Tennessee river bridge..... 125,000

1,962,500
Add 10 per cent for contingencies..... 196,250

2,158,750
Buildings and equipment..... 311,250

Total..... \$2,500,000

A large part of the country through which this road would pass, is highly cultivated and thickly

populated; and at various points along the route there are valuable beds of ore.

New York.

Northern Railroad.—We are indebted to C. L. Schlatter, Esq., superintendent of this road, for a copy of the report of the examining committee, who were appointed at a meeting of the board of directors in June last, to examine the accounts of the different stations, and report on the management and working of the road. The committee made a personal inspection of the condition of affairs at each station on the route, and examined the master machinist and all the station agents, as to the manner in which the various business operations of the road were conducted. It is unnecessary for us to give a detailed report of the minutiae, but we will present a brief summary of the information obtained. The committee concur in the opinion that the operations of the road, throughout its various departments, are conducted with skill, industry and faithfulness. They also pay a deserved tribute to the judgment, ability and energy of Mr. Schlatter, which are such essential elements of proper management, and so indispensable to the successful operation of a railroad.

The equipments of the road consist of 20 locomotives; 14 first class passenger cars; 2 second class do; 4 postoffice and baggage cars; 237 eight wheel box cars; 164 eight wheel platform cars; 188 four wheel gravel and other cars; 14 four wheel iron and material cars, and 2 large size snow ploughs.

The twenty engines employed upon the road were all in working order, with the exception of one, which was undergoing repairs; and all the passenger cars were in good condition except one, which was being painted.

The freight and passenger station houses, blacksmith and machine shops, etc., are generally in excellent condition. At Ogdensburg is a large grain warehouse, 110 by 82 feet, capable of storing 168,000 bushels of grain, with steam elevators capable of taking up 2,000 bushels per hour. At Rouse's Point, the company own a row of four 2½ stories dwelling houses for workmen.

The following is a statement of the consumption of oil, from October 1, 1850, to June 1, 1851:

	Miles run.	Gallons.
In engines.....	202,608	1,878
Passenger and baggage cars	181,220	196
Freight cars.....	1,352,708	1,423
Gravel cars.....	664,604	472
Machine shops.....		177
Office, stations, switches and miscellaneous.....		307
Total.....		4,453

The following is an account of the business of the road from April 1, to July 12, 1851:

Number of miles run by engines, on—	
Passenger trains.....	33,079
Freight trains.....	44,271
Gravel trains.....	24,154
Other trains and alone.....	983
	102,487

Number of miles run by cars:	
Passenger and baggage cars.....	97,311
Freight cars.....	700,319
Gravel cars.....	480,738
	1,278,368

Number of tons of freight carried for customers:	
Through freight going east.....	10,724
" " west.....	2,465
Way " east.....	15,016
" " west.....	2,393
Total.....	30,598

Number of passengers carried:

Through passengers, paying.....	2,871
Way " "	15,347
Free passengers.....	431
	<hr/>
	18,649
Number of miles travelled by passengers..	831,733
The earnings of the road from April 1, to July 1,	
1851, were:	
Freight.....	\$66,659 77
Passengers.....	22,776 89
Mail.....	1,275 00
Express.....	150 00
Miscellaneous.....	3,344 29
	<hr/>
	94,205 95
Total expenses.....	44,932 87

Net earnings.....\$49,273 08
Thus showing that 52 per cent of the earnings
for the period above stated were profit.

From the Merchant's Magazine.
**Internal Improvements of the State of
 New York.**

A SKETCH OF THE RISE, PROGRESS, AND PRESENT
CONDITION OF INTERNAL IMPROVEMENTS IN THE
STATE OF NEW YORK.

Continued from Page 564.

RAILROADS.

In 1836, forty-three railroads were chartered; seven of which have been constructed:—the Albany and West Stockbridge, Attica and Buffalo, Auburn and Rochester, Lewiston, Schenectady and Troy, Skaneateles, and Syracuse and Utica.

Governor Marcy, in his message, called the attention of the Legislature to the application of the Erie railroad for aid, stating that the sum of \$2,382,100 had been subscribed to the stock, and that forty miles of the road had been put under contract, and that \$27,000 had been expended, mostly for surveys; and it was added that "the company entertain a confident opinion that the whole work will be executed and put in operation for six millions of dollars. Accompanying the message was a communication from James G. King, president of the company, asking a loan of the credit of the State for three millions of dollars, to be advanced in instalments, as the company shall have previously completed continuous portions of the road with their own money, "sufficiently extensive and valuable to afford the State perfect security against any possible loss or inconvenience." The bill introduced into the Assembly provided that the company should receive from the State \$600,000 in certificates, when a railroad was completed from the Delaware and Hudson canal to the Chenango canal, a distance of 146 miles; \$700,000 more when the road was completed to the Alleghany river; \$300,000 when it reached Lake Erie; \$400,000 when the road was made from the Hudson river to the starting point on the Delaware and Hudson canal. And a further sum of \$1,000,000 when the company had constructed and completed a continuous line of double track railroad within this State, from the Hudson to Lake Erie. The vote in the Assembly, on this bill, was 63 to 45; the Speaker, Charles Humphrey, declared the bill passed; Mr. Preston King appealed from this decision, on the ground that this bill required a vote of two thirds, under the constitution. On the appeal, the decision of the Speaker was sustained, 61 to 29. In the Senate, Mr. Mack, of Tompkins, made an able report in favor of the bill. Col. Young introduced a resolution in the Senate declaring that it was "a bill requiring for its passage the votes of two thirds of all the members elected to both branches of the Legislature." This was negatived 21 to 8, and the bill passed 17 to 12. The requirement to construct 146 miles of road before any stock was issued to the company, was not complied with, and none was issued on the terms of the act of 1836.

In 1837, fourteen railroad charters were granted; but none of them have been constructed. The Erie railroad company applied for a modification of the act of the preceding year, urging that the pecuniary revulsion had deprived the company of the means of constructing the required portion of the road, as a condition precedent to the issue of any of the stock. Mr. Mack, of the Senate, reported against

this application, and also against an application of the Catskill and Canajoharie railroad company, for a loan of the credit of the State. An act was passed at this session, allowing the Utica and Schenectady railroad to carry the United States mail: and another, chap. 363, declaring it lawful for the company, without charge, to transport extra baggage or articles for passengers, who owned or had charge of the same, and were travelling in the same trains. Laws were also passed authorising the Catskill and Canajoharie railroad company to borrow \$400,000, on a mortgage of the road, and empowering the trustees of the village of Catskill to subscribe for two hundred shares of the stock of the road, and to borrow \$100,000 on the faith and credit of the village, with the approbation of a majority of the voters thereof. Acts were also passed for assessing highway taxes on railroad corporations, and chap. 300, in relation to unclaimed baggage.

In 1838, charters were granted for three railroads, none of which have been constructed. The Governor was furnished with a copy of a memorial to the Legislature, signed by P. G. Stuyvesant, vice president of the New York and Erie railroad company, in which it was stated that owing to the refusal of the state to make the advances prayed for at the previous session, the company, after expending \$300,000, was compelled in May, 1837, to arrest, entirely, the prosecution of the work, and discharge the engineers. The company, in this memorial, ask the state for a subscription of \$3,000,000 to the stock of the company; and with this aid, and a subscription of \$3,000,000 by individuals, the utmost confidence is expressed that the railroad may be completed to Lake Erie in three years.— This memorial alluded to the works of Pennsylvania, "fostered by the Legislature, or aided by the capital of the great banking institution* recently domiciled within her territory, nearly 2,000 miles in length, having directly in view the rendering of this western trade, which our earlier enterprise, it was vainly supposed, had appropriated to New York, tributary to her commercial capital." And in alluding to the connection of the public works of Pennsylvania with their only port on Lake Erie, the memorial says: "The chief magistrate of that State, in his late annual message, exultingly declares, 'that the completion of the Erie extension to the noble harbor of Erie, will give Pennsylvania the undisputed command of the lake trade.'"

This memorial was referred to the railroad committee, of which Mr. Holley, of Wayne, was chairman, who made a report in favor of modifying the act of 1836, so as to give the company certificates to the amount of \$300,000, when proof was furnished to the controller of the expenditure, in surveys or otherwise, of that sum; and an additional \$100,000 on proof of the subscription of a like amount, and the expenditure of the same on the road. Accompanying this report was one from Edwin F. Johnson, Esq., on the advantages of the Erie railroad. The bill passed the Assembly 84 to 12, and the Senate 23 to 7. The following extraordinary provision, which was not in the original bill, as reported by Mr. Holley, became connected with it in its progress through the Legislature, viz:—
“But no part of the said stock shall be issued until the controller shall be satisfied that ten miles of the said railroad extending westwardly from the Hudson river, at Jappan, in the county of Rockland, and ten other miles thereof, extending eastwardly from Dunkirk, in the county of Chatauque, shall have been located; and that the grading of each of the said sections of ten miles has actually been put under contract.”

The bill to loan the credit of the State to the Catskill and Canajoharie Railroad Company, passed the Assembly 74 to 17, and the Senate 20 to 10. An act also passed at this session for loaning to the Ithaca and Owego Railroad Company \$250,000, or one-half the sum expended on the road from Ithaca to Owego. And an act to loan the sum of \$200,000 to the Auburn and Syracuse Railroad Company. Acts were also passed to punish persons for

* The bank, which was chartered in 1836, proposed to give \$2,000,000 to the State treasury, \$2,500,000 to the school fund, and \$139,000 to eleven turnpike companies, and to subscribe \$637,000 to ten railroad and other companies, and to loan the State, at 4 per cent, \$7,000,000—total, \$12,314,000.

injuries done to railroads, by imprisonment in the State prison or county jail, except in cases where death ensued. Also for filing in the canal department plans of the mechanical work constructed on railroads, and maps and profiles of all railroads.

Under the laws for loaning the credit of the State to railroads, the sum of \$100,000 was issued in 1838 to the New York and Erie Railroad Company—\$100,000 to the Catskill and Canajoharie—\$200,000 to the Auburn and Syracuse, and \$287,700 to the Ithaca and Owego. The Ithaca and Owego and New-York and Erie stock bears an interest of 4 1/2 and the other 5 per cent.

In 1839 four railroads were chartered, one of which, the Oswego and Syracuse, has been constructed. Governor Seward, in his first annual message, alluded to three lines of railroads through the State and in reference to the southern and northern routes, recommended that the Legislature "adopt such measures as will secure their completion without delay"—"and if their completion cannot speedily or advantageously be effected otherwise, they ought to be constructed at the expense of the State."

In the Assembly, Mr. Scoles of New-York, made favorable reports on several of the applications for railroads. A strong effort was made in both houses to get the State to adopt the Erie Railroad as a State work; the bill passed the House 61 to 44. It was introduced into the Senate by a report from Mr. Johnson, of Delaware, but rejected, 15 to 14. This bill authorized one million of dollars to be borrowed to pay the company for previous expenditures. Bills were passed by the Assembly, at this session, for loaning the credit of the State, and making appropriations in aid of ten railroads to the aggregate amount of \$3,290,000, all of which were rejected by the Senate.

A memorial was presented to the Legislature in behalf of the Erie Railroad Company, asking for a second modification of the law of 1836, so as to authorize an issue of State stock in the ratio of three dollars to one expended by the company; and the interest to be paid by the States; and stating that no aid less than that prayed for would be adequate to the successful prosecution of the work.

An act passed authorizing the city of Albany, on a vote of its inhabitants, to borrow \$400,000, and invest the same in the stock of the Albany and West Stockbridge Railroad Company. Also to authorize the Directors of the Long Island, the New-York and Albany, and the Harlem Railroads to borrow money, and mortgage their roads.

From 1840 to 1844, both inclusive, the only railroad charters granted were one from Albany to Goshen, in 1843, and a charter for the Susquehanna, granted to the persons who had purchased the Ithaca and Owego Railroad.*

In 1840, acts were passed to loan the credit of the State to railroad companies, as follows:—

Auburn and Rochester	\$200 000
Hudson and Berkshire	150,000
Ithaca and Owego	25,000
Long Island	100,000
New York and Erie, \$2 for \$1 expended ..	2,700,000
Schenectady and Troy	100,000
	<hr/>
	\$3,478,000

The sum of \$300,000 only had been issued to the New York and Erie Railroad, previous to the law of 1840, which authorized \$100,000 to be given, for each \$50,000 expended by the company.

Provision was made in 1840 for a sinking fund of 1 and 2 per cent to be paid into the Treasury by the railroad companies which had loans of State credit. This, however, was not required in the case of the New-York and Erie road.

In his annual message in 1840, Governor Seward, in alluding to the New-York and Erie, and the Ogdensburgh and Champlain Railroads, said: "I am convinced that the difficulties as well as the cost of these improvements have been as greatly exaggerated, as their probable revenues have been undervalued. It is no longer doubtful that railroads may be constructed by the State as suitably as can be, and that the public convenience requires

* The Lockport and Niagara Falls Railroad Co., in 1841, was authorized to extend the road from Lockport to Rochester, or to Batavia.

that the former as well as the latter, should, as far as practicable, be controlled by the State."

Mr. Furman, of Kings, made a report in the Senate, in favor of constructing the Erie Railroad by the State. This bill was stricken out and one substituted for giving the company two dollars of stock for one dollar expended, which passed of 14 to 12.

Mr. Furman also made a strong report in favor of granting aid to the amount of \$1,000,000 to the New-York and Albany Railroad. In this report, he alluded to the chain of railroads through the central line of New-York, and from Albany to Boston, and to an association then recently formed, "for opening a regular steamboat communication between England and the city of Boston." "All this is done," says the report, "with a connected view to opening a new course of channel for trade, and that the facilities which will be thus afforded for a certain and speedy communication, must exert a considerable influence upon the business and trade of our State," unless counteracted by a railroad connection between the cities of New York and Albany.

Governor Seward, in his message of 1841, announced that forty-five miles of the Erie Railroad, from Piermont to Goshen, would be in operation in January, of that year—seventy-two miles in the whole being graded. That \$1,350,000 had been expended—that the total cost would be as estimated by the company, \$9,000,000, and that the company expected to complete the road in two years; and, also, the Auburn and Rochester road, from Canandaigua to Rochester, was in operation in the preceding September.

Mr. Furman, in the Senate, made a report in favor of loaning the credit of the State to the Harlem Railroad Company, to the amount of \$350,000, to enable it to complete the road to the north line of Westchester, and connect with the Housatonic Railroad at or near Danbury, in Connecticut, and thus make a connection with Albany. The bill was not acted on.

In the Assembly, Mr. Culver, of Washington, made a report against the petitions for aid to the Erie Railroad. In this report, which is Doc. 297, he reviewed the legislation in regard to taking the road as a State work, and also took a view of the pecuniary condition of the State at that time, and came to a conclusion that the prayer of the petitioner ought to be denied; holding out encouragement that the State might assume the road, or aid in its construction, at a future day.

An act passed in 1841, authorizing the city of Albany to borrow \$350,000, and invest the amount in the Albany and West Stockbridge Railroad stock. And another to increase the capital of the Syracuse and Utica road to \$1,000,000.

In his annual message in 1842, Governor Seward recommended the Northern and Southern lines of railroad to the favorable consideration of the Legislature. In alluding to the Erie road, he stated that "the Legislature of 1836, appropriated to it a loan of public credit for \$3,000,000, but the conditions of the act being impracticable, the work was suspended until the law was modified, in 1840, since which period the enterprise has been vigorously prosecuted." "Portions, 232 miles in length, will be ready for a superstructure in the present month. A sum exceeding four millions of dollars has been expended, of which \$2,600,000* was derived from the State loan. If prosecuted with the same energy as during the last year, the road will be completed in 1843." In the same message, he announced that the Canajoharie and Catskill, and the Ithaca and Owego Railroad Companies, "having failed in July and October last to pay the interest on the stock issued in their behalf, under laws passed in 1838 and 1840, the amount of that interest, equal to \$11,405, was paid at the Treasury. Proceedings of foreclosure have been instituted."

On the 14th of March, the Governor announced to the Legislature, in a special message, and on the authority of Mr. Bowen, the President of the New York and Erie Railroad Company, that "if legislative aid is longer withheld from the association, it must desist from prosecuting its great enterprise; the laborers employed must be discharged; the in-

terest on the three million State loan, due on the first of April next, will remain unpaid, and the contingent debt fall immediately upon the Treasury." When the company failed to pay interest, the Controller, Mr. Flagg, gave notice for the sale of the road at public auction in the autumn of 1842. At the extra session of the Legislature, August 25, 1842, a joint resolution passed, directing the Controller to postpone the sale of the New York and Erie Railroad, until the first Tuesday in May, 1843.

On the 20th of May, 1842, the Ithaca and Owego, and the Catskill and Canajoharie Railroads, having been advertised for the preceding six months, were sold at auction, at the capitol—the first for the sum of \$4,500, and the other for the sum of \$11,600. The amount of stock issued to these two roads was \$515,700, the interest on which from the date of the default, to the time when the principal is reimbursable, amounts to \$510,627 87—total, \$1,026,327 87. Being a loss of more than a million of dollars after deducting the sum realized on the sale of the roads. Application was made in 1842 for a charter for a railroad along the Hudson River, which failed for want of a vote of two-thirds, in the Senate.

In his first annual message, in 1843, Governor Bouck stated that an almost entire new board of directors had been chosen for the Erie Railroad: and he suggested the enactment of "a law yielding the prior lien of the State mortgage to such incumbrances as may hereafter be created by the company, for the purpose of completing the road." And he expressed a hope that the road from Catskill to Canajoharie would eventually be completed.

The Erie Railroad Company was called on by the Senate to give an account of its funds on the 11th March, 1842, when its inability to pay interest was announced to the Governor. Dec. 38 shows that the amount of 6 per cent stock pledged at that date was \$439,000, on which the company had received the sum of \$385,908 68, and it is shown that the price of the stock, on that day was 80 cents for 100 of stock, leaving with brokerage, a deficiency against the company of \$31,806 18. The company had in cash on that day \$201 32, as certified by E. Pierson, Treasurer. This document also contains the copy of an assignment made by the company to James Bowen and his associates, in April, 1842, for the benefit of its creditors.

Mr. Faulkner introduced into the Senate a bill similar to the one reported by him in 1842, to aid in the construction of the New York and Erie railroad. This bill, as finally passed, suspended the sale of the road—authorized the company to issue bonds to the amount of \$3,000,000, and if the road was completed in seven years, and not purchased by the State, the State lien to be released. A railroad commissioner was authorized to be appointed by the Governor and Senate, who was to counter-sign the bonds. In case of the non-payment of these bonds, the Controller was required to sell the road. The bill passed the Senate 19 to 10, and the Assembly 68 to 25. It was decided in the House by a vote of 54 to 39, and in the Senate by a vote of 19 to 8, that this bill did not require for its passage a vote of two-thirds of the members. A resolution was adopted by the Assembly, requiring all railroads to make an annual report to the Secretary of State. This was introduced by Mr. Hathaway, of Chemung.

In October, 1843, the following persons were chosen Directors of the company, viz: Horatio Allen, James Browne, D. A. Cushman, H. Weed, J. Brown, T. Dehon, P. Spofford, C. M. Leupp, J. W. Edmonds, A. G. Phelps, M. Morgan, J. C. Green, William Maxwell, A. S. Diven, E. Risley. H. Allen was chosen President, and J. Brown Vice-President. On the 7th October this Board of Directors issued a notice to the public promising to investigate the affairs of the company, and if they find it practicable to surmount its embarrassments to call upon the public to aid them in the prosecution of the work.

The debt of the company, as shown in a subsequent report of the board, was found to be \$600,000, exclusive of the three millions due the State. A report made to the Senate, in 1845, states that this board rendered great service by reducing the affairs of the company to order.

In 1844, an act was passed, Chap. 335, authoriz-

ing the several railroads from Albany to Buffalo, to transport property, during the suspension of canal navigation, by paying to the State the same rate of toll, per mile, as the property would have paid on the Erie canal. The commissioner appointed under the act of 1843, for aiding the Erie railroad, W. Baker, made a report in 1844, Assembly Doc. No. 6. Mr. Baker examined the line of the road from Dunkirk to the Hudson, in company with Major Brown, the chief engineer, in the summer of 1846. It is stated in this report that the company had not accepted the act of 1843. That the avails of the three millions of State credit, as shown by the Treasurer's account, were \$2,600,079 05; and that the subscriptions to capital stock, \$1,537,926 14.

In 1845, application was made for a modification of the law of 1843, releasing the three millions to the Erie railroad, and Mr. Vanvalkenburg, of Steuben, made a report in the Assembly favorable to the application, and introduced a bill. The new bill gave purchasers of bonds an absolute lien on the road in preference to the State lien, whether the road was finished as specified or not; the State relinquishing its prior lien to the individual holders of the bond, and at the same time holding it against the company, unless the road was completed to Lake Erie within six years from May, 1845. This bill passed the Assembly by 98 to 15, and the Senate 24 to 4.

Acts were passed this year for railroads from Attica to Hornellsville, Canandaigua to Corning, Seneca Lake to Elmira, Ogdensburg to Lake Champlain, Troy, to Greenbush, and authorizing the extension of the Harlem railroad to Albany.

In 1846, seven railroads were chartered, two of which have been constructed; the Hudson river, and the New York and New Haven. An act was passed appointing seven commissioners to determine on the route of the Erie railroad, at various points between the Hudson river and Binghamton. The commissioners were John B. Jervis, Orville W. Childs, Horatio Allen, Frederick Whitteley, Jared Wilson, William Dewey, and Job Pierson. They were authorized to make surveys, and locate on a route different from that originally surveyed.

An act also passed at this session requiring the Tonawanda railroad to convey all kinds of products at the rates fixed in the law. And another (Sec. 17, of Chap. 215.) requiring all railroads, on application of the Post Master General, to enter into contracts for carrying the United States Mail.

In 1847, no new railroads were chartered. But acts were passed requiring the several railroad companies extending from the Hudson river to Buffalo to lay down an iron rail weighing fifty-six pounds the yard, and one track to be completed in two years from January 1, 1847; and they were authorized to borrow money for the purpose. These provisions are in Chap. 272, which also provides for checks to be attached to baggage, and a duplicate furnished to the owners. Chapter 222 fixes terms of accommodation in regard to passengers, &c., where different lines of railways connects. Companies are authorized to change the route of their roads, Chap. 404, and to increase their capital, or borrow money for laying down heavy rail, Chap. 405. The Oswego and Syracuse railroad authorized to carry freight during the whole year, paying canal tolls therefor. The Utica and Schenectady, and the other roads to Buffalo, authorized to do the same on like terms; and all railroads declared subject to the liabilities of common carriers, Chap. 270. There was also passed at this session one important law, Chap. 450, making railroad companies liable for damage in case of death caused by the wrongful act, neglect or default of the company or its agents, to be recovered by the personal representatives of the deceased, and apportioned to the widow and next of kin.

In 1848, a general law was passed for the organization of railroad corporations, as provided by the first Sec. Art. 8, of the Constitution of 1846. The 20th Sec. of this general law reserves to the Legislature the power of determining on application in each case, whether the proposed road is of sufficient public utility to justify the taking of private property for the route. In 1848 six laws of this character received the favorable action of both houses. In the case of a direct line from Syracuse to Rochester, which enlisted a strong interest in favor of

* The sum of \$200,000 was added, making \$3,000,000 before the close of the month in which the Message was delivered.

as well as against it, the Legislature refused the endorsement of "public utility."

In 1849, laws were passed declaring the "public utility" of six routes for railroads, and granting a charter for the construction of a railroad across the Isthmus of Panama, under the grant made by the republic of New Granada to William H. Aspinwall, John L. Stephens, and Henry Chauncey. Acts were passed at this session prescribing the items to be returned in annual reports of railroads, Chap. 434. Amending the act of 1847, respecting death by wrongful act, &c. of company, by limiting the recovery to \$5,000, and providing for punishing the company's agent by imprisonment in the State prison or county jail, and also by fine.

In 1850 the general railroad law was amended so as to render any application to the Legislature unnecessary. This act, Cnap. 140, authorises any number of persons, not less than twenty-five, by subscribing a sum equal to \$1,000 per mile, and paying 10 per cent. of the amount, to file articles of association in the office of the Secretary of State, and become incorporated for the construction of a road. Previous to exercising the authority of taking private property for the roadway, the whole capital must be subscribed and ten per cent. paid thereon.

The following statement shows the number of railroads chartered, and the number subsequently constructed of those chartered in each year:—

Years.	Chart'd.	Const'd.	Years.	Chart'd.	Const'd.
1826....	1	1	1839....	4	1
1827....	none.		1840....	none.	
1828....	7	2	1841....	none.	
1829....	3	none.	1842....	1	
1830....	none.		1843....	*1	
1831....	4	2	1844....	none.	
1832....	27	3	1845....	5	4
1833....	6	3	1846....	7	2
1834....	10	5	1847....	none.	
1835....	2	none.	1848....	*7	
1836....	43	7	1849....	6	
1837....	14	none.			
1838....	3	none.	Total....	151	30

Ogdensburg Railroad.

An officer of the Vermont Central Railroad writes, under date of the 2d ult. :—

"A train of cars, with the engine and tender attached, passed over the bridge at Rouse's Point for the first time yesterday with complete success. It works to a charm. The bonds are going well. Freight is commencing in good earnest. Passengers are numerous, and for the last few days we have taken from ten to twelve hundred dollars a day for passengers alone. No one here doubts that the receipts this fall will be immense."

The well directed labors of the managers of our Railroad are beginning to produce the fruits of prosperity and success. The connecting link between this road and the eastern roads being now established, the great, and we may say only obstacle has been overcome, which stood in the way of a rapid and satisfactory transaction of business—Our road has had many obstacles to contend with, but by perseverance and steady application, they have been one by one removed, and the time is at hand, in our judgment, when all these labors, and this necessary expenditure of money, will bring an ample return to stockholders. The firm confidence which those who were best informed in the matter, have ever felt in the ultimate success and prosperity of this road, is being fully justified. Under the beneficial influence of the road, our great county has already risen from a state of comparative obsolescence and lethargy, to a thriving, active, busy community. With the facilities thus opened to gain access to foreign markets, St. Lawrence has added nearly one half to her wealth, while her population is increasing in a corresponding ratio. The railroad is just what we wanted, and it is quietly and surely working out its own prosperity, and enriching the regions through which it passes. —*St. Lawrence Republican.*

*Ithaca and Owego, changed by new charter to Cayuga and Susquehanna.

†Laws passed declaring public utility of seven roads to be constructed under general law of 1848.

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To Contractors.

A DIVISION of about 30 miles of the grading, together with the mechanical works of the South Side Railroad, commencing near Farmville, and extending westward, will be let on the 15th of October next, at Farmville.

C. O. SANFORD, Chief Engineer.
Petersburg, September 4th, 1851.

Pneumatic process for making Foundations for Bridges, Piers, etc.

THE Attention of Engineers, Contractors, and Bridge Builders, etc., is directed to this method of forming secure foundations. Hollow Cylindrical piles from 8 inches to 10 feet in diameter may be sunk through sand, mud, clay, etc., to any required depth, and filled with concrete or masonry.

The efficacy and economy of the process has been demonstrated in the construction of numerous permanent works, at a much less cost than the use of any other method. (See evidence in Parliamentary enquiry, Railroad Journal, April 19, 1851.)

Contracts made, or licenses granted for the use of the invention in any part of the United States, by
CHARLES PONTEZ,
34 Liberty street, N. Y.

To Contractors.

York and Cumberland Railroad, Maine.

Portland, Sept. 12th, 1851.

PROPOSALS will be received at the office of the York & Cumberland Railroad Company in this city, from the 10th to the 15th day of Oct. next, for the grading, masonry and bridging of the York and Cumberland Railroad from Gorham Station to Great Falls, a distance of about 38 miles. Proposals will also be received at the same time and place, for building the entire line of said road, including the superstructure, or any one or more divisions thereof.

Plans, profiles and specifications will be exhibited, and all requisite information given at the office of the company, in Portland, on and after the 10th of October next.

Trains have run from Portland to Gorham during the past season; work has also been done to a considerable extent at the western end of the line, between Great Falls and Springvale.

The York and Cumberland Railroad, when completed will be the great interior line—in connection with the Boston and Maine Railroad—between Portland and Boston, and will command the principal travel between the two cities.

By order of the Board of Directors,
JOHN A. POOR, President,
JOHN F. ANDERSON,
September 15. Chief Engineer.

Railroad Iron.

THE undersigned, Agents for British Manufacturers, continue to sell Railroad Iron of the best quality, and of any weight or pattern required; deliverable at any part of the United States or Canada.

They have now on hand, ready for delivery at New York:
2,000 tons of an approved pattern, weighing about 60 lbs. to the yard.

WM. F. WELD & CO.,
42 Central Wharf, Boston.

RAILROAD SPRINGS.

Fuller's India-rubber Springs.

THESE are now made in our own Factory, of the best materials. Each spring is guaranteed to perform the required work. Purchasers guaranteed against adverse claims.

Car Builders will save great expense by calling at the office of the Company.

23 Courtlandt St., New York.

To Railroad Companies.

THE undersigned has discovered and patented an imperishable, cheap, and sufficiently elastic substance, to be introduced between the sill and rail, so that the stone sill can be used in place of the wooden sill: entirely overcoming that rigidity where the rail is laid directly on stone. Address
J. B. GRAY, Philadelphia.

July 10, 1851. 4m

Bridges & Brother, DEALERS IN RAILROAD AND CAR FINDINGS, 64 Courtlandt street, New York.

Having established a general Depot for the sale of articles used in the construction of Railroads, Locomotive Engines and Railroad Cars, we would invite your attention to our establishment. We have already in store a good assortment of CAR FINDINGS and other articles used in the trade, and feel justified in saying, that should you desire anything in our line, we can supply on terms perfectly satisfactory, and in the event of your desiring to order, you may feel assured that your terms will be as good as though you were here to make your own purchases.

Among our goods may be found Railroad Car Wheels, Axles, Jaws and Boxes, Nuts and Washers, Bolts, Brass Seat Hooks and Rivets, Window and Blind Springs, Lifters and Catchers, Door Locks, Knobs and Butts, Ventilators and Rings, Car Lamps, Coach and Wood Screws, Jack and Bed Screws and Babbitt's Metal; also Plushes, Damask, Enameled Head Linings, Cotton Duck for Top Covering in width sufficient without seams, Curled Hair and all other articles appertaining to cars.

Also a new and valuable CAR DOOR LOCK, well adapted to the Sliding Door. This is decidedly the best yet introduced.

LOCOMOTIVE ENGINE LANTERNS, the best article made in the country. Whistles, Gauge and Oil Cocks, Hemp Packing, American, Russian and Italian. We are also agents for Lightner's Patent Journal Box for Car Axles, that invaluable invention, for the economical use and preservation of Car Journals.

Coach VARNISH and Japan of the best quality.

We would also offer our services for the purchase as well as for the sale of goods on commission.—Both members of our firm have had the experience of many years in the manufacture of Railroad Cars, and our Senior was a member of the well known house of DAVENPORT & BRIDGES, Car Manufacturers, Cambridgeport, Mass. With our knowledge of matters pertaining to Railroads, we feel quite confident in giving satisfaction to both buyer and seller, and hope that through assiduity and attention to any business entrusted to our care we shall merit a continuance of confidence and patronage.

BRIDGES & BROTHER.

July 22, 1851.

Lightner's Patent Axle Boxes.

THE Undersigned are Agents for, and offer for sale, *Lightner's Patent Axle Boxes*, for Railroad Cars and Tenders, which have, by thorough experience, been demonstrated to be one of the most valuable improvements ever introduced in Locomotion. The saving effected in oil alone, will in a few months pay the first cost of these boxes, independent of other advantages. They are now in use upon the following, among other roads, viz:

Boston and Worcester, Boston and Providence, Boston and Fitchburg, Nashua and Lowell, Providence and Worcester, Northern, N.H., Cheshire, Manchester and Lawrence, Concord, N.H., Concord and Claremont, Ogdensburg, (Northern, N.Y.), Stonington, New London Willimantic and Palmer, New Jersey Central, New Hampshire Central, Worcester and Nashua, Fitchburg and Worcester, Connecticut and Passumpsic, Lowell and Lawrence, Salem and Lowell, Wilton Branch, Newburyport.

Below will be found the certificates of a number of gentlemen, whose opinions will be good authority in every part of the country.

Office Boston and Prov. R. R.,
Boston, Dec. 29, 1849.

Mr. JOHN LIGHTNER,

Sir,—It affords me pleasure to say, that after two years' trial of your boxes, I am fully and entirely satisfied of their superiority over any other pattern we have used. This superiority consists in economy of oil and freedom from "heating." I have tried every pattern of box in use, of any note, and do not hesitate to say, that you have devised one which in every respect combines greater advantages than any other within my knowledge; these advantages are so manifest, that I am fitting up all

our cars with your boxes, as fast as practicable.

Annexed, is a statement of an experiment with your boxes, the result of which may be of use to your interests.

Ten passenger cars, running 72 wheels, fitted up with Lightner's boxes used 41½ pints of Patent Oil, at 50 cts. per gallon, ran 43,099 miles, equal to 5-18 pints per wheel for 43,099 miles. Speed, 30 to 40 miles per hour.

Very respectfully yours,

W. RAYMOND LEE, Supt.

I have examined the above statement of Mr. Lee, and fully concur with him in his opinion of the superiority of Lightner's box.

GEORGE S. GRIGGS,
Supt. Machine Shop B. & P. R. R.

Boston, July 26, 1849.

This is to certify that J. Lightner's axle boxes for railroad cars and locomotive tenders, have been in use on the Boston and Worcester railroad one year, and I unhesitatingly pronounce it, in my opinion, the best and most economical one in use, requiring less oil, of easy application, not susceptible of derangement, as in most kinds in use. When requiring repairs or renewal, the same may be done in one-fourth of the time usually occupied for that purpose. The box requires oiling not oftener than once a month—is kept quite free from dust, and consequently wears much longer than those generally in use.

D. N. PICKERING,
Supt. Motive Power, B. & W. R. R.

Office of Boston Locomotive Works,
December 12th, 1849.

The Boston Locomotive Company have been using J. Lightner's patent axle boxes under the tenders of their engines for several months, and find them more highly spoken of by the railroad companies that have used them in regard to economy in the use of oil, their durability and their ease of adjustment, than any other boxes which they have used. We therefore do not hesitate to recommend them to all railroad companies.

DANIEL F. CHILD,
Treas. Boston Locomotive Works.

Taunton Locomotive Works,
Taunton, July 7, 1849.

Mr. H. F. ALEXANDER,

Dear Sir,—Your favor of yesterday came to hand in which you ask what success we have met with, in using Mr. Lightner's patent box for cars, engines, &c.

We have put it in use on the Boston and Providence railroad, New Bedford and Taunton Branch railroad, Central railroad, N. J., Norfolk County, Rutland and Burlington, and as yet we have not had one complaint from them; and from what we have used of it, and witnessed, we do not hesitate to say that it is superior to anything in use for that purpose. It is simple in its construction, and easy of access, and the reservoir is held close to the shaft, and the oil and journal is perfectly secure from dust; they will run from four to six weeks without replenishing the oil. The brass in the box is changed very much easier than by any other plan that we have seen.

Very resp. yours,
W. W. FAIRBANKS, Agent.

Office Providence & Worcester R. R. Co.,
Providence, Dec. 17th, 1850.

H. F. ALEXANDER, Esq.,

Sir,—The "Lightner patent boxes" for cars and locomotives have been in use under a portion of the passenger cars and engines of this company for upwards of two years, and have given very great satisfaction.

Though combining many excellent qualities, their great superiority consists in the economy of oil.

The result of experiments upon this road shows the consumption of oil by the use of this box, to be not more than one sixth part the quantity consumed by the use of the common box.

With the common box, eight passenger cars, 64 wheels, running 90 miles per day, consumed in 12 months 520 gallons of oil, being an average of 8½ gallon per wheel per annum.

With the Lightner box the same cars running the same number of miles per day, during the same space of time consumed 73½ gallons of oil, being an average of 1½ gallon per wheel per annum.

So manifest are its advantages over any other box used by this company, it is intended to place it under all our cars as soon as practicable.

Besides the saving of oil, as they afford complete security from dust, we think them more durable than any other box in use.

Another advantage resulting from the use of this box is, cars run more easier than with the common box. The saving in fuel which it would effect, would of itself, we think be a sufficient inducement to use this box in preference to any other known to us.

Very respectfully,

ISAAC H. SOUTHWICK, Supt.
JOHN B. WINSLOW,
Supt. Machine Shop, P. & W. R. R.

Cambridgeport, April 5th, 1851.

H. F. ALEXANDER, Esq.

Sir,—This may certify that I have been engaged in the manufacture of railway cars since 1834, and have built for the different railroad companies cars of all descriptions to the amount of three millions of dollars, and have used on the above cars all kinds of journal boxes, and find that none give better satisfaction than the "Lightner patent box," both on account of the saving of oil and the arrangement for taking out and re-placing the composition by means of the sliding key, and other conveniences which no other box possesses.

Yours respectfully,

CHARLES DAVENPORT.

Worcester, March 17th, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—This is to certify that I have been for some years past engaged in building cars, and that I have tried most, if not all of the patent boxes, and have found Lightner's patent superior to all others as far as the saving of oil is concerned, also the ease with which they are fitted and exchanged in case they get out of order.

For the last three years, I have put them under all of the cars I have built, and in every instance they have given the most entire satisfaction.

Yours truly,

OSGOOD BRADLEY.

Office Union Works, So. Boston,
May 23d, 1851.

This certifies that I have applied Mr. J. Lightner's patent axle boxes to my locomotives and tenders for the past two years. I consider them superior to all others,—economical in their use, and possessing many important advantages not found in any other boxes.

SETH WILMARTH.

Office 15, R. R. Exchange, Boston,
June 1, 1851.

This is to certify, that we have known the success of Lightner's patent journal boxes upon various roads in New England the past three years, and have been led to examine their peculiar construction.—We are well satisfied of their merits, and have adopted them upon our small gravel cars, and take pleasure, as we ever have done, in recommending their use upon all roads where we are employed in the construction.

GILMORE & CARPENTER,
Contractors.

Amoskeag Manufacturing Co. Machine Shop,
Manchester, May 31, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—We are using the Lightner box on all the engines and tenders we build, and we are satisfied that it is the best box in use, and recommend the same to all those who purchase engines at our works.

Yours respectfully,

O. W. BAYLEY, Agt.

This is to certify that the Fitchburg railroad company having become satisfied of the superiority of J. Lightner's patent Axle Boxes for Railway Cars and Locomotive Tenders adopted the same

and are bringing them into general use upon their road.

One year's experience with the above improvement, has fully convinced me that there has never been anything offered to the public for that purpose which possess such intrinsic value; in fact, this is an improvement which seems to overcome all the difficulties found in all the various kinds now in use. It possesses very many advantages over all others: Some of which are [first] the first cost is much less than that of most boxes in use. [Secondly] 75 per cent is saved in oil; one gill applied to each Journal once a month, or one quart to an eight wheel car, is all these boxes require per month [Thirdly] no dust can gain access to the Journal, which is constantly lubricated with clean oil; hence the saving in repairs of Journals and composition bearings, is a matter of importance. [Fourthly,] its construction is truly simple—not complicated, having nothing liable to become loose by constant and severe service. [Fifthly] for convenience there is nothing which approaches this improvement.—The composition bearings may be removed from the Journals of an eight wheel car, by one man, and returned, or duplicates, in twenty minutes, while under the car: the same would require two men, at least half a day with other boxes in use.—The trucks and wheels using these boxes, are free from oil and dirt, usually seen upon all railroad cars, at great expense to the corporation.

NATH'L JACKSON.

Supt. Car Building and Repairs, F.R.R. Co.

Boston, March 9, 1849.

I hereby certify, that I have examined a box for Car Journals, invented by Mr. Lightner of Roxbury, Mass, and I have thought so well of it that I have adopted it on our railroad, I have known of its success on other roads.

S. M. FELTON,
Supt. F. R. R.

Office of the Central R. R., N. J., }
Elizabethtown, May 1849. }

H. F. ALEXANDER, Esq.,

Dear Sir:—Your favor, [wishing to be informed how we liked Lightner's patent axle boxes for R.R. Journals,] has been duly received; in answer we would say, we have used the boxes on Locomotive tenders one year, more or less, and on our cars some six months. I consider them the best boxes in every respect, I have ever used, or even seen used on any other roads—for safety, durability and the economy pertaining to all the details connected with the boxes and Journals of R. R. Car wheels; and we shall adopt them upon this road.

Yours Respectfully,

JOHN O. STEARNS.

Supt. Central Railroad Co., N. J.

Manchester, N. H., Nov. }
1st, 1850. }

H. F. Alexander, Sir,

I have used "Lightner's Boxes" under all the Cars of the Manchester and Lawrence railroad, and feel no hesitation in saying that I think them to be the best boxes now in use.

Yours, &c.,

THEODORE ATKINSON, Agent.

Cheshire R. R. Office, Keene, }
March 5th, 1851. }

Mr. H. F. Alexander,

Sir,—Lightner's Patent Boxes have been used on the Cheshire R. R. about a year, and have given the highest degree of satisfaction.

All the Passenger Cars now in use, and a considerable number of Merchandize Cars are furnished with them, and they will take the place of the Common Boxes on all the cars as fast as circumstances will permit.

Very Resp't.

L. TILTON,

Supt. Cheshire R. R.

Boston and Worcester Railroad, }
Boston, April 1st, 1851. }

H. F. Alexander, Esq.,

Dear Sir,—Lightner's Patent oil saving box for railroad cars, has been adopted by this corporation; we are taking out the common and substituting the

Lightner's at the rate of fifty boxes per month; it will soon take the place of all others, as it is decidedly preferable to any heretofore used by this corporation.

G. TWITCHELL, Supt.

Statement of amount of oil used on 32 8-wheel freight cars, on the Boston and Providence Railroad (with Lightner's Boxes) from March 10, 1849, to February 27, 1851, and upon 12 8-wheeled passenger cars from September 8, 1849, to February 27, 1851.

FREIGHT CARS.			
Amount Oil.	No. months.	Amount Oil.	No. months.
1.—21 pts.	10	17.—23½ pts.	14
2.—19 "	6	18.—23½ "	11
3.—25 "	13	19.—36 "	21
4.—18 "	7	20.—22 "	10
5.—22 "	12	21.—38½ "	24
6.—24 "	13	22.—29 "	23
7.—20 "	11	23.—35½ "	23
8.—21 "	11	24.—37½ "	23
9.—23½ "	10	25.—51 "	23
10.—21 "	9	26.—31½ "	24
11.—20 "	9	27.—28½ "	22
12.—21½ "	11	28.—36 "	23
13.—19 "	8	29.—50½ "	24
14.—25½ "	17	30.—50 "	23
15.—20½ "	10	31.—41 "	23
16.—31 "	18	32.—39½ "	23

Total, 925½ pts. 510

PASSENGER CARS.			
Amount Oil.	No. months.	Amount Oil.	No. months.
1.—19½ pts.	18	7.—30 pts.	18
2.—25½ "	18	8.—25½ "	18
3.—33½ "	16	9.—29 "	18
4.—19 "	15	10.—46½ "	17
5.—15 "	15	11.—9 "	9
6.—22 "	18	12.—65½ "	17

Total, 340 pts. 197

Averaging 1 4-5 pints of oil for freight, and 1 7-10 for passenger cars per month only!

All orders and enquiries promptly attended to.

BRIDGES & BROTHER,

No. 64 Courtlandt st., New York.

July 25, 1851.

To Boiler Makers, Engineers, etc., etc.

PATENT LAP-WELDED IRON TUBES,

Manufactured by the

BIRMINGHAM PATENT IRON TUBE CO.

UNDER

PROSSER'S PATENT,

from one and a quarter to eight inches in diameter.

These tubes are well known for their superiority over all other descriptions for Locomotive, Marine and other Steam Engine purposes, for which they are used very extensively in Great Britain and on the Continent of Europe.

For sale in quantities to suit purchasers, by

WILLIAM BIRD & CO.,

44 Wall st., New York.

July 26, 1851.

To Chief Engineers, Directors of Railroads, Canals, etc.

A Civil Engineer and Surveyor, who has been professionally engaged under the British Government, East India Company, etc., is desirous of obtaining employment as an Assistant. No objection to the South or West. Address for one month to C. E. & S., American Railroad Journal office.

August 16, 1851.

To Engineers.

A NEW WORK on the Marine Boilers of the United States, prepared from authentic drawings, and illustrated by 70 engravings, among which are those of the fastest and best steamers in the country, has just been published by B. H. Bartol, Engineer, and is for sale at the store of

D. APPLETON & CO.,

Broadway.

September 1, 1851.

CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by POWERS & WEIGHTMAN, manufacturing Chemists, Philadelphia.

Jan. 20, 1849.

European and North American Railway.

THE undersigned, the three persons first named in the first section of an act passed by the Legislature of Maine, and approved the twentieth day of August last past, entitled "An Act to incorporate the European and North American Railway Company," and being specially authorised therefor in and by said act, hereby give public notice that, for the purpose of receiving subscriptions to the stock of said company, as established by the act aforesaid, according to the provisions thereof, not exceeding forty thousand shares, books of subscription will be opened under the direction of the undersigned, according to the regulations prescribed, at the time and places following, viz:—On WEDNESDAY, the Twentieth day of August next,

At Calais, Maine, with Noah Smith, Jr., Esq.
Eastport, do. " Col. Bion Bradbury.
Machias, do. " Walker & O'Brien,
Ellsworth, do. " Seth Tisdale, Esq.
Oldtown, do. " Geo. P. Sewall, Esq.
Bangor, do. " Geo. W. Pickering, Esq.
Orono, do. " Hon. Israel Washburn, Jr.
Waterville, do. " Hon. Timothy Boutelle.
Brunswick, do. " Prof. William Smyth.
Augusta, do. " B. A. G. Fuller, Esq.
Belfast, do. " John Y. McClintock, Esq.
Portland, do. " John B. Brown, Esq.
Portsmouth, N.H. Hon. I. Goodwin.
Salem, Mass. Stephen A. Chase, Esq.
Boston, do. " Francis Skinner & Co.
Lowell, do. " John Wright, Esq.
Worcester, do. " Charles Washburn, Esq.
Providence, R.I. " Billings Brastow, Esq.
Hartford, Conn. " Hon. C. F. Pond.
New Haven, do. " Allen Prescott, Esq.
New York, N.Y. " R. & G. L. Schuyler, No
2 Hanover street.

Albany, do. " John V. L. Pruyn, Esq.
Troy, do. " Hon. John D. Willard.
Philadelphia, Pa. " Hon. Wm. C. Patterson.
Montreal, Canada, " Hon. John Young.
Quebec, do. " J. B. Forsyth, Esq.

Said books will remain open for ten successive days at the places and with the persons aforesaid. Dated at Portland, this sixteenth day of June, A. D. 1851.

ELIJAH L. HAMLIN,
ANSON G. CHANDLER,
JOHN A. POOR.

Trautwine on R. R. Curves.

By JOHN C. TRAUTWINE, Civil Engineer,
Philadelphia, Pa.

IN press, and will be published in a few days; accompanied by a Table of Natural Sines and Tangents to single minutes, by means of which all the necessary calculations may be performed in the field.

This little volume is intended as a field-book for assistants; and will be found extremely useful, as it contains full instructions, (with wood cuts) for laying out, and adjusting curves; with Tables of Angles, Ordinates, etc., for Curves varying from 13 miles, down to 146 feet Radius.

A portable Table of Natural Sines and Tangents to minutes, has for a long time been a desideratum among Engineers, independently of its use in laying out curves.

The volume is neatly got up in duodecimo; and handsomely bound in pocket-book form.

Sold by Wm. Hamilton, Actuary of the Franklin Institute, Philadelphia. Price \$1.

Also in press, and will be issued in a few weeks, "Trautwine's Method of Calculating Excavation and Embankment."

By this method, which is entirely new, (being now made known for the first time) the cubic contents are ascertained with great ease, and rapidly, by means of diagrams, and tables of level cuttings. Thin octavo; neatly half bound, \$1. For sale by Wm. Hamilton.

June 28, 1851.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway iron, at any port in the United States, at fixed prices and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

Railroad Lanterns.

COPPER and Iron Lanterns for Railroad Engines, fitted with heavy silver plated Parabolic Reflectors of the most approved construction, and Solar Argand Lamps; manufactured by

HENRY N. HOOPER & CO.,
No. 24 Commercial St. Boston.

August, 16, 1849.

6m33

Railroad Iron.

THE Subscribers, Agents for the Manufacturers, are prepared to contract for the delivery of Railroad iron at any port in the United States or Canada, or at a shipping port in Wales.

WAINWRIGHT & TAPPAN,
29 Central Wharf.

Boston, June 1, 1851.

Bowling Tire Bars.

40 Best Flange Bars 5½x2 inches, 11 feet long.
40 " " 5½x2 " 7 feet 8 in. long.
40 " Flat " 6x2 " 11 feet long.
40 " " 6x2 " 7 feet 8 in. long.

Now in store and for sale by

RAYMOND & FULLERTON,
45 Cliff street.

**To Railroad Companies,
Machinists, Car Man-
ufacturers, etc., etc.**

CHARLES T. GILBERT,
NO. 80 BROAD ST., NEW YORK,

IS prepared to contract for furnishing at manufacturer's prices—

Railroad iron,
Locomotive Engines,
Passenger and Freight Cars,
Car Wheels and Axles,
Chairs and Spikes.

Orders are invited; and all inquiries in relation to any of the above articles will receive immediate attention

Hufty's

**Engineers, Architects and Draftsmen's
STATIONERY EMPORIUM.**



WHATMAN'S Turkey Mill Drawing paper, Tracing paper, Plan and Profile, Protractors, Drawing Pins, Faber's, Jackson's and other makers' Pencils; Field, Level, and Memorandum Books of various patterns; Mathematical Instruments, Tape-lines, Mouth Glue, Cross Section paper, Triangles, Sabel Brushes, Gum Bands, Maiden Gum, Red Tape, Ink, Inkstands and Sand, Water Colors, Pallets, Patent Binders for letters, Portfolios, etc., together with a general assortment of Stationery and Blank Books. All goods packed with care, and forwarded to any part of the United States.

JOSEPH HUFTY,
Successor to H. L. Lipman,
139 Chestnut st., Philadelphia.

May 15, 1851.

**Virginia Locomotive and Car
Works.**

Wolfe Street and River Potomac, Alexandria, Va.
SMITH & PERKINS, Proprietors.

MANUFACTURE

Locomotive Engines and Tenders.
Marine and Stationary Engines and Boilers.
Chilled Car Wheels and Axles.
Patent Chilled and Wrought Slip-tire.
Machinery and Castings generally.

The undersigned having erected very extensive shops, and procured the most modern machinery and tools, are prepared to execute orders for Locomotive Engines, Cars, and Machinery of all kinds, with despatch, and on the most favorable terms.

R. C. SMITH,

Late of the Alexandria Iron Works.

THATCHER PERKINS,

Late Master of Machinery on the Balt. & O. R.R.
July 22, 1851.

THE Fourth Annual Exhibition of AMERICAN MANUFACTURES, by the MARYLAND INSTITUTE for the Promotion of the Mechanic Arts, will be opened in Baltimore on the 20th October, 1851.

The Exhibition will be held in the SPLENDID NEW HALL of the Institute, (fronting on Baltimore street) now being rapidly completed. Their edifice is centrally situated, chaste in its architecture, solid in its construction, and is by far the largest and most complete building in the United States, devoted to the Mechanic Arts. It may be added that this building is 355 feet long by 60 in breadth, with an average height of 68 feet, containing some twelve apartments, the largest of which is 255 feet by 60, and that the cost will be over \$70,000.

To this Exhibition, the Managers ask the attention of all engaged in industrial pursuits throughout the country, and cordially invite them to contribute specimens of their best productions for public inspection, and to compete for the prizes offered by the Institute. These prizes consist of GOLD and SILVER MEDALS, DIPLOMAS, etc., which were last year distributed as follows:—Gold Medals, 16; Silver ditto, 90; Diplomas, 60; besides 85 articles of Jewelry, etc., to ladies. Fair play will be scrupulously observed towards all, and every facility of Steam power, shafting, fixture, labor, &c., &c., will be amply provided free of expense. The machinery will be under a special superintendent, and a fine display of it is looked for. The last exhibition of the Institute was visited by more than 40,000 persons, and with their vastly improved accommodations and alterations, this number will be doubled at the coming display, embracing many Virginians, Pennsylvanians, and other strangers from the South and West.

Joshua Vansant, President.

Ed. Needles, } Vice Presidents.

F. A. Fisher, }

Samuel Sands, Rec. Sec'y.

Wm. Prescott Smith, Cor. Sec.

F. J. Clare, Treasurer.

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(The last nine in *Italics* are the Committee on Exhibition.)

The Hall will be opened for the reception of goods on MONDAY, 13th October; on the next Monday, 20th, at 7 P. M., the Exhibition will be formally opened to the public, and will positively close on Wednesday, 19th November. Articles for competition must be in the Hall by Thursday night, Oct. 16, unless delayed in shipment after starting in ample time.

Those who intend depositing, will give the Committee or the Agent, notice as early as possible, stating the nature of the goods, and probable amount of room required, to exhibit them to advantage

Circulars, containing a view of the new Hall and the full regulations of the Committee, with special information, if required, may be had promptly, by addressing the undersigned, or the Institute's Agent, J. S. Selby, Baltimore, *post-paid*.

ADAM DENMEAD,
Chairman Com. on Exhibition for 1851.

**SUPERIOR BLACK WRITING & COPYING
INK.**

Jones' Empire Ink.

87 Nassau st., Sun Building, New York city.

Net prices to the trade—

Quarts, per dozen,	\$1 50	6 oz. per dozen,	\$0 50
Pints,	1 00	4 " "	0 37½
8 ounces,	0 62½	2 " "	0 25

On draught per Gallon, 20 cents.

This is the best Ink manufactured. It flows freely, is a good copying ink, and will not mould, corrode, precipitate or decay. Orders for export, or home consumption, carefully and promptly attended to by

21tf

THEODORE LENT.

To Railroad Companies, etc.

The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

I also invite attention to an improved PATENT SPRING LOCK, for SLIDING Doors to Freight and Baggage Cars, now in use upon the Pennsylvania Central, Greenville and Columbia, S.C., Reading, Pa., and other Railroads.

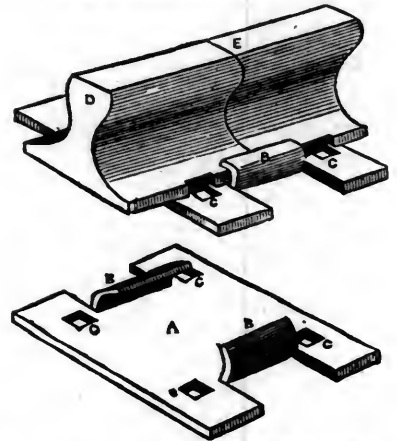
Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH,

46 South 8th St. Philadelphia.

May 9, 1851.

**The American Railroad Chair
Manufacturing Co.**



ARE prepared to make WROUGHT IRON RAIL ROAD CHAIRS, of various sizes, at short notice.

By use of the WROUGHT IRON CHAIR, the necessity of the wedge is entirely done away—the lips of the chair being set, by means of a sledge or hammer, close and firmly to the flange of the rail.

The less thickness of metal necessary in the Wrought Iron Chair gives much greater power and force to the spikes when driven—and consequently a much less liability to the spreading of the rails by reason of the spikes drawing or becoming bent.

The less weight necessary in the Wrought Iron Chair, will enable us to furnish them at a cost much below that of CAST IRON CHAIRS.

DESCRIPTION OF THE ABOVE CUTS.

Figure 1 is a perspective view of the rail secured in the chair, and fig. 2 is a perspective view of the chair itself. D, E, are sections of two rails placed together, and secured at the joint on the chair by the jaws B, B. The chair is bolted down by spikes C, C. In fig. 2, the chair is represented as made of a single block or plate A of wrought iron.

The chair is set in its proper place on the track, spiked down, and the ends of the two rails brought together within the jaws as represented in fig. 1.

For further information address,

N. C. TROWERIDGE, Secretary,
Poughkeepsie, N. Y.

June 1, 1851.

Railroad Commission Agency.

THE Subscriber offers his services to Railroad Co's and Car Makers for the purchase of equipment and furniture of roads and depots and all articles and materials required in the construction of cars, with cash or approved credit. No effort will be spared to select the best articles at the lowest market price.

He is sole Agent for the manufacture of the ENAMELED CAR LININGS, now in universal use. The best Artists are employed in designing new styles, and he will make to order pieces with appropriate designs for every part of the car, in all colors, or with silver grounds and bronzed or velvet figures.

He is also Agent for Page's Car Window Sash Fasteners, which is preferred by all who have used it to any other.

CHARLES STODDER,
75 Kilby st., Boston.

June 20, 1851.

3m.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 136 NASSAU ST., NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.
SECOND QUARTO SERIES, VOL. VII, No. 41! SATURDAY, OCTOBER 11, 1851 [WHOLE No. 808, VOL. XXIV.]

ASSISTANT EDITORS,

J. T. HODGE, *For Mining and Metallurgy.*
GEN. CHAS. T. JAMES, *For Manufactures and the Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & Co., 136 NASSAU ST.

Saturday, October 11, 1851.

Railways in British North America.

Continuing the narration of events, concerning railroads in British North America, we give the substance of the reply of Mr. Howe to the note of Mr. Archibald, published in the Journal of the 27th ult.

TO CHARLES D. ARCHIBALD, Esq.

Dear Sir:—I have read the letter addressed by you to the people of Nova Scotia, a copy of which you enclosed to me this morning. Having survived the period when contention with enemies was a luxury, you may believe that to be compelled to criticise the conduct and views of a friend is sufficiently painful. The great interests of Nova Scotia—it may be of North America, enjoin upon me a task which if my own interests or feelings were alone involved, would be good humoredly put aside.

Down to the very moment when Mr. Howe's letter was put into your hand there was no friend in England more skeptical of my success, and again and again you urged me to enter into contracts with Mr. Hemmett to do the work, and with

the Commercial Bank to sell Nova Scotia's unguaranteed debentures for what they would bring.

Had your propositions been ever so advantageous, it is clear that there was nothing definite or tangible in them upon which the three Governments could act; we therefore, proceeded to act upon what was tangible—on Mr. Hawe's letter, and on the following day arranged that scheme of policy which Canada has since clothed with Legislative sanction, and to which the Executive Councils of New Brunswick and Nova Scotia, at this moment stand pledged.

My present belief is, that that policy will be ratified by the Legislatures of the Lower Provinces. If anything prevents this, it will be your interference, the publication of your letters, and the new elements of strife and distraction which you appear disposed to furnish.

You state that I have said of your plan that it had not the "merit of originality." I said this of a plan which Mr. Johnston attributed to you, but for which he had no foundation, and which is not to be found in your memorandum, or in your published letter.

You say that the seven millions of Sovereigns are not in "a bag." But you know that they are as secure as if they were. The honor of the British Government, backed by the honor of the leader of British opposition, is pledged that they shall be produced, on certain conditions. Canada, has complied with the conditions required to entitle her to four millions of them. Nova Scotia and New Brunswick will entitle themselves to the other three, if the cupidity of speculators across the water is not thrown in to give fresh animation to the "party jealousies and influences" which you seem to deplore. In New Brunswick these have been, up to this moment, skillfully and wisely controlled. In Nova Scotia, you will see, before long, however, our party battles may be fought with the energy and ardour incident to free institutions, that whatever policy may be finally arranged by the three Provinces, will be carried in a style that will reflect honor and distinction upon our common country.

You invite me to "state the objections I entertain to your proposals," which you think are not derogatory "to the honor and interests of New Brunswick." I will do so frankly.

In the first place you assume that a noble Province like New Brunswick, with a territory as large as Massachusetts, Vermont, New Hampshire, New Jersey, and Rhode Island, put together—with a free Government, responsible to her citizens—with an industrious population, a flourishing revenue, light taxes, and overcrowded Europe to draw upon for a steady stream of emigration, cannot with the sympathy and co-operation of her sister Colonies and the credit of the Imperial Government at her back, hazard the construction of public works, which you and your friends will yet cheerfully construct, provided you are invested with one-se-

venth part of her territory—half a million of her money and provided the other Provinces give you the construction of their Railways.

Now, I am simple enough to believe that this proposition includes a flagrant disregard of the intelligence, and an insult to the dignity of New Brunswick.

Put all your friends together—unite their entire fortunes and resources, and as our neighbors quaintly say they could not "begin to buy" the homestead of New Brunswick. They could not purchase the property upon a single river. Yet we are told that the people who own the whole cannot risk the construction of these railways which can easily be accomplished by those whose resources are insignificant in comparison.

But does any body suppose that the Company you desire to form, are going to make these railroads from pure love of North America? Does any body believe that if money was to be lost, you would make them at all?—Fond as you are of "digging," would you strike a pick into the soil if there was not "metal more attractive" to be dug up, than even the ores in the Folly Mountain?

The Company must make a profit then and have a moral certainty that it will be sure and ample. Now out of what will this profit be made?

1st. From the expenditure of half a million of money to be given by New Brunswick.

2d. From a bonus of £20,000 sterling per annum, for twenty years, to be given by New Brunswick.

3d. From the expenditure of £5,100,000 to be given by Canada.

4th. From the expenditure of £1,000,000 of money to be given by Nova Scotia.

5th. From five millions of acres of land to be granted to the Company.

6th. From the tolls and revenues of the two great roads, passing through New Brunswick in all time to come.

Out of some or all of these resources, then, you expect your friends to be insured against risk, and to be remunerated for their outlay.

You are to have the expenditure of £5,000,000 to be raised on the credit of the Colonies, without competition. You are to have a bonus of £20,000 per annum from New Brunswick, for twenty years, equal to £400,000. You are to have 5,000,000 of acres of lands, worth at 5s. an acre £1,250,000, and you are to have the revenues of the two roads through New Brunswick; and 5 per cent on the Upper Canada lines, before the municipalities, which are to furnish a portion of the funds, receive a shilling. Assuming 20 per cent. to be the profit derived from the expenditure of money raised on Colonial credit, it would amount to £1,120,000. Let us sum up these items.

Lands.....	£1,250,000
Profits.....	1,120,000
Bonus.....	400,000

£2,770,000

The 400 miles through New Brunswick will cost, if due regard is paid economy, not more than £2,500,000 currency. New Brunswick is to contribute £500,000 and all the tolls of the two roads forever, are to be paid. *The Portland line, it is admitted on all hands will pay six per cent. whenever opened. It involves no risk. In less than ten years it will pay 10 per cent.* The central line, in a few years, will cease to be burdensome. Of both, you say, in your letter to the Governor General. An "enormous traffic awaits those lines, but who" can form a notion of the proportions to which it may expand within the next ten or twenty years? If your anticipations are well founded, surely your proposals, however well intended, are based upon a very low estimate of the sagacity of those to whom they are addressed.

But I have another objection to your scheme. It is this—that Canada and Nova Scotia would pay indirectly, for the relief of New Brunswick, or rather to swell the profits of the Company, a larger amount than they agreed to risk by the arrangement made at Toronto. Besides, place a private Company in the heart of New Brunswick, to manage the central portions of the lines which at the two extremities are owned by Provincial Governments, the unity of the whole design, and the simplicity of the arrangements, would be broken up, and questions would arise every day for controversy, perhaps for litigation.

My last objection touches higher interests than pounds, shillings and pence. Show me the State or Province that ever willingly granted five millions of its territory, with all its mines, minerals and appurtenances to a private association. Nova Scotia would not make such a grant if she never had a railroad. The man who proposed it would sit alone in our Assembly. New Brunswick may be less particular, but such a grant once made, to any association, with all the patronage, expenditure, and revenues of her two great roads, and a power would be created in her midst that would very soon control both her government and the Legislature.

These are the objections which I conscientiously entertain to your scheme, and if they have not been stated with the skill to give them force, they have been explained, I trust, with the courtesy and moderation with which any proposition of yours ought to be disposed by yours truly,

JOSEPH HOWE.

Sept. 12, 1851.

Mr. Archibald replies to Mr. Howe under date of September 17th, and in a somewhat tart manner rebukes Mr. Howe for speaking of him as having "interfered" in this matter, which was one of public concern, and common alike to all the people of Nova Scotia.

Mr. Archibald shows very conclusively, that the policy of carrying out the system of railways for British North America by "private" companies, instead of by the agency of the government, has had the sanction of all the leading men in the several colonies. We quote the following paragraphs from Mr. Archibald's note, not having space to give more:

It would take up too much time and not be attended with much profit if I were to follow you through your exaggerated calculations based upon mere conjecture and assumption I therefore let them pass for what they may be worth and proceed to your last and most profound objection. It is not necessary to search far into the history of ancient or modern times "to find the State or Province that ever willingly granted millions of acres of its territories to a private association." New Brunswick is the country with which we have to deal and the one that I design to show you. The Facility Bill passed on the 30th April 1851, gives "to the European and North American Railway Company the ungranted Crown Lands within five miles on each side of the line of railway." But this is not all; in 1849 an able report from the Committee on Railways was laid before the House of Assembly of New Brunswick, in which it is recommended that the following order be made:—"To secure to the Government, or to the Company that may construct the line (the Halifax and Quebec) the ungranted

lands to the extent of ten miles on each side, &c.," and the House following up this report, in a dutiful address to the Queen, says "we have already afforded the best possible proof of our own sincerity, by pledging ourselves to grant a sum of £20,000 a year for 20 years, together with at least two million acres of superior land, available for settlement and colonization."

But I am not yet done with the problem you have given me to solve. New Brunswick is not the only country that has contemplated the surrender of large portions of her territory to a private association. The distinguished Canadian Statesman, so often referred to of late as the master spirit of North America, in the Session of 1849, introduced a series of resolutions, among which I find the following: That if Her Majesty's Government shall undertake the construction of the railway between Halifax and Quebec either directly or through the instrumentality of a private company, it is right that Canada should undertake to pay yearly £20,000 sterling towards the deficiency to meet the interest (which is before fixed at 6 per cent.) and should place at the disposal of the Imperial Government all the ungranted lands within the Province, lying on the line of the railway, to the extent of ten miles on each side thereof, &c. Nova Scotia too, has made a like offer of money and lands, and I will suppose that the British Government, tired of delays and negotiations, or for other good reasons, should at length decide to accept these offers of the several Provinces; will any one contend or pretend that it would not be competent for the Imperial Government to enter into arrangements with a private Company or Association to undertake the whole work on their own account, and, as a part of the consideration, to transfer to them these lands so placed at their disposal?

On the 20th of September, Mr. Archibald appeared at St. John, invited a meeting of the incorporators, named in the charter of the European and North American Railroad, granted by New Brunswick, and offered to subscribe such an amount of stock as would be sufficient to organise the Company. Twenty thousand pounds were taken by other parties on the spot, and the balance, Eighty thousand pounds, by Mr. Archibald for himself and friends. The capitalists represented by him were S. M. Peto, M. P. for Norwich, W. Jackson, Esq., M. P. for Newcastle, Mr. Betts and others. The deposit was made forthwith according to the terms of the charter, and the following notice issued, calling the meeting for organisation as follows:—

NOTICE.

The European and North American Railway Company.

WHEREAS, one hundred thousand pounds of the capital stock of the European and North American Railway Company has been duly subscribed, and a deposit of five shillings per share has been actually paid on the said amount so subscribed, into the Commercial Bank of New Brunswick, I; Daniel J. McLaughlin, President of the said Bank, do by virtue of the power and authority in me vested in and by the Act of Incorporation of said Company, hereby call a general Meeting of the Shareholders of said Company, to be held in the Commercial Bank Building in the City of Saint John, on Saturday, the 25th day of October next, at 12 o'clock, noon, in order to organise the said Company, make bye-laws and to choose the Directors thereof, of all which all persons will take due notice.

Given under my hand at the City of Saint John, this 23d day of September, A. D. 1851.

Sept. 24.

D. J. McLAUGHLIN.

The charter of the European and North American Railroad, in New Brunswick, is one of the most liberal ever granted by any Legislative body. It received the Royal assent under such circumstances as to give unusual significance to the course of Legislative proceedings in the British colonies. We give below the Despatch of Earl Grey, and the comments of the English Railway Commissioners, which will interest all our readers.

Downing Street, 12th June, 1851.

SIR,—I have to acknowledge the receipt of your Despatch No. 16, of the 7th April, transmitting certified copies of 3 Acts passed by the Legislature of New Brunswick in its last session, intitled respectively "An Act to incorporate the European and North American Railway Company,—(2061); and an Act to facilitate the construction of the European and North American Railway (2062); and an Act to facilitate the construction of a Railway from St. Andrews to Quebec.—(2063.)"

Although it would appear that the most important of these Acts (that numbered 2061) is in some respects defective, I do not consider it necessary to recommend its disallowance on account of the imperfections pointed out by the Commissioners. I trust without doing so, and thus delaying the commencement of the work, a sufficient opportunity for reconsidering the subject will be secured to the Legislature of New Brunswick, by my deferring to submit the Act numbered 2062 for Her Majesty's confirmation. By this Act it is proposed that pecuniary assistance from the Colonial Treasury, to a very considerable amount should be given to the Company to enable them to construct the proposed Railway. To this I have no objection—on the contrary, I believe that in the present state of New Brunswick, it is consistent with sound policy that assistance should be given by the public towards the construction of the great leading lines of Railways; and the particular line now suggested for encouragement is one which I think deserves it, for though it appears to me one of less importance than the projected line from Halifax to Quebec, I regard it as not being calculated at all to interfere with the latter [if properly regulated,] but on the contrary, to contribute to its success. But while I am prepared to advise that Her Majesty's sanction should be given to a measure for affording assistance to this line on the principle proposed by the Act now under my consideration, I consider it inexpedient that this should be done until the Legislature shall have an opportunity of reconsidering the Act No. 2061, and that the proposed assistance to the Company should only be granted on condition of its assenting to such amendments of this Act as may then be found advisable. I trust that the Legislature will carefully consider all the remarks of the Commissioners, as I consider them to be of much importance, and I fear that the interests of the Province may hereafter be exposed to serious injury if the amendments in the Act which are suggested are not now made; but there are only two of these amendments on which as affecting the interests of the Empire at large, as distinguished from those of the Province alone, I consider it necessary to insist before Her Majesty can be advised to sanction the grant of pecuniary assistance to the Company. The two amendments which I consider to be indispensable are those pointed out by the Commissioners as being required to secure the use on fair terms for the traffic between Halifax and Quebec, of that part of the line of Railway now proposed to be constructed which will be common to the two lines, and secondly the conveyance of Her Majesty's Troops and stores for their use, along the line at reasonable rates of charge.

I am not yet enabled to express a positive opinion whether the Act No. 2063 ought to be confirmed: this question is still under consideration, but I hope to have it in my power to inform you by an early opportunity what decision may be adopted with respect to it.

In conformity with what I have now stated, the Act No. 2061 will be submitted to Her Majesty on the first opportunity, in order that it may be left to its operation. The Acts Nos. 2062 and 2063 will not be laid before the Queen for the present.

I am, &c.

[Signed]

GREY.

[EXTRACT.]

*Office of Commissioners of Railways, }
Whitehall, 2nd June, 1851. }*

SIR,—I am directed by the Commissioners of Railways to acknowledge the receipt of your letter of the 24th ultimo, enclosing copies of three Acts, passed by the Legislature of New Brunswick, entitled respectively—No. 2061, "An Act to incorporate the European and North American Railway

Company." No. 2062, "An Act to facilitate the construction of the European and North American Railway"—and No. 2063, "An act to facilitate the construction of a Railway from St. Andrews to Quebec"—and I am to acquaint you in reply for the information of Earl Grey, that agreeably to His Lordships request, the Commissioners have taken these Acts into their consideration, and have made the following observations upon their provisions.

By the Act No. 2061, it is proposed to incorporate a Company for the purpose of making a Railway, which in section 3 is described as "A Railway to run from some point or place from the Eastern boundary of the Province of New Brunswick in the Co. of Westmoreland so as the best to connect with a Railway to be constructed from the City of Halifax, or some other port on the Eastern coast of the Province of Nova Scotia, on the Atlantic Ocean, over the most practicable route through the Province of New Brunswick, so as the best to connect with a Railway to be constructed from the City of Bangor, in the United States of America, to the Eastern part of the State of Maine."

It appears probable that the direction of a considerable portion of this line, near the Eastern Boundary of New Brunswick, will coincide with that of the projected line from Halifax to Quebec, the construction of which has already engaged the attention of Earl Grey as an undertaking calculated to promote the interests both of the Colonies and of the Mother Country, and therefore entitled to encouragement and assistance on the part of H. M. Government. It appears from Mr. Hawes' letter to Mr. Howe of the 10th March, 1851, that one of the conditions of affording that assistance would be, the proposed Railway should be an entire line from Halifax to Quebec, passing wholly through British territory, but it would not be considered an objection to the plan, that it included a provision for establishing a communication between the Railway and the Railways of the United States. The above mentioned portion of the Railway proposed in the present Act might therefore form part of the main line of the Halifax and Quebec Railway; and as it would be expedient that the whole of that line should be under the same management, the Commissioners suggest that it might be advisable to stipulate with the Company incorporated by this Act, that in the event of arrangement being made for the construction of the Railway from Halifax to Quebec through this part of the Province of New Brunswick, it should be obligatory on the Company to transfer the common portion of the line to the parties entrusted with the construction of the Halifax and Quebec Railway, or a sum equivalent to the outlay incurred by the Company in making that portion of the line; and with this view, that the accounts relative to its construction should be kept in such a manner as to afford the means of apportioning the outlay accordingly.

The Commissioners proceed to consider certain provisions of this Act, which appear to them to call for remark.

In the 1st section, provision is made for submitting the Company's bye-laws to the Governor of the Province for his approval, but no power is reserved [as in the Imperial Act for the regulation of Railways, 3 and 4 Vict., c. 97., s. 9.] of disallowing the bye-laws at any future time after they shall have come into operation—and this power appears to be necessary for the completeness of the control over the bye-laws intended to be vested in the Governor, who would otherwise have no cause of suspending the operation of a bye-law that was found to be objectionable.

By section 5, the Directors are authorized until the Railway is completed, to pay interest to the Shareholders on the amount of the calls paid up by them. In former reports on New Brunswick Railway Acts, containing a similar provision, the Commissioners took occasion to observe that provisions of this kind were frequently at one time inserted in English Railway Acts, but in the Session of 1847 a Resolution was passed by both Houses of Parliament, [which has been since adopted as a standing order,] requiring the insertion in every Railway Bill of a clause prohibiting the payment of interest out of capital, and it might therefore be worthy of consideration whether the reasons that led to that Resolution were equally applicable to the Colony.

By Section 28, it is provided that the Act shall not be revoked, altered or amended, without the consent of the Company. This is inconsistent with the first recommendation in Mr. Secretary Gladstone's Circular Despatch, of the 15 January, 1846, and the clause there referred to as proper to be inserted in all Colonial Railway Acts—viz: "That nothing herein contained shall be construed to except the Railway by this Act, authorized to be made from the provisions of any general Act relating to Railways which may be passed during the present, or any future Session of Parliament." A clause of this kind is invariably inserted in English Railway Acts.

Section 38, after providing for the level crossings of Roads, authorizes the Company "If they deem it more conducive to the public safety to substitute a bridge over or under the Railway for the level crossing."

The Commissioners would suggest that a matter of so much importance to the public should not be left entirely to the discretion of the Company, but that power should be reserved to the Governor of the Province, or some other public officer, requiring the Company to make the alterations which the increase of traffic on the roads arising from that on the Railway may hereafter render necessary, although at present, a level crossing may be allowed without danger.

Section 55 gives the Company the power of levying tolls for the conveyance of passengers and goods. But the Act does not provide any scale of maximum charges for such conveyance. And this defect does not appear to be remedied by the power of revising the tolls and the option of purchasing the Railway reserved to the Government by the 55th and 57th Sections.

The exercise of those powers is dependent upon the event of the Company's profit exceeding a certain rate per cent. on their capital. In former communications addressed to the Colonial Office, the Commissioners have stated that although such provisions may have been introduced into Colonial Railway Acts for the purpose of thus intimating the possibility of future revision and purchase, yet, in their opinion, it may be questionable whether they can have any other practical effect.

The provisions in Section 61, with respect to the conveyance of Troops, appear to be defective in not specifying the terms and conditions of conveyance, as provided by the corresponding enactments of the Imperial Act 7 and 8 Vict.: c. 85, s. 12.

The 59th section adopts the provisions of the 13th Section of the Imperial Act 7 and 8 Vict.: c. 85 with regard to the power of the Government to establish a line of Electrical Telegraph on the Railway; but does not contain any clause similar to the 14th Section of that Act, for providing that the Telegraph subject to the prior right of use by the Government, shall be open to all persons, without favor or preference and at equal charges.

In the absence of any general Legislation on the subject of Railways in this Colony, it is necessary that every New Brunswick Railway Act should comprise within itself the whole of the provisions that may be considered requisite for the protection of the public interests. Provisions is made by the present Act for the conveyance of Mails and Troops, for laying down an Electrical Telegraph on the line of the Railway, and for making returns of traffic and accidents. But of the other matters which in this Country have been made the subject of general legislation with a view to the public safety and convenience, the Commissioners would particularly observe that the Act does not contain any provisions similar to those of the Imperial Acts relating to cheap Trains, the appointment of Inspectors, and the opening of the Railway after notice and inspection, and the construction of Bridges and Roads.

The Commissioners are desirous to draw the attention of Lord Grey to these variations from the course pursued in legislating upon Railways in the Country, leaving it as a matter entirely for His Lordship's consideration what degree of importance is to be attached to them, with reference to the local circumstances of the Colony, and whether any correction may be called for in the way of supplementary legislation.

(Signed,)

J. L. SIMONDS,
Captain Royal Engineers.

Notwithstanding the objections to the charter as pointed out by Earl Grey, the bill received the Royal assent, while the Facility Bill is withheld till after the meeting of the New Brunswick Legislature.

The two amendments pointed out by Earl Grey, as *indispensible* to secure the Royal assent to the Facility Bill, will undoubtedly be readily acceded to by the company.

If the proceedings in New Brunswick should serve as a guide for the action of Nova Scotia, the European and North American railroad will be built without delay. The policy proposed by the conservative party, as indicated by the Hon. Mr. Johnstone, is in accordance with the decision of the Portland Convention; while Mr. Howe's scheme proposes to make both the Quebec and Portland lines as "government works"—to be built, owned and operated by the government; the colony receiving the endorsement of the Imperial government upon its bonds issued for building the same.

The struggle between these two rival schemes in Nova Scotia, is now attracting the attention of the whole country; and from the indications in the papers of both parties, all feel that there are still great doubts existing as to the result.

The Hon. Mr. Howe addressed a very large assemblage at Portland last week, by invitation of the friends of the European and North American railroad, on the subject of railway improvement in the British Provinces. The Portland Advertiser, in speaking of Mr. Howe's speech, says of him: "Referring to the Portland Convention of 1850, and to the European and North American railway, he declared that this great object had, and still has, his hearty approval. He traced very clearly, the line of calculation and policy, which had induced him to seek the aid of the Imperial government for this purpose, and which had resulted in securing guarantees from that government; both for this line, and for the one of more immediate interest for the colonies, from Halifax to Quebec. By these means he believed that both could be, and would be constructed."

We have so often spoken against the policy of allowing states or governments to embark directly in the construction of railways, that we are not inclined in our present issue to enlarge upon the question, in relation to colonial enterprise. But it strikes us that Mr. Howe, in his last letter to Mr. Archibald, has yielded the whole ground to his opponents.

The ground, on which he attempted to justify his policy in regard to the European and North American railroad, was the want of ability on the part of the people of the colonies to raise the necessary funds for its completion. Now, every business man knows, that a money question is a question of security only. Money is plenty or scarce in proportion to the value and abundance of the security offered, or the want of it. Show a business community that a railroad will pay *six per cent.*, and you will have the money offered for it as soon as it is wanted. This, Mr. Howe and every railroad man will admit.

Mr. Howe, in his last letter to Mr. Archibald, says that "the Portland line will pay *six per cent* as soon as completed, and *ten per cent* in ten years time." If this is his opinion, and if this opinion is a correct one, why should he embarrass the question with government interference. Whatever may be the confidence felt in European countries, in the ability of a government to construct and manage railways and public works of a similar character,

that feeling of confidence is not felt in England, nor on this continent. The British government have assisted railways in some instances, by a loan of credit; and a similar policy has been adopted in Massachusetts, and other of the States of the American Union. Private enterprise having laid the foundation of a substantial credit, the government has loaned its assistance on the strength of this private security. A policy such as this, when prudently exercised, has always been successful. A most lamentable history of disasters has followed every instance, under our government, where a policy such as Mr. Howe advocates, has been attempted. The repudiation of Illinois, and other States, which have been imprudently led into specious and attractive schemes of government railroads, is too fresh in mind to need our repeating its history in the way of caution.

Railways in British North America.

Our columns are again largely occupied with the subject of railways in British North America. No one of our readers will regret the space we have given to these matters, which are daily attracting more and more the railway interests of Europe and America. We give the following extracts from our recent English exchanges to show the feeling in Great Britain in reference to this subject:—

From the London Morning Chronicle.

BRITISH NORTH AMERICA.

By the recent advices received from the British North American Provinces, it appears now certain that the proposed railroad communication between Halifax and Quebec will be carried out, and that the Legislatures of the several provinces will make the necessary arrangements for raising the required capital under the imperial guarantee of 3½ per cent. For the construction of these lines, proposals have been made by contractors of the first eminence in Great Britain, who are prepared to make one or all of the lines required in the several provinces in any time that may be stipulated for, and upon such terms as may be fixed by the government or colonial engineers. Here, then, will be an investment of seven millions sterling open to capitalists—an investment to be guaranteed by our own government, at an interest of 3½ per cent., and the money to be expended in our own colonies, under the superintendence of British authorities, affording a security which has no equal except in the national stock of Great Britain. Surely the dear-bought experience which our capitalists have obtained in their loan transactions with foreign governments, will induce them to prefer an interest of 3½ per cent., secured to them at home, to the doubtful investments of 5 per cent. which have, and probably will again be, presented to them from abroad, in the shape of loans for various purposes, the integrity of which must depend, not only upon the good faith of the governments actually negotiating them, but upon their maintenance of the power by which they are enabled to contract such obligations—a result which, in the present state of Europe, is anything but certain. Neither should it be forgotten that every undertaking by which the mother country contributes to the development and importance of her colonies, adds so much strength to the national interests, not only by the profitable increase of commercial intercourse, but by the resources which such colonies, especially those of North America, will furnish in the event of any interruption to our intercourse with those nations of Europe or America from which we now draw many of those supplies which are indispensable to the maintenance of our naval power; in reference to which it is also worthy of observation that Nova Scotia and New Brunswick possess harbors which for capacity and security are unrivalled by any others on the coast of America—a most important advantage at all times, but especially so at this moment, when the Americans are putting forth their utmost to compete with our ocean steamers, and

to secure by shorter passages a monopoly of passengers across the Atlantic. The construction of the proposed railroad across Nova Scotia and New Brunswick will, however, give a new aspect to this rivalry; their boats must start from and return to Halifax, or the competition will be at an end. A rivalry honorable to both nations may still continue, but however the odds may turn, it is satisfactory to know that the interests of these important colonies will be efficiently served. The British government now pays for the conveyance of the North American mails between England and New York, £145,000 sterling per annum. By this arrangement 1,107 miles of sea are traversed more than are necessary. This will be obviated by the proposed railroads, and the correspondence of all Europe with all America, will be accelerated by 48 hours—a saving of one-fifth in the time now occupied in the transmission of letters between Liverpool and New York. That this enterprise is calculated to greatly extend and advance the commercial interests both of the British provinces in North America and of the mother country, cannot be doubted, and it is earnestly to be hoped that the capitalists of Great Britain will be found willing to co-operate in the promotion of a national object which affords them a secure investment for their money in her Majesty's dominions.

It will be perceived by the foregoing quotation that the whole idea turns upon the question of carrying out the plan of the European and North American railway, by "the construction of the proposed railway across Nova Scotia and New Brunswick," which is the principal, and the line to Quebec an incident, instead of making the Quebec line the prominent idea, and the European and North American railroad as a secondary affair.

In connection with this, the following paragraph on the same subject presents in a clear light the views we entertain in relation to ocean steam navigation, which is closely akin to the railway question under consideration:—

From the London Daily News, August 27.

Steam Communication between Ireland and America.

The friends of steam communication between Ireland and America seem to have hit upon the right way at last of fairly trying the great experiment they advocate. Instead of wasting time in vague declamation regarding the possible or probable advantages held forth by the scheme, and venting their ill-humor against the recent report of the Packet Station Commissioners, they appear to have resolved upon turning themselves at once into one or more joint-stock companies for the purpose of running lines of steamers from Galway or Cork, if not from both these ports to Halifax.

There has lately been a disposition manifested by several citizens of the United States, possessing more or less influence in their own country, to advocate the adoption of what are termed experimental trips by the American mail packets which now sail from New York to Liverpool, in order to test the practicability of bringing letters and passengers in a shorter time to London via Galway and Holyhead than is now consumed in the longer sea-route. We are by no means certain, however, that any important inference could be drawn from the most favorable result of such trials. The question to be solved is not whether the voyage from New York to Galway can be made in so many hours less than from Halifax to Liverpool, and whether the gain of time so attainable would compensate for the additional trouble of crossing Ireland by railway, and taking ship again to pass the Channel—but simply what is the shortest and surest transit from the westernmost shore of one hemisphere to the easternmost coast of the other. In the solution of this question the inhabitants of two continents are interested. All considerations of minor engagement and detail are, comparatively speaking, of little moment. Let it once be clearly and satisfactorily made out that intelligence can be brought, all the year round, twenty-four hours sooner from Washington on to Paris by a particular route, and by that route the intelligence will assuredly come, the arguments and palaverings of all public com-

missioners and private companies to the contrary notwithstanding.

We do not wish to be understood as merely implying that were a line of fast sailing steamers established to-morrow between an Irish port and one in Nova Scotia, the commercial intercourse of Lancashire with New York would necessarily be changed. In the main we believe that it would not. For goods traffic, the superior quality and cheapness of direct shipment must always be a governing construction; and for the great mass of travellers for business, with whom convenience is quite as important a matter as speed, many advantages will always be presented by a line of packets like those of Messrs. Cunard. On the other hand, if it be true as we have seen stated, and not, that we are aware, authoritatively denied, that the last named gentleman not very long ago offered to put a certain number of vessels on the Irish station in order to satisfy the demands to obviate the chance of competition by an Irish company, it may be assumed that there is probably a portion of their customers who they apprehend would avail themselves of the projected line in preference to theirs, were they enabled to do so. But we are fully convinced that the bulk of the remunerative traffic would arise from wholly different quarters.

A few of the wealthier and more impatient orders of society might, and probably would prefer the minimum of sea route. Travellers for pleasure might in summer choose in like manner to have a look at Ireland and New Brunswick, and in winter to be exposed to the fewest possible number of nights on the ocean. But the main support of such a line must be found in the middle and artisan classes, who now cannot dream of a voyage across the Atlantic in any other than a sailing vessel, and in less than three weeks or a month. Nineteen out of twenty men, women, and children, who year after year cross the mighty deep, are compelled to submit, some to the discomforts, others to the horrors, of such a passage. Yet these are emphatically the classes who can worst afford to lose time and health on shipboard. The emigrant agriculturist and artisan, who now pays from £5 to £10 each for miserable accommodation, and the fearful hazard of finding themselves at the end of a tedious voyage disabled from exertion, just when exertion is most required—these would hail with delight the opening of a bridge sufficiently broad to accommodate first-class tourists at £15 a head, and third class at £7. The poor man would save far more than the additional outlay by the improved mode of transport, in mere money; but in safety, time, and health, he would be a clear gainer. It is notorious that the large majority, of emigrants to British North America and the States, are from the sister country. This, therefore, forms an additional reason why the point of departure should be there, and not at an English port. But this is not all. With the inducement of expeditious, safe, and cheap communication, there cannot be a doubt that a considerable stream would soon get in the opposite way. Rapid and economical means of access is taken to quick and cheap means of intercourse by letter. What would be created and developed by the change would far exceed that which it tended to improve and facilitate merely; and it is our faith in this portion of the experiment more than any other that makes us glad to see our fellow countrymen in Ireland determining to do for themselves in this important matter.

The question may be asked how is it easier to make a sea-train containing first, second and third class accommodation, in suitable proportions—with a terminus at Galway instead of Liverpool? The answer is simple, and clear. Every hour saved on a long voyage, makes available a space otherwise necessary for fuel, which cannot otherwise be gained. The room thus obtained in a first-rate steamer, by shortening the voyage some twenty or thirty hours, obviously presents the facility for enlarging greatly the third cabin accommodation. The calculations on the subject are fully given in the evidence taken before Lord Granville's commission. We shall perhaps find an early opportunity for recurring to them.

In our treatment of the great questions which are in issue in British North America, we have opposed the views of Mr. Howe upon commercial

grounds alone. We have treated railway questions in the British Provinces, and the public men of the country, without any reference to political or personal relations.

We have frankly expressed our belief, that the plan of Earl Grey, as expounded by Mr. Howe, would be assented to by the Provinces, and that the line to Quebec would be built, or at any rate undertaken, and the work be commenced. And if the British government choose to build it as an Imperial measure, we should rejoice to see it completed. But if so undertaken and carried out, it will be a monument of imperial grandeur, not unlike the Chinese Wall of a former age. The idea is wanting in humanity, in popular favor, or commercial necessity. Still we cannot but admire the audacity of the men who, in spite of all these difficulties, have given to it so much of importance, and of popular *clat*. We shall refer to it again at an early day.

Improvements in Furnaces.

Mr. G. F. Muntz, jun., of Birmingham, England, has just patented some improvements in furnaces applicable to the meltings of metals for making brass, yellow metal, and other compound metals. Mr. Muntz's invention has for its object the prevention of the loss from volatilization which occurs when melting and mixing metals (especially when zinc is employed) for the manufacture of brass and other similar compound metals, and consists in the adaptation to the melting furnaces of the two additional dampers, one in the bridge of the furnace, to shut off the communication between the fire and the metal; and the second between the melting-pot and the chimney. There is also an additional flue (provided with a damper,) between the fire and the chimney, for carrying off the smoke and products of combustion when the bridge damper is closed. The mixing operation will be thus performed in a close chamber, and the loss from volatilization much lessened, if not entirely prevented.—*Claim*: The construction of furnaces for melting and mixing metals, for making brass and other compound metals, in which zinc forms a part, which will allow such metals when melted, and whilst being mixed, to be confined or nearly so, from the air, by the furnace being converted into a close chamber, thereby preventing a great deal of the loss which occurred from volatilization in mixing such metals in the furnace in use for this purpose previous to the date of this invention.

Steam Carriages on Common Roads.

A numerous meeting has been held at the Guildhall, Bath, England, for the purpose of hearing Messrs. Motley and Clarke give explanations of the details and presumed improvements and advantages of their patent steam carriage for common roads. Mr. E. Saunders took the chair, and after a short introduction by Mr. Motley, Mr. Clarke described the machinery by the aid of models and diagrams. They propose to place the machinery in one carriage, called a steam-dray, and the passengers in another, attached. Their boiler weighs only one cwt. per horse-power, will stand a pressure of 300 lbs. to the inch; and one of 15 horse-power occupies a space of only 2½ x 4 x 6 feet. The maximum speed they state at 15 miles an hour, average 10 miles, and ascending incline of 1 in 10 of 4 miles per hour. The steering apparatus moves the wheels, while the axle remains fixed, and they state they can stop instantly. The following letter, highly complimentary to Mr. Clarke, from Mr. Sims, the engineer of Redruth, dated June 12, was read to the meeting:—

"You have got with you a partner in the patent who is endowed with a highly inventive mind; and having myself noticed the various plans hitherto brought before the public, I have no hesitation in saying that the plans suggested to me by Mr. Clarke are very far superior to any others that have come under my notice. I have no doubt whatever that the steam-carriage for common roads will soon get extensively into use, and will be the most magnificent improvement with which the inventive ge-

nius of this great scientific country will astonish the world."

The chairman at the close of the explanations, expressed his willingness to assist in furnishing means for erecting an engine, and giving the patent a fair trial; and we understand it is proposed to raise the sum of £500, in sums of £5 and upwards, and to give the benefit of success to the first subscribers, in proportion to the sums subscribed; and the patentees are in sanguine expectation that the required amount will be obtained in Bath and Bristol in a few days.

From the Kolner Zeitung.

The Public Debts and Standing Armies of the European States.

The paper money now in actual circulation in Europe represents a value of 1,261,428,520 dollars. The total of the public debt is by far larger; it amounts to 11,397,096,000 dollars. Great Britain, (without the colonies,) bears nearly one-half of this gigantic burden, viz., 5,000,000,000 dollars.—The British army numbers 129,000 men; the fleet is composed of 678 vessels, with 18,000 guns. The detail of the debts and armies of the other European States is as follows:—

Spain—Debt, \$1,300,000,000; army, 160,000 men; fleet, 50 vessels, with 721 guns.

Austria—Debt, \$1,100,000,000; fleet, 156 vessels [including gunboats,] with 600 guns.

Russia and Poland—Debt, \$733,000,000; army, 700,000 men; fleet, 175 vessels and 440 gunboats, with 7,000 guns.

The Netherlands—Debt, \$731,000,000; army, 50,000 men; fleet, 125 vessels, with 2,500 guns.

Prussia—Debt, \$180,000,000; army, 121,000 men [war footing, 492,000 men;] fleet, 47 vessels and gunboats, with 114 guns.

France—Debt, \$1,330,000,000; army, 265,463 men; fleet, 328 vessels, with 8,000 guns.

Belgium—Debt, \$165,000,000; army, 90,000 men; fleet, 5 vessels, with 36 guns.

Portugal—Debt, \$160,000,000; army, 38,000 men; fleet, 36 vessels, with 700 guns.

Papal States—Debt, \$120,000,000; army, 19,000 men; fleet, 5 vessels, with 24 guns.

Sardinia—Debt, \$120,000,000; army, 38,000 men; fleet, 60 vessels, with 900 guns.

Naples—Debt, \$100,000,000; army, 48,000 men; fleet, 15 vessels, with 484 guns.

Bavaria—Debt, \$82,000,000; army, 57,000 men.

Denmark—Debt, \$80,000; army, 20,000 men; fleet, 33 vessels, with 1,120 guns.

Saxony—Debt, \$43,500,000; army, 25,000 men.

Turkey—Debt, \$40,000,000; army, 220,000 men; fleet, 66 vessels, with 800 guns.

City of Hamburg—Debt, \$34,000,000; army 1,800 men.

Grand Duchy of Baden—Debt, \$33,000,000; army, 18,000 men.

Hanover—Debt, \$30,368,000; army, 21,000 men.

Wurtemberg—Debt, \$28,000,000; army, 19,000 men.

Greece—Debt, \$25,000,000; army, 8,900 men; fleet, 34 vessels, with 131 guns.

Grand Duchy of Mecklenburg—Schwerin—Debt, \$10,000,000; army, 4,700 men.

Grand Duchy of Tuscany—Debt, \$10,000,000; army, 12,000 men; fleet, 10 vessels, with 15 guns.

City of Frankfurt—Debt, \$7,000,000, army, 1,300 men.

Duchy of Brunswick—Debt, \$6,803,000; army, 3,000 men.

Grand Duchy of Hesse-Darmstadt—Debt, \$6,200,000; army, 42,000 men.

Electoral Hesse—Debt, \$6,000,000; army, 11,000 men.

City of Lubeck—Debt, \$6,000,000; army, 490 men.

Duchy of Saxe Weimar—Debt, \$4,000,000; army, 2,000 men.

Duchies of Schleswig and Holstein—Debt, \$4,000,000; no army; no navy.

Duchy of Anhalt Dessau and Koethen—Debt, \$3,500,000; army, 700 men.

City of Bremen—Debt, \$3,000,000; army, 500 men.

Duchy of Saxe-Coburg Gotha—Debt, \$2,556,000; army, 1,200 men.

Duchy of Saxe-Meiningen—Debt, \$2,500,000; army, 2,400 men.

Duchy of Nassau—Debt, \$2,000,000; army 3,500 men.

Duchy of Parma—Debt, \$1,800,000; army, 5,000 men.

Duchy of Anhalt-Bernburg—Debt, \$1,500,000; army, 300 men.

Duchy of Saxe-Altenburg—Debt, \$1,500,000; army, 1,000 men.

Norway—Debt, \$1,500,000; army, 23,000 men; fleet, 160 vessels, with 560 guns.

Grand Duchy of Oldenburg—Debt, \$1,200,000; army, 600 men.

Landgravate of Hesse Homburg—Debt, \$860,000; army, 350 men.

Principality of Schwarzburg-Rudolstadt—Debt, \$252,000; army, 540 men.

Principality of Schwarzburg-Sondershausen—Debt, \$60,000; army, 450 men.

Danubian Principalities—No debt; annual tribute to Turkey, 3,000,000 piastres; army, 6,800 men.

Servia—No Debt; tribute, 2,000,000 piastres; army, 3,000 men.

Sweden—No debt; army, 34,000 men; fleet, 340 vessels, with 2,400 guns.

Duchy of Modena—No debt; army, 3,500 men.

Principality of Lippe-Deimold—No debt; army, 820 men.

Grand Duchy of Mecklenburg-Strelitz—No debt; army, 800 men.

Principality of Reuss—No debt; army, 745 men.

Principality of Lippe-Schaumburg—No debt; army, 430 men.

Principality of Waldek—No debt; army, 520 men.

Principality of Lichtenstein—No debt; army, 60 men.

Switzerland—No debt; army, 69,500 men, a small number of whom only is in actual service.

Republic of San Marino—No debt and no army.

Statistics of the English Coal Trade.

The coal trade of Great Britain is the largest of any description of traffic probably in the world; it is stated by geologists, and admitted in the collieries, that the capability of supply is almost unlimited, and that there are drawing engines already working with power sufficient to raise 30 per cent. more coal than is brought up.

There are upwards of 3000 coal mines in Great Britain, which employ nearly 250,000 men, women and boys underground and above, termed hewers, putters, trappers, overlookers, bankmen, &c. The capital invested in working stock, tramways, staiths and harbors, altogether exceeds £30,000,000 in value; and the "get of coal," as it is technically termed, now amounts to upwards of 34,000,000 tons annually, the estimated value of which at the "pit's mouth," is £10,000,000. Of this enormous quantity, one-third is raised in the Northumberland and Durham districts, from which the chief exports of the kingdom are made by the rivers Tyne, Wear, and Tees, both foreign and coastwise. The chief points of home consumption are in the iron works of Staffordshire, South Wales, and the West of Scotland; which, together with the lesser works of North Wales, Shropshire, Yorkshire, and Derbyshire, consume nearly one-third of the whole. The residue is consumed in smaller manufactures generally, such as those of cotton and woolen, the gas and salt works, &c., and by the populations of large towns for domestic purposes.

Coals are exported duty free to British possessions and to foreign countries in British ships, or in foreign ships entitled to the privileges conferred by treaties of reciprocity; but a duty of 4s. per ton is chargeable upon coal exported in foreign ships, disintitled as above, and the total amount of such duties received during 1849, was only £3233 13s. 2d.

Vessels at Hartlepool and other ports on the east coast, are frequently cleared out at the Custom House before loading; and as a chaldron of coal, though computed at 2 tons 13 cwt., more frequently weighs 2 tons 15 cwt., it is well known that the actual quantity exported from thence far exceeds

the amount of tonnage registered in the Custom House. The policy pursued by the York, Newcastle and Berwick railway company, was to purchase the wagons and engines from every coal proprietor, and transact the whole business themselves; whereas other railway companies prefer the coal owners to build and keep each their own stock of wagons, thereby uniting their capital and interest with the prosperity and well working of the lines. The tolls and charges made by the railway companies vary considerably, from 3d. to 3s. a ton per mile. The proper mode of making charges to encourage the traffic, should be at so much per train of so many wagons, according to distance, gradients, and other circumstances connected with its transit. The mode of transacting the business varies in like manner in different districts. The York and Newcastle company, for instance, charge 3d. per ton "cell rent," and do all the business themselves, which includes clerks, portage, unloading, shovels, selling and receiving payments on the delivery of coal to the public. Again, the Manchester, Sheffield, and Lincolnshire company charge 3d. per ton wharfage alone, whilst the Edinburgh and Glasgow company charge nothing for wharfage. The charge of demurrage of wagons also varies. Some companies allow 24 hours, others 48 hours, and afterwards charge 1s. to 5s. a wagon per diem. On the London and North-Western, the charges are not uniform, different districts having been accustomed to different usages; in the south the coal is stacked at the stations, whereas in the northern division it is almost invariably removed on arrival.

The shipments during the three years, 1847, 1848, 1849, amounted to upwards of 11,000,000 tons each year:—

	1847.	1848.	1849.
Coastwise.. Tons	8,874,599	9,074,079	8,552,706
Foreign	2,483,161	2,785,300	2,785,300

Total 11,357,760 11,859,379 11,338,006
In 1849 there were 12,074 vessels reported; and in 1850, 12,633.

Coal brought into London in the Year 1850.

Ships. Quality.	Tons.
2565 Newcastle Main	977,206
1585 Newcastle Wall's-End	445,712
734 Sunderland Main	193,523
2916 Sunderland Wall's-End	809,240
3220 Stockton, Middlesboro', &c.	867,192
482 Blyth	112,555
36 Scotch	5,344
369 Welsh	89,574
254 Yorkshire	18,784
15 Liverpool	4,028
83 Small coal	20,786
12,559	3,543,944
13 Culm	2,936
62 Cinders	6,424

12,633	Total imported	3,553,304
	By canal	Tons 29,479
	London and North Western railway	44,865
	South Eastern railway	5,286
	Great Northern railway	4,944—84,574

Grand total 3,637,878

The Lancashire coal-field produces about 4,000,000 tons annually, in the districts surrounding the towns named:—Wigan, 2,000,000 tons; Bolton, 1,000,000 tons; St. Helen's, 1,000,000 tons.

There are various qualities of coal, known under several denominations in different districts of the country; as, best, 2d best, Burgie, or engine coal, round, or nut coal, anthracite, Parrot, Cannel, slack, small coal, &c. Prejudices exist in the minds of the consumers of house coal—for example, in Birmingham and Glasgow, where a white ash coal has customarily been burned, the inhabitants decry a brown ash coal, whereas in London and Edinburgh a white ash coal is not tolerated.

The consumption in Manchester last year, 1850, amounted to 1,230,000 tons; in Preston, 410,000 tons; in Chester and its environs, 80,000 tons; and Birkenhead exported 50,000 tons. Glasgow consumed largely, 1,650,000 tons; and the surrounding neighborhood of Lanark, Rentrew, and Ayr-

shire, upwards of 3,000,000 tons; whilst the iron district of South Wales, in the aggregate, disposed of nearly 4,000,000 tons, exclusive of the exports of that district.

In London the prices are published, and may be seen on referring to the coal market reports in the *Mining Journal* and other newspapers (the present average price in the Pool is 14s. 6d. per ton); but the expenses attending the transmission of a ton of coal are not published, therefore we enumerate them:—

Cost price of a ton of best house coal ..	7s. 0d.
Freight, Newcastle to London	6 0
Insurance	0 1½
City dues	1 1
Half weighage	0 1½
Factory, 3d.; <i>Del credere</i> , 1d.	0 4
Barge, 1s. 8d., and portorage, 2½d.	10½
Wharfage	6 6
Allowance to buyer	0 6
Cartage and agent's commission	2 6=20 0

Emigration from Great Britain

A document just laid before Parliament, comprising the general results of the census of 1851, furnishes us with the following statistics of emigration from the United Kingdom, for a period of 26 years, ending with the close of 1850:—

Return, by the Land and Emigrant Commissioners, of the Emigration from the United Kingdom, during the 26 years from 1825 to 1850 inclusive:—

Years	To the N. American Colonies.	To United States.	To Australian Colonies and New Zealand	other places.	Total.
1825	8,741	5,551	485	114	14,891
1826	12,818	7,063	903	116	20,900
1827	12,648	14,526	715	114	28,203
1828	12,084	12,817	1,056	135	26,092
1829	13,307	15,678	2,016	197	31,198
1830	30,574	24,887	1,242	204	56,907
1831	58,067	23,418	1,561	114	83,160
1832	66,339	32,872	3,733	196	103,149
1833	28,808	29,109	4,093	517	62,527
1834	40,060	33,074	2,800	288	76,222
1835	15,573	26,720	1,860	325	44,478
1836	34,225	37,774	3,124	293	75,417
1837	29,884	36,770	5,054	326	72,034
1838	4,577	14,332	14,021	292	33,222
1839	12,658	33,036	15,786	227	62,207
1840	32,293	40,642	15,850	1,958	90,743
1841	38,164	45,017	32,625	2,786	118,592
1842	54,123	63,852	8,534	1,835	128,344
1843	23,518	28,335	3,478	1,881	57,212
1844	22,924	43,660	2,229	1,873	70,686
1845	31,803	58,538	830	2,330	93,501
1846	43,439	82,239	2,347	1,826	129,851
1847	109,680	142,154	4,949	1,487	258,270
1848	31,065	188,233	23,904	4,887	248,089
1849	41,367	219,450	32,191	6,490	299,498
1850	32,961	223,078	16,037	8,773	280,849
1851	...	.....	.....	.....	56,584
To Mch 31	...	.....	.....	.....	.....
Total	.....	.....	.....	.....	2,622,617

The returns does not distinguish the emigrants born in Great Britain from those born in Ireland.

Immigration for 1851.

The following is a comparative statement of the immigration at the port of New York for the first nine months of this year, [from the office of the Commissioners of Emigration.]

	1850	1851
January	13,154	14,709
February	3,206	8,170
March	5,569	16,055
April	14,627	27,779
May	42,846	38,858
June	10,762	34,403
July	34,446	27,512
August	18,092	30,251
September	21,054	33,586

163,756

251,323

163,756

More this year 67,567

The increase of the last month over September of 1850, is 12,532. Of the total number, there were from, Ireland, 15,985; Germany, 10,289; England, 3,589; Scotland, 1,064; France, 369; Wales, 269; Switzerland, 397; Holland, 678; Norway, 294, and from Sweden, 315.

Compensating Fly-Wheel.

The common fly-wheel, as ordinarily applied to steam-engines, carries the working parts through the dead points of the crank revolution effectually, and in a measure corrects the variations inseparable from a power communicated through a crank; but being fixed upon a shaft, it transmits all its uncorrected irregularity through any train of machinery connected with it, often to the detriment of fine manufactures, and rapid wear and tear of the gear work through which the power is transmitted. Mr. William Constable, of Brighton, has registered a fly-wheel, in which, while the hopeless task of compelling the fly-wheel to steadiness is abandoned—it being permitted to take up its oscillatory motion according to its caprice—the subsequent machinery is prevented from partaking in the slightest degree of the oscillations. There is a model, 3 feet diameter in the Great Exhibition. The wheel has three fixed arms, connecting the shaft with the circumference; and behind these are six other arms hanging loose upon the cylindrical end of the shaft. On the face of each alternate one of these arms lies a spiral spring, partially compressed between two studs, which, being drawn upwards towards the circumference of the wheel, forces the spring by means of a collar into closer compression. The bolt, which passes freely through the spring, is connected to a roller on the fixed wheel by a strap; and behind this is another roller, connected by a strap, which is not a cylinder, but has about one-fifth of its circumference taken off nearly flat, forming what the inventor terms an isodynamic curve, so formed that in its rotary motion a lever of resistance within it, through which and the strap the fixed arm acts against the force of the spring, shall become lengthened as that force increases—the curve offering in every position a lever of resistance proportional to the force of the spring. With these appliances, the inventor states a perfect uniformity of force is obtained; that the invention claims not merely to improve but to perfect the action of the reciprocating engine. It is simple, of easy and inexpensive construction, and but little liable to get out of repair. Engineers are strongly invited to inspect the model, as it is fully expected it will be immediately duly appreciated.

Iron Ore at the West.

We have seen a specimen of iron ore from the banks of Old Creek, in this county, superior, in the opinion of several iron masters, to any ore yet found in the Ohio Valley. It lies geologically, between the sand and iron rocks and near the bituminous coal. The stratum has already been excavated to the depth of three and a half feet, and the quality of the ore is improving. This deposit may prove as valuable as any gold vein in California. In digging a well of thirty feet deep, some hundred yards distant from and horizontally about 30 feet below this stream, the workmen passed through blue clay and globules of lead ore until they came to limestone rock. There are, on Old creek, a number of emigrants from Belgium, who have been accustomed to iron ores and furnaces. They pronounce this ore to be equal to any in Belgium.—*Cannelton Economist*.

Vincennes Railroad.

The Board of Directors of the Ohio and Mississippi railroad company adjourned yesterday after a session of several days. We learn that the St. Louis and Vincennes Company, in conjunction with the Directors of the Cincinnati and Vincennes road, have appointed Prof. O. M. Mitchell of Cincinnati, Chief Engineer of the road, with authority to choose his assistants, subject to the approval of the board. The right of way not having been secured, the board deemed it best not to locate the road until this was accomplished. As soon as the right of way is obtained, the whole line from Illinoistown to Vincennes, will be permanently located, at the first meeting of a full board. We also learn that there will be no difficulty in

putting the whole line under contract at once, upon very satisfactory terms, to wit:—one-half cash, one-fourth in bonds of the company, and the remaining fourth in stock of the road; the road to be completed in two and a half years. We most cordially congratulate the public upon the prospect of the speedy completion of this most important work. But it must be borne in mind that this result is not yet secured. The stock is yet to be greatly increased before the work can be even commenced. But the road is a work of absolute necessity to St. Louis, and must be made.—*St. Louis Int.*

Louisville and Memphis Railroad.

The Memphis papers of the 13th inst., come to us containing the proceedings of a large public meeting held at that place the evening previous, with a view of urging the early construction of a railroad from Memphis to Louisville, and to adopt the necessary measures to secure the full subscription of stock thereto. This is one of the most important railroad movements of the day, and we are glad that Memphis has at last aroused herself to her true interest and made a manifestation to co-operate with Louisville in efforts to connect the Ohio with the Mississippi at the above point. Louisville has shown by her acts the earnest with which she is embarked in the various railroad enterprises connecting her in all directions with the interior of the country on either side of the Ohio, and in opening a communication with the cotton regions in Tennessee. If Memphis will act as Louisville and her citizens have done, a new and better market will be offered to her for her cotton than she can obtain either at New Orleans or find upon the seaboard, by taking the Southern route.—All the manufacturers in Western New York and Pennsylvania, and in New England, desire to know is, that the cotton is here or at Memphis, to secure orders for all that may be for sale at either point.—From here they can receive their cotton at less cost of transportation and in one-half the time than if their purchases are made at New Orleans, and nothing but the apprehension that a supply will not be held over at Memphis to meet orders from the North, prevents permanent arrangements for purchases being made here. All that can be saved in transportation of course can be made to inure to the benefit of the producer, and this will give from three-fourths to a cent, a pound more to the planter by selling at Louisville, and taking the Northern route instead of seeking an outlet by sea.—*Louisville Courier.*

From the New Orleans Commercial Bulletin.

DONALDSONVILLE, June 26, 1851.

GLENDY BURKE, Esq.,

Chairman Committee on Railroads, etc.,

Sir: The enthusiasm that prevails at the present time on the subject of railroads in our State, and the favor with which was received a suggestion that I advanced to several influential gentlemen of New Orleans, relative to a new line of direct communication by railroad, between the city and the town of Washington, in the parish of St. Landry, induce me to take the liberty of submitting a rough outline of the proposed route, through you, to the committee which at the recent convention was appointed by the president "to prepare an address, setting forth all facts and statistics they can gather on all railroad projects, in which the State has a direct and immediate interest."

As it appeared to be generally conceded, prior to the assembling of our convention, that the scheme of a railroad communication between New Orleans and Jackson, via Baton Rouge, had good prospects of success, and that the line of its route would be along the eastern bank of the Mississippi, passing within a few miles of a point opposite the town of Donaldsonville, it occurred to me some time since, that a very advantageous modification might be made in the plan of communication by railroad between New Orleans and Washington, advocated by Col. Payne, by means of which these two important public enterprises might be made to lend a helping hand each to the other, and work in concert towards the grand result aimed at by the convention, and set forth in their resolutions—the equal and mutual advantage of city and country.

The proposition made by me, accordingly, was to effect a connection between the two contemplat-

ed lines, through a branch to be constructed from the Jackson road to the Mississippi opposite Donaldsonville, and through a steam ferry capable of receiving the train of cars from the Washington road at that point. The latter road I suggested should run as follows—from the point on the Mississippi just designated opposite Donaldsonville, and on the west bank of the Lafourche down that bayou three miles, then leaving the bayou through the Grand Bayou Pierre part and Grand River settlements to Grand river, 21 miles. Grand river to be crossed by means of a bridge; thence southwesterly to Grand lake, 9 miles; across that body of water, as across the Mississippi, by a steam ferry; thence to the Teche, three miles; and then following the route proposed by Col. Payne, up that stream through Franklin, New Iberia, St. Martinsville, Vermillionville and Opelousas, to the terminus at Washington, 70 miles, a distance all told of 103 miles from the point of departure on the Mississippi.

In favor of the adoption of this line, over any other which has yet been proposed, and more especially over that proposed by Col. Payne, many considerations of great weight may be offered. As my design is only to bring the attention of the committee to the subject, I shall content myself on this occasion with the briefest statement of the most prominent among them.

1st. By the route suggested by me, a saving of 78 miles of road would be effected.

2d. Several very expensive bridges would be dispensed with.

3d. No deep swamps or trembling prairies would be encountered.

4th. Upon the construction of only 21 miles of road, a direct communication could, within a few months, be established between New Orleans and the Attakapas parishes, rendering immediately available a large productive revenue.

5th. There would be secured to the Washington road the strenuous support and co-operation of all capitalists already enlisted in building up the Jackson road.

But however cogent and unanswerable may be these reasons, they will still be held secondary by the gentlemen of the committee who represent New Orleans—to any additional consideration which, in as far as they are concerned, must prove conclusive. The line now recommended, through its connection with the Jackson road, may be regarded as terminating substantially and in effect in the city, and its completion would, of necessity, go far towards enhancing the prosperity of New Orleans; while it must be manifest that the inevitable result of the success of Col. Payne's scheme would be the founding at Algiers of a dangerous commercial rival. Col. Payne's project will not therefore, I feel assured, receive any encouragement from the moneyed men of New Orleans, and without their support the country is entirely incompetent to undertake it. The route that I suggest harmonizes all interests, and should meet with equal favor on all hands.

You will permit me a few additional remarks in explanation.

1st. By the adoption of the line proposed by me, a saving of 78 miles in the length of the road—62 miles east and 16 miles west of the Mississippi would be effected as already stated. Now, accepting Col. Payne's data, you will perceive by this means alone an economy of \$780,000 is realised.

2d. But a further reduction of cost would be secured by the avoidance of the necessity of constructing two expensive bridges, which would have to be constructed on Col. Payne's route; one over the Lafourche, which could scarcely be built for less than \$100,000, and another over the Bayou Bœuf, which would call for the outlay of nearly \$50,000.

3d. It should be borne in mind that it is precisely over that portion of this Algiers route, which lies between New Orleans and the Teche, that the nature of the country presents the most formidable obstacles to a railway communication. I do not hesitate to assert, from my own personal knowledge, that the swamps of this region will present almost insurmountable difficulties to the passage of the road, in the direction indicated by Mr. Payne, and must increase far beyond the amount stated by him (\$10,000) the average cost per mile.

It is susceptible of demonstration, that by adopting the line advocated by me, these several reductions in the cost of the road could be effected—amounting in the aggregate to near \$1,000,000—a sum in itself more than sufficient to finish the other road its entire length. Are there any counterbalancing advantages attending the selection of the Algiers route which should entitle it to the preference of the committee? I have been able to discover none which could stand the test of serious examination. It has indeed been argued, and even assumed, that the support of the Parishes of Lafourche, Interior and Terrebonne would be gained to that project of communication, and a good deal of influence has been assigned to the assistance which they would furnish; but it seems to me clear that this has been done on promises unworthy of confidence. Lafourche Interior has an excellent channel of navigation, open for the greater portion of the year, and at no time more than partially interrupted.

To imagine that for the exclusive advantage of a dozen planters who would reside on the line of the road as it traverses that parish, the remainder of the inhabitants could be induced to submit to the system of taxation upon which so much stress is laid by some enthusiasts, is perfectly visionary; nor is it any less visionary to imagine that any considerable amount of Lafourche sugar would ever take this road to market, inasmuch as at that season when our crops are shipped to the city, the Lafourche planters have for the larger portion of the time, a cheaper, safer and more convenient communication with New Orleans than could be furnished them by artificial outlets. Terrebonne's geographical position is different, and the planters of that parish unquestionably rest under such inconveniences as might lead them to sustain Mr. Payne's projected road; but it should be recollected that they could be but partially benefited, unless as suggested by a delegate from that parish to the convention, a branch road were constructed along the bayou Terrebonne to connect with the main trunk of road—which trunk must involve an expenditure of at least \$200,000 to be added to the stupendous cost of the work, admitted by Colonel Payne's report to reach already \$1,000,000.

4th. You will observe that a smaller cost than would be required for the erection of the two bridges already spoken of, over the Lafourche and the Bœuf, and other bridges along the route—by the construction of 21 miles of road, from the Mississippi to Grand river, there could be opened within a year, to the people of Attakapas, a mode of cheap and easy communication with the city, which could not fail to bring in at once a handsome revenue, and at the same time inspire confidence in the practicability of the undertaking. If you will refer to Col. Payne's report, the committee will be competent to judge approximately of the amount of travel and freight available as a source of profit. On the other hand the committee should not lose sight of the fact, that should the scheme of Col. Payne be adopted, it would be utterly impossible to derive the least benefit from the road until after its completion from Algiers to the Lafourche, a distance of 60 miles, which, as I have stated, could not be done at a smaller preliminary cost than \$700,000—not including the bridge.

In conclusion, an act of the Legislature has authorised the incorporation of a company to run a railroad from the Mississippi to Grand river, and the State has liberally donated such lands as it possessed along the route—the different property holders through whose possessions the road would pass, have also volunteered the gratuitous cession of such lands as might be needed for the use of the road—an act has been signed for the formation of a company to build the road, but owing to the temporary excitement created in favor of Col. Payne's project, no steps have been recently taken to urge this scheme before the public.

But now that the question of opening a railway communication between New Orleans and the western portion of Louisiana has been transferred from the decision of popular assemblies to the calmer and wiser judgment of a select committee of practical men, I have thought as one of those who are interested in having the merits of the route via Donaldsonville fairly tested, that I would draw up for the use of the committee such a brief and

incomplete sketch as is herein presented to them, being fully prepared, however, whenever they may deem it advisable, to lay before them a more detailed statement of my views.

I am at this moment engaged in making a survey of the route adopted by the incorporated company just referred to—plans of which survey, and of others representing the entire route as suggested, will be forwarded to the committee, should they feel disposed to inspect them.

I am, sir, with the highest respect,
Your obedient servant,
A. J. POWELL.

American Railroad Journal.

Saturday, October 11, 1851.

Necessary Precaution.

Within the last few years, the railways of this country generally have accelerated the movement of their trains, and on some of the roads a speed of 30 miles an hour is maintained by express trains, and an actual speed of 40 miles an hour is made, between certain points on the line. The speed on our American railroads is equal to that adopted in other countries, except England, where the railway system has been brought to a higher degree of perfection than in any other country. While our railways are rapidly following the example of the English roads in their efforts at high speed, we are not adopting the same precautions to guard against accidents, as those required on all the roads in England.

We were pleased, however, in passing over the NEW YORK AND NEW HAVEN Railroad recently, in their express train, to notice that one precaution or practice had been introduced, such as is practiced on the express trains in England, to test the soundness of the cast iron car wheels. At every stopping place, a man passes under the cars, and with a small hammer strikes each wheel, so as to bring out a clear ring of the metal, if it is sound, and free from flaw or fracture. In case of defect, the blow of the hammer discloses it, and a new car is substituted.

This practice is common in England, and should be adopted in this country. The breaking of the car wheel is a cause of frequent accidents on our railways, and every possible precaution should be enjoined on those having the safety of the lives and property of the community in their keeping.

Pattern of Rail.

A friend recently returned from England informs us that the London and North Western railway company have recently relaid some *thirty miles* of their track with a large rail of the *bridge* or Π pattern, with a longitudinal wooden sill, forming what is called the *continuous bearing track*, similar to that of the Great Western railroad.

This work has been done under the advice of Robert Stephenson, the engineer, and is regarded as indicative of a change in the opinion of the great advocate heretofore of the H rail, or the T rail with the common cross-tie shape. We notice this fact as one of interest to the engineering profession and to the whole railway public. Some diversity of opinion exists upon this question among the best informed engineers of the country, and every fact bearing on the question is a matter of interest to all. We wish some of our companies would institute a series of experiments to test the comparative merits of the different patterns of rail now in use. In our haste to get roads in operation, very little thought is expended on the many economical questions which so essentially affect the actual value of our roads.

Stock and Money Market.

The condition of the money market has slightly improved since our last, both in New York and Boston. The prevailing opinion is, that this favorable turn of things indicates the commencement of a permanent improvement. The exportation of specie is diminishing, while the receipts of gold from California are increasing. No safe conjecture, however, can be made until we are better informed as to the extent of our foreign indebtedness. Here lies the great disturbing cause. In the bond and stock market but little or nothing is doing, except in the fancies. In bonds of railroads, and of municipal corporations, nothing is doing, and we advise companies to keep out of the market for some months to come, as securities cannot be negotiated in the present state of things.—Many companies can much better afford to suspend work than to pay the rates for money now asked. The rail market is dull, and is likely to continue so till money is more abundant.

Notwithstanding the great scarcity of money, the receipts on nearly all our railroads and canals are far in advance of last year.

Hartford and New Haven Railroad.—The receipts of the Hartford and New Haven railroad for the month of September, 1851, were \$55,590. For September, 1850, \$47,057. Increase \$8,433.

Cleveland and Columbus Railroad.—The earnings of the Cleveland and Columbus railroad for the month of September were about \$70,500; of this there was received from passengers \$46,606 43, which is a large increase, nearly \$8,000, over the month of August. This road is 135 miles in length.

Rutland and Burlington Railroad.—The earnings of the Rutland and Burlington railroad for the month of September, were.....\$45,392 12
In the same month last year..... 21,323 00

Gain this year.....\$24,069 12
Or more than 112½ per cent.

Columbia Railroad.—The following shows the collections at the Philadelphia office of the Columbia railroad:

Amount as per last report.....\$280,157 20
Amount month ending Sept. 30, 1851.. 35,700 46

Whole amount since Nov. 30, 1850....\$315,857 66
Same time last year..... 275,104 35

Increase.....\$40,753 31

New Haven and New York Railroad.—The earnings of the New Haven and New York road show a large gain over last year. The figures are:

Passengers.....\$58,866 43
Paid Harlem road..... 4,532 45

Freight and Commutation.....\$54,333 98
\$8,047 40

Sept., 1850.....\$62,381 38
\$46,210 19

Increase in 1851, 35 per cent.....\$16,171 19

Erie Canal.—The amount received for tolls on all the New York State canals during the 4th week in September, is.....\$122,655 86
Same period in 1850..... 137,062 96

Decrease in 1851.....\$14,407 10

The aggregate amount received for tolls from the commencement of navigation to the 30th September inclusive, is.....\$2,398,541 85
Same period in 1850..... 2,162,190 33

Increase in 1851.....\$236,351 52

Michigan Southern Railroad.—The earnings of the Michigan Southern railroad company for August and September compare with the corresponding months of last year as follows:—

	1850.	1851.
August.....	\$16,417 27	\$24,197 48
September.....	20,483 81	35,228 33
Total.....	\$36,901 08	\$59,425 76
		\$36,901 08

Increase.....\$22,524 68
Being over 60 per cent.

Norwich and Worcester Railroad.—The receipts of the Norwich and Worcester road for September were larger than we intimated a few days ago, and show a very gratifying gain over last year. The figures are:

	Sept. 1851.	Sept. 1850.
Through Travel....	\$2,007 03	\$1,214 85
Local Travel.....	11,235 43	11,126 60
Freight.....	14,574 20	11,337 15
Mail &c.....	1,059 46	2,129 58

Total.....\$28,876 12.....\$25,805 18
Showing a gain of \$3,070 94, equal to 12 per cent. The through travel, it will be seen, continues to show an increase.

Little Miami Railroad.—The receipts of the little Miami railroad for September were as annexed:—

	1851.	1850.
Sept. 1 to 7.....	\$10,296 92	\$9,420 23
Sept. 8 to 14.....	10,684 67	9,620 28
Sept. 15 to 22.....	11,726 29	10,378 71
Sept. 23 to 30.....	14,311 89	9,561 21

Total.....\$47,019 77.....\$38,979 43
38,979 43

Increase in 1851. \$8,040 34, eq'l, to 21 per ct. The above is a very large receipt for a road of only 85 miles in length, and having a capital and debt of only \$2,150,000.

Harlem Railroad.—The receipts of the Harlem road continue to show a very favorable increase. The figures for September are as follows:

1851.....\$59,005 09
1850..... 46,222 46

Increase 30 per cent.....\$12,782 63

Baltimore and Ohio Railroad.—The following are memoranda of the business upon the Baltimore and Ohio railroad, for the month of September, 1851.

	For Passengers.	For Freight.
Main Stem.....	\$36,878 35	\$89,589 04
Washington Branch..	22,935 05	7,461 15

\$59,813 40 \$97,050 19
Making an aggregate of \$126,467 39 on the Main Stem, and \$30,396 20 on the Washington Branch. The total being \$156,863 59.

The above, compared with the corresponding month of last year, shows a decrease of \$1,524 96 on the Main Stem, and \$5,825 53 on the Washington Branch.

Delaware and Hudson Canal.—Receipts of coal over the Delaware and Hudson Canal up to October, 1850.....\$597,945 tons.
To same date in 1850..... 341,068

Increase this year.....256,877 tons.

Ohio and Pennsylvania Railroad.—The number of passengers carried over the Ohio and Pennsylvania road for the week ending 9th September, was 3,004. The road is being pushed forward to Alliance with vigor. It will probably reach that point on the 15th Dec.

Columbus and Xenia Railroad.—The receipts on the Columbus and Xenia railroad for the month of September were \$29,500. The length of this road is 54 miles.

The Evening Journal gives the annexed statement of the quantity of flour, wheat, corn and barley, left at tide water during the 1st week in October in the years 1850 and 1851, as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1850...	130,466	210,877	110,458	176,635
1851...	95,449	149,382	253,385	121,461

Dec....35,017 61,495 Inc. 142,927 de.55,174

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 7th Oct., inclusive, during the years 1850 and 1851, is as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1850...	1,781,511	1,443,540	2,967,610	789,865
1851...	2,293,834	1,945,906	6,439,756	494,944

Inc.... 512,323 502,366 3,472,146 dec.294,921

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 7th Oct., inclusive, during the years 1849 and 1851, is as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1849...	1,844,320	1,271,460	4,284,265	366,409
1851...	2,293,834	1,945,906	6,439,756	494,944

Increase. 449,514 674,446 2,155,491 158,535

By reducing the wheat to flour, the quantity of the latter left at tide water this year, compared with the corresponding period of last year, shows an increase of 612,796 bbls. of flour.

Report of the Mining Intelligence Association.—Before the Board at the Mining Intelligence and Copper Stock Exchange Office, Eagle Harbor, Michigan, Sept. 4th, 1851.

Name of company.	Asked.	Offered.	Sold.
Copper Falls.....	\$12 00	11 00	
Pittsburgh and Boston (Cliff).....	120 00	115 00	
North American (old stock).....	31 00	30 00	
Minnesota.....	175 00	170 00	
North West.....	33 00	32 00	
North Western.....	12 00	11 00	
Phenix.....	7 50	7 00	
Ridge.....			8 50
Adventure.....	9 00	8 50	
Iron City.....	6 00	5 50	
Forest.....	7 00	6 50	
Cape.....	3 00		
Farm.....	5 50	5 00	
Algomah.....			2.87 1/2
Toltec.....			3 00
Medora (Agate Harbor).....	3 50	2 00	
Bluff.....	1 50	1 25	
Aztec.....	7 50	7 00	
Ohio.....	6 00	5 50	
Eureka.....		3 00	
Douglass Houghton.....	7 50	6 50	
Winthrop.....	2 50	2 00	
Lac la Belle.....	3 00	1 75	
Forsyth.....			3 00
Quincy.....	4 00	3 00	
Star.....	2 50	2 00	
Manpan.....	2 00	1 75	
New York and Michigan.....	2 00	1 75	
Dakota.....	1 50	1 00	
Ohio Trap Rock.....	9 00	8 00	
Norwich.....	4 50	4 00	
Piscataqua.....	5 00	4 00	
Bohemian.....	6 00	5 00	
Ontonagon.....	5 00	4 50	
Peninsula.....	7 50	7 00	
Avery.....	2 00	1 50	
Fire Steel.....	1 50	1 00	
Algonquin.....	4 00	3 50	
Siskowit.....	8 00	7 00	
Colling.....	3 50	2 75	

—Lake Superior Journal.

The Pennsylvania Coal Trade.—The Anthracite coal trade is still active in this State. The Reading railroad transported during the week ending Thursday, Sept. 25th, 40,959 tons and the Schuylkill Navigation Company, for the week ending Oct. 2d, 15,092 tons. The Lehigh Company brought down 27,523 tons for the same week.

The amount of coal shipped from the mines from the opening of navigation up to the dates specified above, has been as follows:—

By Reading railroad.....	1,331,067 tons.
" Schuylkill Canal.....	437,150 "
" Lehigh Canal.....	767,468 "

Making a total of.....2,535,685 tons.

Gold from California.—The arrivals of gold from California are fully up to the expectations of those interested. By the three arrivals we have probably received some two millions eight hundred thousand dollars in gold, as follows:

Prometheus..On freight.....	\$150,000
Hands of passengers.....	450,000
Ohio.....On freight.....	1,435,000
Hands of passengers.....	415,000
Empire City..On freight.....	100,000
Hands of passengers.....	250,000

Total.....\$2,800,000

Railway Share & Stock List;

CORRECTED WEEKLY FOR THE
AMERICAN RAILROAD JOURNAL.

NEW YORK OCTOBER 11, 1851.

GOVERNMENT AND STATE SECURITIES.

U. S. 5's, 1853.....	101 1/2
U. S. 6's, 1856.....	104 1/2
U. S. 6's, 1862.....	109
U. S. 6's, 1862—coupon.....	114 1/2
U. S. 6's, 1867.....	115 1/2
U. S. 6's, 1868.....	116 1/2
U. S. 6's, 1868—coupon.....	122 1/2
Land Warrants.....	140a145
Arkansas 6's.....	52a53
Alabama 5's.....	91a92
Indiana 5's.....	79
Illinois 6's, 1870.....	65a68
Kentucky 6's, 1871.....	105a106
Massachusetts sterling 5's.....	105a106
Massachusetts 5's, 1859.....	100 1/2
Maine 6's, 1855.....	103
Maryland 6's.....	102 1/2
Michigan.....	—
Mississippi.....	—
New York 6's, 1855.....	103 1/2
Ohio 6's, 1860.....	107
Pennsylvania 5's.....	91

RAILROAD BONDS.

Atlantic and St. Lawrence, 6 percent.....	85
Baltimore and Ohio, 1867.....	94 1/2
Boston and Providence 6's, 1855.....	101
Boston and Worcester 6's, 1855, convertible.....	107 1/2
Bost., Concord and Mont. 6's, 1860, mortgage.....	87 1/2
Cheshire 6's, 1860.....	91 1/2
Connecticut River 6's, convertible.....	98
Erie 7's, 1859.....	96
Erie 7's, 1868.....	108 1/2
Erie income 7's.....	89
Hudson River 7's, 1853.....	101 1/2
Michigan Central, convertible, 8's, 1856.....	104 1/2
New York and New Haven.....	100 1/2
Norwich and Worcester, mortgage, 1860.....	80a85
Old Colony, 1854.....	97 1/2
Ogdensburg 7's, 1859.....	90
Portsmouth and Concord.....	80a85
Passumpsic 6's, 1859.....	94 1/2
Rutland 7's, 1863.....	97
Reading mortgage, 1860.....	80
" " 1870.....	75
Sullivan, mortgage 6's, 1855.....	75
Vermont Central 6's, 1852.....	93
" " 6's, 1856.....	88
Vermont and Massachusetts 6's, 1855.....	85

RAILROAD STOCKS.

[CORRECTED FOR WEDNESDAY OF EACH WEEK.]

	Oct. 1.	Oct. 8.
Albany and Schenectady.....	89 1/2	90
Atlantic and St. Lawrence.....	60a65	—
Androscoggin and Kennebec.....	30a35	—
Boston and Maine.....	106	102 1/2
Boston and Lowell.....	109	109
Boston and Worcester.....	100	100 1/2
Boston and Providence.....	84 1/2	8 6
Bost., Concord and Montreal.....	40	—
Baltimore and Ohio.....	71 1/2	—
Baltimore and Susquehanna.....	36	—
Cheshire.....	53	—
Cleveland and Columbus.....	—	—
Columbus and Xenia.....	—	—
Camden and Amboy.....	—	—
Connecticut River.....	60	—
Delaware and Hudson (canal).....	—	—
Eastern.....	95	92 1/2
Erie.....	73 1/2	76 1/2
Fall River.....	92 1/2	92 1/2
Fitchburgh.....	108 1/2	108 1/2
Georgia.....	—	—
Georgia Central.....	—	—
Harlem.....	63	65 1/2
Hartford and New Haven.....	124	—
Housatonic (preferred).....	52	—
Hudson River.....	68	71
Kennebec and Portland.....	50a55	—
Little Miami.....	—	—
Long Island.....	13	14 1/2
Mad River.....	—	—
Madison and Indianapolis.....	92	92 1/2
Michigan Central.....	104	104
Montgomery and West Point.....	—	—
Michigan Southern.....	—	—
Manchester and Lawrence.....	97	89
Morris (canal).....	14 1/2	13 1/2
New York and New Haven.....	104 1/2	107
New Jersey.....	133	—
Northern.....	65	66 1/2
Nashua and Lowell.....	107 1/2	—
New Bedford and Taunton.....	111	—
Norwich and Worcester.....	45 1/2	48 1/2
Norfolk County.....	20	10
Ogdensburg.....	30	31
Old Colony.....	65 1/2	66
Passumpsic.....	80	73
Pennsylvania.....	—	—
Pittsfield and North Adams.....	95	—
Philadelphia, Wilm'gton & Balt.....	28	26
Petersburg.....	—	—
Richmond and Fredericksburg.....	—	—
Richmond and Petersburg.....	—	—
Reading.....	52 1/2	53 1/2
Rochester and Syracuse.....	105	104 1/2
Rutland.....	41	40
Stonington.....	40 1/2	41 1/2
South Carolina.....	—	—
Syracuse and Utica.....	123 1/2	—
Sullivan.....	25	—
Taunton Branch.....	108	—
Troy and Greenbush.....	90	—
Tonawanda.....	—	—
Utica and Schenectady.....	127 1/2	127 1/2
Vermont and Canada.....	97	99 1/2
Vermont Central.....	26 1/2	26
Vermont and Massachusetts.....	25	25
Virginia Central.....	—	—
Western.....	102	102
Wilmington and Raleigh.....	—	28 1/2
York and Cumberland (Pa.).....	20	—

MR. GALT, the President of the St. Lawrence and Atlantic railroad, arrived in this city in the afternoon train yesterday, coming from Montreal by way of Melbourne and Gorham. We learn through him, that the Montreal end of the line will be opened for business without fail next week, as far as Melbourne, that the particular route and place of junction, of the two lines, is definitely settled by the two boards, and that the ruling that is, *heaviest rising gradient* from Montreal down to Portland, the whole distance from city to city, will be *forty-five feet per mile*, and no more. Further, the ruling rising gradient from Portland up to Montreal, will not exceed *sixty feet to the mile*. This is a most extraordinary state of things, when we take into consideration, that this railway

not only passes the *White Hills*, but also the *highlands* of the treaty of 1783.—*Boston Atlas*.

Commerce of New York.

From a comparative statement of the imports at New York in the first three quarters of the current year, and of 1850, it appears that the amount of merchandise exclusive of specie imported in the present year is greater than that imported in the same period of last year by \$11,221,784; and that the amount of duties paid in that city in the nine months of the present year, was \$26,012,720, in place of \$23,250,234 paid in the same period of last year; showing an increase of \$2,792,486.

The following statements from the Journal of Commerce show the amount of imports in the month of September in each of the last six years, of dutiable and free goods, and also of specie, and also the quarterly amounts for the two last years:

Imports at New York for September.

	Dutiable.	Free.	Specie.	Total.
1851.	\$10,053,476	366,153	2,769,726	13,181,355
1850.	9,310,023	1,273,878	2,046,846	12,630,247
1849.	7,887,190	226,188	488,435	8,602,813
1848.	8,168,294	543,749	197,098	8,879,141
1847.	8,111,845	917,109	94,546	9,122,500
1846.	5,272,923	600,840	10,044	5,883,810

As shown above, the falling off for the last month has been in free goods, the item of dutiable exhibiting a considerable increase. Thus while the actual value of merchandise received is \$115,550 less than for September, 1850, the receipts of duties are \$114,590 20 larger, the total for September, 1851, being \$2,609,832 97, against \$2,494,242 77, the amount received during the same month last year. The following will show the comparative imports, exclusive of specie, for the three-quarters of the calendar year which expired with the 30th of September:

Imports at New York for Nine Months.

	1850.	1851.	1850.	1851.
	Dutiable.	Dutiable.	Free.	Free.
1st qr.	\$26,320,278	35,793,788	2,464,445	3,128,216
2d qr.	23,766,738	28,305,746	2,097,397	2,009,428
3d qr.	37,595,935	36,127,070	2,019,639	2,031,968
	\$88,692,951	100,226,604	7,481,481	7,169,612
Add free	7,481,481	7,169,612		
	\$96,174,432	107,396,216		

This makes a total increase for the three quarters of \$11,221,784, although for the three months just closed there is a decrease of \$1,456,536.

Virginia.

Blue Ridge Tunnel.—The Tunnel throughout the Blue Ridge in Virginia, by which the Central railroad is to be connected with the great Valley at Staunton, is a most difficult, slow and expensive work. The editor of the *Richmond Enquirer*, who visited it last week, thus speaks of it:—

The Tunnel has, thus far, been cut entirely through solid rock and of the hardest kind—a dark bluish schistose, slaty greenstone, of most irregular fracture. On the eastern side, where the mountain has been perforated some 250 feet, the rock is very compact, and no walling is necessary. On the western side, where the mountain is perforated about 450 feet, the rock is not so solid, but is composed of shifting strata, which require, in many places, walling up—and for this purpose, limestone blocks have to be hauled some 6 or 7 miles. The Tunnel is about 20 feet wide and 30 feet high, arched at the top. About 120 hands are employed night and day; being divided into three parties, 20 on each side; each party working eight hours. While on the western side the mouth of the Tunnel comes directly into the valley, on the eastern side it is necessary to overcome enormous difficulties, such as cutting off spurs, filling up precipices, &c. At the entrance of the Tunnel, there will be an immense embankment at least one hundred feet high and curved. Before reaching the eastern mouth, it has also been found necessary to cut other shorter tunnels through the interposing spurs of the mountains. The grade from Mitchum's river, the "eastern base" of the ridge, to the Tunnel, is 70 feet per mile. It is calculated that the Tunnel will

not be completed in less than four years—it being impossible to work more than a limited number of hands.

Kentucky.

The Railway to Lexington.—We learn that the late meeting of the Directors of the Covington and Lexington, and Maysville and Lexington railroads, failed to make agreement for the construction of the track from Paris to Lexington. The Covington Company, says the *Covington Journal*, proposed to do the work at given prices, or to let the Maysville company do the work at the same prices. The latter Company had contracted with Nash, Seymour & Co. for portions of the work at prices much higher than those proposed by the Covington company, and they insisted that whatever damage accrued from putting an end to that contract, should be borne by the Covington company. This the latter Company refused to pay, as they did to leave he amount to arbitration.—*Cincinnati Gazette*.

Maysville and Lexington Railroad.—Progress of the work.—The Directors yesterday affected satisfactory arrangements for putting on a large additional force of hands, some four or five hundred, in view of expediting the graduation of the railroad between Paris and Lexington.—They will be set to work in a week or ten days, or as soon as the shanties can be prepared for their accommodation; and it is expected that the grading between Paris and Lexington will be completed in about eight months and the road completed between those points in twelve months from this time. We congratulate the public on such a display of energy on the part of the Directors.

The progress of the work at this end of the line is gratifying. Rapid progress has been made in constructing the heavy culvert across Limestone creek and the embankment across its valley. The efficient contractors have also made a prodigious impression upon the heavy summit cut at the head of Limestone, near Dimmitt's pond.—*Maysville Eagle of the 30th ult.*

The Branch Railroad to Harrodsburg.—Friday next (Oct. 3d) is the day for the adjourned meeting, at Lawrenceburg, of the delegates appointed at the several meetings held in Mercer, Anderson, Shelby and Franklin counties, in favor of a railroad from Harrodsburg to connect with the Frankfort and Louisville railroad at some point to be designated by the company of the latter road.

The survey which has been made of the route from Harrodsburg to Frankfort shows it to possess many advantages; the road will be unexpectedly short—less than 33 miles long, and only three-fourths of a mile longer than the shortest road now travelled—and for almost the whole distance of easy and cheap construction. Except for a short distance in going up Cedar run (which will be somewhat more expensive,) it is believed that the whole road can be made at an average cost of \$17,000 per mile. This is far cheaper than the general cost of railroads in Kentucky; and the three counties, with the aid of which the Louisville and Frankfort company will give, can build the road and secure all its advantages of conveniences in traveling, an easy access to market, and a great increase in the value of real estate throughout the whole region of its route, without ever feeling the cost of it the least burdensome upon their citizens.—*Frankfort Commonwealth*.

Ohio.

Eaton and Piqua Railroad.—The directors of the Eaton and Hamilton railroad, at their meeting on Tuesday last, says the *Eaton Register*, resolved to take immediate steps to locate and let the branch road to Piqua. They also resolved, so soon as \$150,000 should be subscribed for the branch, to consolidate the Hamilton and Eaton and the Piqua companies into one.

Population of St. John, N. B.

A census of the city of St. John, New Brunswick, recently completed gives a population of 43,000, including the suburb of Portland. This gives a population somewhat greater than any previous estimate we have noticed.

Richmond and Danville Railroad.

The *Richmond Dispatch* noticing the effects which will result upon the completion of the Richmond and Danville Railroad to that section of country which it traverses, thus alludes to that portion of North Carolina which, in a great measure, will seek it as a channel to market:

"When we pass beyond Danville into North Carolina, we find still a very rich country, of the productiveness of which the inhabitants themselves have an imperfect idea. The people there live in abundance. They have no need of exertion beyond their domestic wants. They send some tobacco, at great expense and trouble, to market, and that is all. They have nothing to stimulate them to exertion beyond this, and their extremely productive lands are but very partially cultivated. The counties of Caswell, Person, Guilford, Rockingham and Stokes, in North Carolina, will all be tributaries to the Danville Railroad, even should that road never go beyond Danville: and these counties are among the richest of the North State. Should the road continue, as we are sure it ultimately will, to the South Carolina line, it will pass along the richest part of North Carolina, including the great valley of the Yadkin."

Missouri.

Pacific Railroad.—About forty miles of this road are under contract, and there are now more than 1,000 laborers employed upon it. Thomas Allen, Esq., the President of the company, has just returned from the east, where he contracted for the rails, locomotives and other machinery; and before the end of one year from the commencement of the work, a portion of the road will probably be opened for travel.

Hannibal and St. Joseph Railroad.—The board of directors of this company, met at Linneus on the 15th Sept., and resolved to begin the survey and location of the road immediately, and to commence the work by breaking ground at the Hannibal terminus on the first Monday in November.—They also appointed a committee to invite numerous distinguished guests to be present and participate in the important ceremony. It is expected that Gen. David R. Atchison will preside on the occasion, and Hon. Henry S. Geyer deliver an oration.

We learn that the most perfect unanimity of sentiment and action prevailed in the board—not the slightest feeling of dissension existed—they were united upon every measure. From the returns and data laid before the board, it appears that the amount of stock subscribed, reaches to near \$700,000, and it is confidently believed that the amount will be swelled to \$1,000,000 by the first of November. The greatest enthusiasm, we understand, exists among the people along the whole line of the road, and it is expected they will turn out almost *en masse* to witness the ceremony of breaking ground on the first Monday in November.—*Missouri Cour. of Sept. 25th.*

Virginia.

North Western Railroad.—The Parkersburg, [Va.,] *Gazette* says the second party of engineers have arrived and commenced surveying the route for the North Western railroad. This corps is under the direction of Mr. Hoffman, division engineer. The *Gazette* says that as far as the engineers have progressed in their surveys, they find routes entirely practicable.

Canada.

Toronto and Guelph Railroad.—The people of Toronto have determined on recommending the Corporation of that city to take stock to the value of \$500,000 in the Toronto and Guelph railroad. The effect of success would be to attract to the above cities the trade of an extensive country unsurpassed for fertility.—On the 15th of October the first sod will be turned in presence of the Earl and Countess of Elgin and Kincardine.

Ohio.

Sandusky City and Newark Railroad.—This railroad, as far as Mansfield, has been relaid with a T rail, which is now laid on the entire length of 116 miles. The Sandusky Mirror says:

"It is now, in every respect, one of the best and most perfect roads in the United States, and we are gratified to learn it is doing a prosperous business. It passes through the richest agricultural region in Ohio, and reaches the rich mineral district of the State. The foundation of its permanent prosperity is therefore secured beyond all contingency. No rival track can destroy the business of a road relying on the country through which it passes for its business. Fifteen thousand bushels of wheat per day are now arriving on this road, with a large quantity of flour and other rolling freight. Large quantities of wheat are brought to this market from Utica, 13 miles from the Ohio canal, and it will come in freely from Newark, the very bank of the canal, as soon as the warehouse accommodations are completed at the depot of the railroad, thus showing the superiority of railroads over canals for transporting the heavier articles of freight."

Steamboat vs. Railroad Speed.

The steamer *New World*, under command of Capt. ACKER, made a quick run from New York by this city yesterday. She left her dock at the former place at five minutes past seven o'clock, and arrived opposite her berth in this city at two o'clock and thirty-six minutes. The eight o'clock train from New York on the Hudson River road passed the *New World* a few miles from the city, but the passengers only reached this city a few minutes before the *New World* landed hers. The *New World* has made the quickest trip on record. Seven hours and thirty-one minutes is her time from dock to dock. She made six landings, each of which occupied on an average about six minutes, making her running time *six hours and fifty-five minutes!* This is nearly equal to railway speed.—*Albany Jour.*

Trial of Locomotives.

We copy from the Boston Courier the following account of the trial which recently came off on the Lowell railroad, to test the comparative speed of several locomotive engines. A subsequent trial has also been had upon the same road to test the capacity for draft of several freight engines. A committee, composed of practical and scientific men, was appointed for the purpose of preparing a report, which has not yet been made public.—When it appears, we shall present our readers with a copy.

A locomotive race is an unusual occurrence; in fact, we believe nothing of the precise kind of this one ever took place in this country. There were to be two trials, one for speed and the other for draught. The one for speed came off on Wednesday, Oct. 4th, and drew together a large number of spectators.

The course of the race was on the Lowell railroad, commencing at the Wilmington depot, or 15th mile post, and terminating at the 24th mile post in Lowell—running distance exactly 8 miles and 3616 feet. Each engine drew a train of 170,000 pounds, or 85 tons, exclusive of its own weight and that of the tender, equal to six large passenger cars loaded.

The regulations were as follows: The balances to be tested on all engines, and result of the examination to be recorded.

The engines to work at near 100 pounds per square inch as may be, but may work at pressures at between 80 and 120 pounds if required, the difference to be recorded, and the pressure to be maintained at the initial pressure, during the experiment.

The load to be constant, and equal to six loaded passenger cars. The test to be by the speed with which the constant load is carried over a certain distance, said speed being corrected according to the weight of the engines.

The following engines competed:—The Addison Gilmore, 26 tons, with one pair of driving wheels,

6 feet 9 inches in diameter—built six months ago at Springfield, by the Western railroad co.; the Nathan Hale, 23½ tons, 2 pair driving wheels 5½ feet diameter, built at Wilmarth's Union Works, South Boston, and run on the Worcester road; the Neponset, 21½ tons, 2 pair driving wheels 5½ feet diameter, built by Griggs, and run on Providence road; the Addison Gilmore, 23 tons, built by O. W. Bayley, Manchester, N. H., 2 pair driving wheels, 6½ feet in diameter, and run on Connecticut and Passumpsic River roads; the Union, 23 tons, built at the Boston Locomotive Works, and run on the Fitchburg road; and the Essex, 24½ tons, 1 pair drivers, 6 feet 2 inches, built by the Essex company, Lawrence, and run on the Lowell road.

The Neponset made the distance in 13 minutes 11 seconds—performing her quickest single mile in 1 minute 24 4-10 seconds, and at an average speed of forty miles per hour. She carried a pressure of 100 pounds of steam.

The Nathan Hale, 11 minutes 38 seconds and 2-10, quickest mile 1 minute 15 6-10 seconds.—Average speed, 45 miles per hour. The N. H. carried 120 pounds of steam.

The Addison Gilmore, of the Western railroad, 12 minutes 11 seconds and 3-10, quickest mile 1 minute 11 6-10 seconds. Average 47 miles per hour. Pressure of steam, 100 pounds all the way.

The Union, Time, 12m. 40 6-10s. Quickest mile 1m. 18 6-10s. Average speed 41 miles per hour. Pressure of steam 102 pounds.

The Addison Gilmore. Passumpsic river railroad. Time 12m. 10 9-10s. Quickest mile, 1m. 17s. Average speed 43 miles per hour. She started with 112 pounds steam, but it was not known how much she kept up. She is entirely new, and was run almost for the first time.

The Essex, 13 minutes 23 seconds—shortest single mile 1m. 26 7-10 seconds.

Pennsylvania.

Sunbury and Erie Railroad.—The citizens of Erie have held a meeting, at which resolutions were passed in favor of Erie county subscribing \$200,000, and the city of Erie subscribing \$300,000 towards the completion of the Sunbury and Erie railroad.

Hempfield Railroad.—The people of Washington county, Pa., have, in a series of resolutions, adopted at a public meeting, held on the 18th ult., at Cannonsburg, expressed their opposition to the proposed subscription by the county of \$200,000 to the capital stock of the above named road. Among the resolutions adopted was the following.

"That we regard Pittsburgh as the great commercial mart of western Pennsylvania, and the contiguous portions of adjoining States; that it is an act of questionable utility for the community to do anything that will either directly or indirectly retard the prosperity of Pittsburgh, which constitutes both an important home market, and ready communication with the east."

Reading Railroad.—The Pottsville Mining Register, speaking of the operations of the road for the past year, and of the improvement effected by the introduction of coal-burning engines, says:

"The most notable feature in the economical administration of affairs on the Reading railway, is the improvement in the locomotives in use, having for its object the substitution of anthracite coal in place of wood, which has now become a scarce and valuable article. The improvement purports to be the invention of Mr. Millholland, director of the railway. It has been thoroughly and practically tested, and the result is, an order for its adoption in all engines in use on the road. This is important to railways generally. A writer in the Ledger says the economical value of the Millholland improvement may be approximated thus:—

The three altered engines were made by Winans, and they consumed 9½ tons of coal each, in the

round trip, with a full train of coal cars. The same engines, as altered, do the same service now with six tons of coal, besides saving the fire box and tubes; and it is inferred that a new engine, built expressly, would not consume over 5 tons.

The Reading company has over 90 road engines, all but 9 burn wood, using 14 cords, average, in the round trip.

Then say, 14 cords wood at \$4, sawed, split and put into the tender.....\$56 00
Against 6 tons coal, delivered at \$2..... 12 00

Shows a saving of.....\$44 00
on each trip of each engine, or about 10c. per ton of coal carried, counting 440 tons to the train! and two millions of tons of coal at 10c. makes an annual saving of \$200,000!

The expense of altering an ordinary iron-tubed wood engine is \$1000. If it have copper tubes, allowing their value as old copper, the cost would not exceed \$200—iron tubes being preferred in the improved boiler.

Indiana.

Jeffersonville Railroad.—The work on this road is still going ahead vigorously, although much inconvenience is experienced, in consequence of the difficulty of getting their iron from Cincinnati, on account of the very low water. The large engine-depot at Jeffersonville, the car-shop, and the blacksmith, are all completed. They are built of brick, in the very best style, and of the most substantial character. The materials for the large freight depot are being hauled to the ground, and it will soon be erected.

The cars continue their regular trips to Vienna, and the business is constantly increasing, and gives an earnest of what may be expected when the road is completed. It is managed in a business-like, and at the same time, the most economical manner nor the slightest accident ever having occurred on the road, and we see nothing to prevent it being the best paying road in the whole country. We look with great anxiety for the announcement of its completion, which will be during the coming spring.—*Louisville Courier.*

Peru and Indianapolis Railroad.—The grading of the whole of this Road, from Noblesville to Peru, has been awarded, with the exception, perhaps, of some half dozen sections which are very light. Mr. Prall, one of the New York company who have taken the contract of completing the road ready for the cars, is here, making the necessary arrangements for a vigorous prosecution of the work. By the terms of the arrangements between them and our company, the road is to be ready for the cars by November, 1852, but by a second arrangement they will finish it some six weeks earlier if possible.

G. L. Dart has the contract of building the bridge across the Wabash, and the earth work from that point to the depot. He has already commenced operations and intends getting up one of the piers this fall. Masons, stone cutters, quarrymen and laborers, will find constant employment, good wages, and prompt pay, on this work, and as the health of the country is good, we think they will do well to come this way.

The engineers completed the location of the road to-day, from the crossing of the river to the depot.

We may now regard the road as fairly under way and look for its completion by the time designated with every degree of assurance.—*Miami Co. Sentinel.*

Indianapolis and Terre Haute Railroad.—The iron is already laid on this road for a distance of nearly forty miles, more than half its entire length. It is to be laid down hereafter at the rate of five miles per week, so that if there is no unexpected interruption the road will be in running order through to Terre Haute about the middle of November.

Railroad Depot.—Under the general superintendence of the President of the road, Mr. Rose, the depot for the Terre Haute and Indianapolis Rail-

railroad at this place, is progressing finely. The masons will be through with the brick work in about two weeks, and the whole work pushed through to an early completion.—*Terre Haute Journal*.

The Depot for the same Road in this city is now being rapidly built. It will, from appearances, be finished in about a month.—*State Journal*.

Kosciusko, Elkhart, and Miami Railroad.—We learn from the Kosciusko Republican of the 25th ult., that up to that time there had been \$33,000 subscribed to the capital stock of the Kosciusko, Elkhart, and Miami Railroad [from Peru to Goshen.] The Republican says that \$60,000 will insure the road.

We learn from a gentleman who is correctly informed, that the subscription now amounts to over \$40,000.

Lafayette and Indianapolis Railroad.—Two hundred and sixty one thousand pounds of railroad iron for "our" railroads, were shipped from Toledo on Thursday last. Mr. White, President of the Lafayette and Indianapolis road, informs us that the laying of the iron track will be commenced some time this week.—*Laf. Cour. 29th ult.*

New Railroad Route.—There will soon be a new route from Lafayette to this city, the greater part of which can be travelled by railroad, viz: Indianapolis and Terre Haute railroad to Greencastle; 28 miles stage travel to Crawfordsville; and railroad from there to Lafayette. The whole distance will be about 94 miles, and the State road from Greencastle to Crawfordsville is better than from here to Crawfordsville. This route can probably be travelled by New Year's day—perhaps sooner. We think it will be much travelled, until the direct railroad is completed from here to Lafayette.—*Sentinel*.

The locomotive for the Lawrenceburgh and Indianapolis railroad has arrived at the former place, and the work of laying down the track will commence very soon.

From the Albany Evening Journal.
The Southwestern Trade.

LOUISVILLE, October 1, 1851.

T. WEED, Esq.:

In the views I have heretofore presented, in the hope of showing with mathematical certainty that a full share of the carrying trade of the southwest was completely within the grasp of the northern or lake route, I confined myself entirely to the domestic or home consumption of cotton and tobacco to be transported over your State works, leaving the foreign consumption to go entirely by the New Orleans or southern route. A careful investigation, however, of the question, has demonstrated conclusively to my mind, that the Manchester spinner is equally to be benefitted with the Lowell spinner, by purchasing his cotton at Memphis or Louisville. If I can show this, then I augment the importance to the State of New York to secure by permanent arrangements this southwestern trade, as in addition to the advantage derived therefrom by your State public works, it will ensure to the shipping interest of the port of New York.

I propose to prove by figures, into the correctness of which I challenge the closest scrutiny by all adverse interests, that cotton purchased on account of a Manchester spinner, either at Memphis, Tenn., or Louisville, Ky., can be put at Liverpool, via the northern route to New York, and thence to Liverpool, cheaper than if purchased at the city of New Orleans and sent direct from there to England.—This I intend doing by the following tables, which have been prepared with great care, and by the assistance of one of the most experienced cotton factors in this whole region of country. In preparing these tables, I have taken as the period of shipment the first of May, so as to leave full time for the opening of your canal navigation; if this is too late a period, then my tables will apply equally to any earlier time that your canals, by Buffalo and Oswego, are prepared for navigation.

Here is a *pro forma* invoice of 500 bales of cotton, supposed to be purchased for a Manchester spinner in the city of New Orleans by order of his

agent in New York, and shipped thence to Liverpool:

500 bales cotton, weighing 250,000 lbs., at 8c. per lb., is	\$20,000 00
CHARGES.	
Brokerage, commissions, drayage and shipping, \$1 per bale.	\$500 00
Loss in exchange, say in paying \$20,500 by draft on N. York, at 60 days, at 2½ per cent discount	512 50
Freight to Liverpool, average ½d., say \$1 per 100 lbs.	2500 00
Insurance to Liverpool from N. Orleans, 1½ per cent on \$24,000	360 00
	<hr/> 3,872 50

Making actual cost of 500 bales bought in N. Orleans, and delivered in Liverpool

I now propose to take the cost of the same number of bales of cotton, purchased at the same time and on the same account as the first above invoice, at Louisville, Ky., and then see on which side is the balance:

500 bales cotton, weighing 250,000 lbs., at 8c. per lb. in Louisville, Ky.	\$20,000 00
CHARGES.	
Brokerage and commissions for buying and shipping, 50c. per bale, is	\$250 00
Drayage at 6½c. per bale	32 00
Discount on 60 days' draft on New York for \$20,825 50, amt of costs and charges	202 83
Transportation to New York, at 50c. per 100 lbs.—estimated for next season	1250 00
Insurance from Louisville to N. York, on \$22,000, at ½ per ct.	110 00
Expenses receiving and putting on shipboard in New York ..	100 00
Freight from New York to Liverpool, 35c. per 100 lbs.	875 00
Insurance from New York to Liverpool by steam, on \$22,000, at ½ per cent	165 00
	<hr/> 2,985 33

Making total cost of 500 bales bought in Louisville, Ky., and delivered in Liverpool

Thus it will be seen, that while the cost of 500 bales of cotton, bought in New Orleans and shipped direct to Liverpool, is \$23,872 50, the cost of the same number of bales bought in Louisville, and sent to New York by the northern route, and thence by New York tonnage to Liverpool, is but \$22,985 33, showing a difference in costs, expenses and charges of \$887 17—more than a dollar and a half per bale in favor of the purchase made at Louisville. My object is to elicit investigation, and if there is any error in the Louisville table, or any charge that is underrated, I hope it will be pointed out. This is a new field of exploration, and may by many be regarded as chimerical; but before I am done, I intend to prove, by the concessions of the New Orleans commercial community, that they have already become seriously alarmed at the superior facilities that the northern route holds out over their own, and that they are now making the most strenuous and energetic efforts to counteract the influences that are at work to destroy their commerce, both foreign and inland. All that surprises me is, that more concert of action has not been had by your own State and Ohio, to turn thousands instead of hundreds of tons of freight from this direction through your artificial channels that reach the seaboard.

I purpose now to prove in the same manner that cotton purchased at Memphis, Tenn., and sent by the northern route to New York, and hence to Liverpool, will produce a still greater saving than what I have shown can be made by purchasing at Louisville. The table above, showing the cost of 500 bales of cotton bought at New Orleans for Liverpool, need not be recapitulated here, as in all things it would be the same. Its cost, as shown is \$23,872 50.

The following is a *pro forma* invoice for the same quantity of cotton, bought May 1, 1852, at Memphis, Tenn., and sent to Liverpool via Louisville, the Ohio and New York canals to New York, and thence to Liverpool:

500 bales weighing 250,000 lbs., at 7½ per cent per lb., is	\$19,062 50
CHARGES.	
Brokerage, com. for buying and shipping, 50c. per bale	\$250
Discount on draft at 60 days on N. York, 1 per cent on \$20,000	200
Drayage, 5 cents per bale	25
Freight to Louisville, \$1 per bale ..	500
Commissions and drayage in Louisville, 16 per cent per bale	80
Transportation from Louisville to N. York, 50c. per 100 lbs.	1250
Insurance from Memphis to New York on \$21,000, at 1 per cent ..	210
Drayage and shipping same at N. York, 20 cents per bale	100
Insurance from N. York to Liverpool by steam, on \$22,000, at ½ per cent	165
Freight from New York to Liverpool, at 35 per cent per 100 lbs.	875
Making total cost of 500 bales cotton bought at Memphis and delivered in Liverpool via N. Y. canal	<hr/> \$22,717 50

Thus it will be seen that the difference in favor of the Memphis purchase over the New Orleans purchase is \$1,155, or upwards of two dollars a bale! Why then is it, with these decided advantages of sending cotton and tobacco by the northern or lake routes, whether intended for a home consumption or a foreign market, there is so little practical interest taken in it by your canal board, and railroad companies, when, if once turned your way, it would prove a more prolific source of revenue to you, and advantage to your commercial and shipping interests, than the mind has scarce the power to scope?

I have tables prepared, showing a saving to the shipper of tobacco to a foreign market by taking the canal and lake routes from this city, of over four dollars a hoghead, than if purchased and sent from New Orleans; but the fear of wearying your patience alone restrains me from embracing them in this communication.

Let me for a moment show you the alarm that pervades the New Orleans commercial community, and the gradual decline that is taking place in their commerce. You are aware they are now struggling to get up a great Southwestern railroad convention, to convene in New Orleans in January next, to devise means, by carrying forward railroad enterprises throughout the entire west, to draw to them the rich trade of the valleys of the Ohio and the Mississippi, and to prevent its seeking a market through the northern channel of communication with the Atlantic cities. They appointed a committee of their eminent and prominent citizens, who have put forth two very able and elaborate appeals to the sectional prejudices of the southwest, the first of which is contained in the August number of DeBow's Commercial Review, and the last in the number of September.

In the first address is to be found a table showing the increase of western produce reaching New Orleans from 1842 to 1850, and the increase during the same period that has passed through the New York canals, and the result is, a comparative increase by New York canals of 25 per cent over New Orleans, in 8 years! And now, with the prospect of tobacco and cotton leaving them, to a certain extent, no wonder can be excited at the struggles they are making to save themselves. Here is their own table, demonstrating the above result:

Produce from the west, received by the New York canals for the year of 1842	\$22,751,013
Produce from the west, received by New York canals for the year 1850	\$55,474,937
An increase during the 8 years of 145 per cent.	
Produce from the west received at New Orleans for the year of 1842	\$43,716,045
Produce from the west received at New Orleans for the year of 1850	\$96,897,873

An increase during the 8 years of 120 per cent, and 25 cent less than by your canals.

In their address 'to the people of Louisiana,' contained in the September number of De Bow's Commercial Review, this committee admonishes their citizens that "New Orleans, once the Emporium and mart of the immense Empire of the West, sees her commercial rank and position fading away in the triumphant struggles of a host of formidable rivals!" And to show "that the commerce of the city has not increased," they exhibit a table showing the following decrease of vessels, steamboats, flats, and tonnage in the year 1850 as compared with that of 1849.

I merely give the result, instead of setting out the table in detail. The decrease in 1850, in comparison with 1849, was as follows:—In arrivals, 572 flat boats, 89 steamboats, 175 American vessels and 216 coastwise vessels. Of foreign vessels there was an increase of 34. The decrease in tonnage for 1850 was: 65,677,07 American, 24,852,08 Foreign and 49,773,61 Coastwise. And the address in giving this table and these results, adds:—"The comparison of these years must not be considered as an isolated case; but, on the contrary is too true an expose of the course of trade of the city, for several years past!" Need I adduce further testimony, at this time, of the correctness of the views I have heretofore urged through your columns, that the Southwestern carrying trade is within your control if you will make an exertion to obtain it? If I appear unusually importunate upon this subject, it is only because from reflection and examination, I have become satisfied of its vastness and importance alike to the Southwest and to the Empire State.

A CITIZEN OF KENTUCKY.

Allegheny Valley Rail Road.

The Cincinnati Gazette, speaking of the projected railroad through the Valley of the Allegheny, says:

"This line will pass a rich iron section, and the very heart of the great lumber region on the Allegheny, and must effect an entire revolution in the lumber business. Boards will be seasoned and dressed, when they are sawed, and sent this way to market ready for use, instead of being rafted down here undressed, to be seasoned and dressed here; and where the line is opened, we may stand some chance of being able to send up flour and pork in exchange for lumber—instead of paying cash as heretofore."

The Pittsburgh Gazette, after copying the above, adds—"Not only would the towns and cities on the Allegheny and Ohio receive their lumber clean and dry from the mills where it is manufactured, but it would be carried by other roads to the interior of Ohio, to the great benefit of all parties.

At present large quantities of lumber are carried on the New York and Erie Railroad from the head waters of the Allegheny to the city of New York, and the trade is found to be very profitable, although the distance is over 300 miles. At New York, this lumber comes in competition with the lumber from the Kennebec and Penobscott where it is carried in schooners directly from the mills, which are generally located at or near the head of tide water. This fact shows the capacity of railroads to compete successfully with almost every mode of conveyance."

Railroad from Louisville to St. Louis.

A writer in the Louisville Courier, writing from Salem (Ia.) urges upon the citizens of Louisville the importance of their making a decisive move for the construction of a railroad from Louisville to connect with the road from New Albany, which would give them a connection with St. Louis. The writer says:—"The New Albany and Salem Railroad Company have now fifty miles of road completed, and in less than four weeks the cars will be running to Orleans—a distance of fifty-eight miles from New Albany. By looking at the map of this road, it will be seen that it runs almost West from Salem to Orleans.

The point I wish to call particular attention to is the advantages offered for a direct communication with St. Louis.

It is now certain that the Illinois portion of the New Albany, Mr. Carmel and Illinoistown Railroad will be made, the stock being already taken and the lettings advertised. The distance from Orleans to Princeton is about sixty five miles; to Mr. Carmel about seventy. By the construction of this short connecting link, a direct communication is opened from Louisville to St. Louis.—*Balti. Patriot.*

To Stone Masons.

THE NEW ALBANY AND SALEM RAILROAD Company have about 10,000 c. yards of Abutment Masonry to let at private contract, to be completed by the 1st of July, 1852.

To contractors who can produce testimonials of character for ability as STONE MASONS, fair, remunerating prices will be given.

Early applicants, by securing the work now offered, will gain advantages over competitors for the erection of an additional 15,000 yards, to be let out early next spring, in bridging the streams between Bedford and Michigan City, via Bloomington, Gosport, Crawfordsville and Lafayette, (the most productive and healthy region in Indiana,) by the knowledge they will have acquired of the resources of the country.

Application may be made in person, or by letter addressed to the undersigned, at New Albany, Indiana.

S. B. WILSON, Engineer.
Engineer's Office, New Albany, }
Sept. 29th, 1851.

LOWMOOR IRON.

THE LOWMOOR IRON COMPANY having appointed WM. BAILEY LANG their sole agent in America and Canada, he is now prepared to receive and execute all orders for Railway Tire Bars, bent, welded, and blocked Railway Tires, Axles, Piston Rods, and Boiler Plates. Also, plain, angle, rivet and every other description of Lowmoor Iron.

All communications respecting the above are requested to be sent to Wm. Bailey Lang, at his Steel Warehouse, No. 9 Liberty Square, Boston, or to the Lowmoor Iron Works, Bradford, Yorkshire, England. 30th Sept., 1851.

RAILROAD SPRINGS.

Fuller's Patent India-rubber Springs.

PRICE reduced to 50 cents per pound. The owners of this Patent now manufacture the Springs in their own Factory, and guarantee that each spring shall perform its required duty.

Purchasers guaranteed against adverse claims. They may have full confidence in the working qualities of the springs.

The suits brought against Ray & Co., will soon be brought to issue, and we await the result with satisfaction, having full confidence in the pure administration of the Laws.

The long advertisements put forth by Ray & Co. about prior invention of the spring are worthless; he has not proved prior invention, and cannot sustain his patent in a Court of Law.

For the owners of Fuller's Patent,
G. M. KNEVITT,
23 Courtlandt st., New York.

October 7, 1851.

Railroad Iron.

THE undersigned are prepared to enter into contracts now at specific prices, to deliver Railroad Iron during the coming Winter and Spring, free on board at the shipping ports in Wales, or at ports in the United States.

CHOUTEAU, MERLE & SANFORD,
Sept. 30, 1851. No. 51 New st.

Railroad Iron.

THE undersigned offer for sale 1000 tons Railroad Iron, now ready for delivery from ship "Niobe."

CHOUTEAU, MERLE & SANFORD,
Oct. 1, 1851. 51 New st.

To Contractors.

A DIVISION of about 30 miles of the grading, together with the mechanical works of the South Side Railroad, commencing near Farmville, and extending westward, will be let on the 15th of October next, at Farmville.

C. O. SANFORD, Chief Engineer.
Petersburg, September 4th, 1851.

Pneumatic process for making Foundations for Bridges, Piers, etc.

THE Attention of Engineers, Contractors, and Bridge Builders, etc., is directed to this method of forming secure foundations. Hollow Cylindrical piles from 8 inches to 10 feet in diameter may be sunk through sand, mud, clay, etc., to any required depth, and filled with concrete or masonry.

The efficacy and economy of the process has been demonstrated in the construction of numerous permanent works, at a much less cost than the use of any other method. (See evidence in Parliamentary enquiry, Railroad Journal, April 19, 1851.)

Contracts made, or licenses granted for the use of the invention in any part of the United States, by
CHARLES PONTEZ,
34 Liberty street, N. Y.

To Contractors.

York and Cumberland Railroad, Maine.

Portland, Sept. 12th, 1851.

PROPOSALS will be received at the office of the York & Cumberland Railroad Company in this city, from the 10th to the 15th day of Oct. next, for the grading, masonry and bridging of the York and Cumberland Railroad from Gorham Station to Great Falls, a distance of about 38 miles. Proposals will also be received at the same time and place, for building the entire line of said road, including the superstructure, or any one or more divisions thereof.

Plans, profiles and specifications will be exhibited, and all requisite information given at the office of the company, in Portland, on and after the 10th of October next.

Trains have run from Portland to Gorham during the past season; work has also been done to a considerable extent at the western end of the line, between Great Falls and Springvale.

The York and Cumberland Railroad when completed will be the great interior line—in connection with the Boston and Maine Railroad—between Portland and Boston, and will command the principal travel between the two cities.

By order of the Board of Directors,
JOHN A. POOR, President,
JOHN F. ANDERSON,
September 15. Chief Engineer.

Railroad Iron.

THE undersigned, Agents for British Manufacturers, continue to sell Railroad Iron of the best quality, and of any weight or pattern required; deliverable at any part of the United States or Canada.

They have now on hand, ready for delivery at New York:

2,000 tons of an approved pattern, weighing about 60 lbs. to the yard.

WM. F. WELD & CO.,
42 Central Wharf, Boston.

RAILROAD SPRINGS.

Fuller's India-rubber Springs.

THESE are now made in our own Factory, of the best materials. Each spring is guaranteed to perform the required work. Purchasers guaranteed against adverse claims.

Car Builders will save great expense by calling at the office of the Company.

23 Courtlandt St., New York.

To Railroad Companies.

THE undersigned has discovered and patented an imperishable, cheap, and sufficiently elastic substance, to be introduced between the sill and rail, so that the stone sill can be used in place of the wooden sill: entirely overcoming that rigidity where the rail is laid directly on stone. Address
J. B. GRAY, Philadelphia.

July 10, 1851.

4m

Bridges & Brother, DEALERS IN **RAILROAD AND CAR FINDINGS,** 64 Courtlandt street, New York.

Having established a general Depot for the sale of articles used in the construction of Railroads, Locomotive Engines and Railroad Cars, we would invite your attention to our establishment. We have already in store a good assortment of CAR FINDINGS and other articles used in the trade, and feel justified in saying, that should you desire anything in our line, we can supply on terms perfectly satisfactory, and in the event of your desiring to order, you may feel assured that your terms will be as good as though you were here to make your own purchases.

Among our goods may be found Railroad Car Wheels, Axles, Jaws and Boxes, Nuts and Washers, Bolts, Brass Seat Hooks and Rivets, Window and Blind Springs, Lifters and Catchers, Door Locks, Knobs and Butts, Ventilators and Rings, Car Lamps, Coach and Wood Screws, Jack and Bed Screws and Babbitt's Metal; also Plushes, Damask, Enameled Head Linings, Cotton Duck for Top Covering in width sufficient without seams, Curled Hair and all other articles appertaining to cars.

Also a new and valuable CAR DOOR LOCK, well adapted to the Sliding Door. This is decidedly the best yet introduced.

LOCOMOTIVE ENGINE LANTERNS, the best article made in the country. Whistles, Gauge and Oil Cocks, Hemp Packing, American, Russian and Italian. We are also agents for Lightner's Patent Journal Box for Car Axles, that invaluable invention, for the economical use and preservation of Car Journals.

Coach VARNISH and Japan of the best quality.

We would also offer our services for the purchase as well as for the sale of goods on commission.—Both members of our firm have had the experience of many years in the manufacture of Railroad Cars, and our Senior was a member of the well known house of DAVENPORT & BRIDGES, Car Manufacturers, Cambridgeport, Mass. With our knowledge of matters pertaining to Railroads, we feel quite confident in giving satisfaction to both buyer and seller, and hope that through assiduity and attention to any business entrusted to our care we shall merit a continuance of confidence and patronage.

BRIDGES & BROTHER.

July 22, 1851.

Lightner's Patent Axle Boxes.

THE Undersigned are Agents for, and offer for sale, *Lightner's Patent Axle Boxes*, for Railroad Cars and Tenders, which have, by thorough experience, been demonstrated to be one of the most valuable improvements ever introduced in Locomotion. The saving effected in oil alone, will in a few months pay the first cost of these boxes, independent of other advantages. They are now in use upon the following, among other roads, viz:

Boston and Worcester, Boston and Providence, Boston and Fitchburgh, Nashua and Lowell, Providence and Worcester, Northern, N.H., Cheshire, Manchester and Lawrence, Concord, N.H., Concord and Claremont, Ogdensburg, (Northern, N.Y.) Stonington, New London Willimantic and Palmer, New Jersey Central, New Hampshire Central, Worcester and Nashua, Fitchburg and Worcester, Connecticut and Passumpsic, Lowell and Lawrence, Salem and Lowell, Wilton Branch, Newburyport.

Below will be found the certificates of a number of gentlemen, whose opinions will be good authority in every part of the country.

Office Boston and Prov. R. R., }
Boston, Dec. 23, 1849. }

Mr. JOHN LIGHTNER,

Sir,—It affords me pleasure to say, that after two years' trial of your boxes, I am fully and entirely satisfied of their superiority over any other pattern we have used. This superiority consists in economy of oil and freedom from "heating." I have tried every pattern of box in use, of any note, and do not hesitate to say, that you have devised one which in every respect combines greater advantages than any other within my knowledge; these advantages are so manifest, that I am fitting up all

our cars with your boxes, as fast as practicable.

Annexed, is a statement of an experiment with your boxes, the result of which may be of use to your interests.

Ten passenger cars, running 72 wheels, fitted up with Lightner's boxes used 41½ pints of Patent Oil, at 50 cts. per gallon, ran 43,099 miles, equal to 5-18 pints per wheel for 43,099 miles. Speed, 30 to 40 miles per hour.

Very respectfully yours,

W. RAYMOND LEE, Supt.

I have examined the above statement of Mr. Lee, and fully concur with him in his opinion of the superiority of Lightner's box.

GEORGE S. GRIGGS,

Supt. Machine Shop B. & P. R. R.

Boston, July 26, 1849.

This is to certify that J. Lightner's axle boxes for railroad cars and locomotive tenders, have been in use on the Boston and Worcester railroad one year, and I unhesitatingly pronounce it, in my opinion, the best and most economical one in use, requiring less oil, of easy application, not susceptible of derangement, as in most kinds in use. When requiring repairs or renewal, the same may be done in one-fourth of the time usually occupied for that purpose. The box requires oiling not oftener than once a month—is kept quite free from dust, and consequently wears much longer than those generally in use.

D. N. PICKERING,

Supt. Motive Power, B. & W. R. R.

Office of Boston Locomotive Works, }
December 12th, 1849. }

The Boston Locomotive Company have been using J. Lightner's patent axle boxes under the tenders of their engines for several months, and find them more highly spoken of by the railroad companies that have used them in regard to economy in the use of oil, their durability and their ease of adjustment, than any other boxes which they have used. We therefore do not hesitate to recommend them to all railroad companies.

DANIEL F. CHILD,

Treas. Boston Locomotive Works.

Taunton Locomotive Works, }
Taunton, July 7, 1849. }

Mr. H. F. ALEXANDER,

Dear Sir,—Your favor of yesterday came to hand in which you ask what success we have met with, in using Mr. Lightner's patent box for cars, engines, &c.

We have put it in use on the Boston and Providence railroad, New Bedford and Taunton Branch railroad, Central railroad, N. J., Norfolk County, Rutland and Burlington, and as yet we have not had one complaint from them; and from what we have used of it, and witnessed, we do not hesitate to say that it is superior to anything in use for that purpose. It is simple in its construction, and easy of access, and the reservoir is held close to the shaft, and the oil and journal is perfectly secure from dust; they will run from four to six weeks without replenishing the oil. The brass in the box is changed very much easier than by any other plan that we have seen.

Very resp. yours,

W. W. FAIRBANKS, Agent.

Office Providence & Worcester R. R. Co., }
Providence, Dec. 17th, 1850. }

H. F. ALEXANDER, Esq.,

Sir,—The "Lightner patent boxes" for cars and locomotives have been in use under a portion of the passenger cars and engines of this company for upwards of two years, and have given very great satisfaction.

Though combining many excellent qualities, their great superiority consists in the economy of oil.

The result of experiments upon this road shows the consumption of oil by the use of this box, to be not more than one sixth part the quantity consumed by the use of the common box.

With the common box, eight passenger cars, 64 wheels, running 90 miles per day, consumed in 12 months 520 gallons of oil, being an average of 8½ gallon per wheel per annum.

With the Lightner box the same cars running the same number of miles per day, during the same space of time consumed 73½ gallons of oil, being an average of 1½ gallon per wheel per annum.

So manifest are its advantages over any other box used by this company, it is intended to place it under all our cars as soon as practicable.

Besides the saving of oil, as they afford complete security from dust, we think them more durable than any other box in use.

Another advantage resulting from the use of this box is, cars run more easier than with the common box. The saving in fuel which it would effect, would of itself, we think be a sufficient inducement to use this box in preference to any other known to us.

Very respectfully,

ISAAC H. SOUTHWICK, Supt.

JOHN B. WINSLOW,
Supt. Machine Shop, P. & W. R. R.

Cambridgeport, April 5th, 1851.

H. F. ALEXANDER, Esq.

Sir,—This may certify that I have been engaged in the manufacture of railway cars since 1834, and have built for the different railroad companies cars of all descriptions to the amount of three millions of dollars, and have used on the above cars all kinds of journal boxes, and find that none give better satisfaction than the "Lightner patent box," both on account of the saving of oil and the arrangement for taking out and re-placing the composition by means of the sliding key, and other conveniences which no other box possesses.

Yours respectfully,

CHARLES DAVENPORT.

Worcester, March 17th, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—This is to certify that I have been for some years past engaged in building cars, and that I have tried most, if not all of the patent boxes, and have found Lightner's patent superior to all others as far as the saving of oil is concerned, also the ease with which they are fitted and exchanged in case they get out of order.

For the last three years, I have put them under all of the cars I have built, and in every instance they have given the most entire satisfaction.

Yours truly,

OSGOOD BRADLEY.

Office Union Works, So. Boston, }
May 23d, 1851. }

This certifies that I have applied Mr. J. Lightner's patent axle boxes to my locomotives and tenders for the past two years. I consider them superior to all others,—economical in their use, and possessing many important advantages not found in any other boxes.

SETH WILMARTH.

Office 15, R. R. Exchange, Boston, }
June 1, 1851. }

This is to certify, that we have known the success of Lightner's patent journal boxes upon various roads in New England the past three years, and have been led to examine their peculiar construction.—We are well satisfied of their merits, and have adopted them upon our small gravel cars, and take pleasure, as we ever have done, in recommending their use upon all roads where we are employed in the construction.

GILMORE & CARPENTER,
Contractors.

Amoskeag Manufacturing Co. Machine Shop, }
Manchester, May 31, 1851. }

H. F. ALEXANDER, Esq.

Dear Sir,—We are using the Lightner box on all the engines and tenders we build, and we are satisfied that it is the best box in use, and recommend the same to all those who purchase engines at our works.

Yours respectfully,

O. W. BAYLEY, Agt.

This is to certify that the Fitchburg railroad company having become satisfied of the superiority of J. Lightner's patent Axle Boxes for Railway Cars and Locomotive Tenders adopted the same

and are bringing them into general use upon their road.

One year's experience with the above improvement, has fully convinced me that there has never been anything offered to the public for that purpose which possess such intrinsic value; in fact, this is an improvement which seems to overcome all the difficulties found in all the various kinds now in use. It possesses very many advantages over all others: Some of which are [first] the first cost is much less than that of most boxes in use. [Secondly] 75 per cent is saved in oil; one gill applied to each Journal once a month, or one quart to an eight wheel car, is all these boxes require per month [Thirdly] no dust can gain access to the Journal, which is constantly lubricated with clean oil; hence the saving in repairs of Journals and composition bearings, is a matter of importance. [Fourthly,] its construction is truly simple—not complicated, having nothing liable to become loose by constant and severe service. [Fifthly] for convenience there is nothing which approaches this improvement.—The composition bearings may be removed from the Journals of an eight wheel car, by one man, and returned, or duplicates, in twenty minutes, while under the car: the same would require two men, at least half a day with other boxes in use.—The trucks and wheels using these boxes, are free from oil and dirt, usually seen upon all railroad cars, at great expense to the corporation.

NATH'L JACKSON.

Supt. Car Building and Repairs, F.R.R. Co.

Boston, March 9, 1849.

I hereby certify, that I have examined a box for Car Journals, invented by Mr. Lightner of Roxbury, Mass., and I have thought so well of it that I have adopted it on our railroad, I have known of its success on other roads.

S. M. FELTON,

Supt. F. R. R.

Office of the Central R. R., N. J., }
Elizabethtown, May 1849. }

H. F. ALEXANDER, Esq.,

Dear Sir:—Your favor, [wishing to be informed how we liked Lightner's patent axle boxes for R.R. Journals,] has been duly received; in answer we would say, we have used the boxes on Locomotive tenders one year, more or less, and on our cars some six months. I consider them the best boxes in every respect, I have ever used, or even seen used on any other roads—for safety, durability and the economy pertaining to all the details connected with the boxes and Journals of R. R. Car wheels; and we shall adopt them upon this road.

Yours Respectfully,

JOHN O. STEARNS.

Supt. Central Railroad Co., N. J.

Manchester, N. H., Nov. }
1st, 1850. }

H. F. Alexander, Sir,

I have used "Lightner's Boxes" under all the Cars of the Manchester and Lawrence railroad, and feel no hesitation in saying that I think them to be the best boxes now in use.

Yours, &c.,

THEODORE ATKINSON, Agent.

Cheshire R. R. Office, Keene, }
March 5th, 1851. }

Mr. H. F. Alexander,

Sir,—Lightner's Patent Boxes have been used on the Cheshire R. R. about a year, and have given the highest degree of satisfaction.

All the Passenger Cars now in use, and a considerable number of Merchandize Cars are furnished with them, and they will take the place of the Common Boxes on all the cars as fast as circumstances will permit.

Very Resp't.

L. TILTON,

Supt. Cheshire R. R.

Boston and Worcester Railroad, }
Boston, April 1st, 1851. }

H. F. Alexander, Esq.,

Dear Sir,—Lightner's Patent oil saving box for railroad cars, has been adopted by this corporation; we are taking out the common and substituting the

Lightner's at the rate of fifty boxes per month; it will soon take the place of all others, as it is decidedly preferable to any heretofore used by this corporation.

G. TWITCHELL, Supt.

Statement of amount of oil used on 32 8-wheel freight cars, on the Boston and Providence Railroad (with Lightner's Boxes) from March 10, 1849, to February 27, 1851, and upon 12 8-wheeled passenger cars from September 8, 1849, to February 27, 1851.

FREIGHT CARS.

Amount Oil.	No. months.	Amount Oil.	No. months.
1.—21 pts.	10	17.—23½ pts.	14
2.—19 " "	6	18.—23½ " "	11
3.—25 " "	13	19.—36 " "	21
4.—18 " "	7	20.—22 " "	10
5.—22 " "	12	21.—38½ " "	24
6.—24 " "	13	22.—29 " "	23
7.—20 " "	11	23.—35½ " "	23
8.—21 " "	11	24.—37½ " "	23
9.—23½ " "	10	25.—51 " "	23
10.—21 " "	9	26.—31½ " "	24
11.—20 " "	9	27.—28½ " "	23
12.—21½ " "	11	28.—36 " "	23
13.—19 " "	8	29.—50½ " "	24
14.—25½ " "	17	30.—50 " "	23
15.—20½ " "	10	31.—41 " "	23
16.—31 " "	18	32.—39½ " "	23

Total, 925½ pts. 510

PASSENGER CARS.

1.—19½ pts.	18	7.—30 pts.	18
2.—25½ " "	18	8.—25½ " "	18
3.—33½ " "	16	9.—29 " "	18
4.—19 " "	15	10.—46½ " "	17
5.—15 " "	15	11.—9 " "	9
6.—22 " "	18	12.—65½ " "	17

Total, 340 pts. 197

Averaging 1 4-5 pints of oil for freight, and 1 7-10 for passenger cars per month only!

All orders and enquiries promptly attended to.

BRIDGES & BROTHER,

No. 64 Courtlandt st., New York.

July 25, 1851.

To Boiler Makers, Engineers, etc., etc.

PATENT LAP-WELDED IRON TUBES,

Manufactured by the

BIRMINGHAM PATENT IRON TUBE CO.

UNDER

PROSSER'S PATENT,

from one and a quarter to eight inches in diameter.

These tubes are well known for their superiority over all other descriptions for Locomotive, Marine and other Steam Engine purposes, for which they are used very extensively in Great Britain and on the Continent of Europe.

For sale in quantities to suit purchasers, by

WILLIAM BIRD & CO.,

44 Wall st., New York.

July 26, 1851.

To Chief Engineers, Directors of Railroads, Canals, etc.

A Civil Engineer and Surveyor, who has been professionally engaged under the British Government, East India Company, etc., is desirous of obtaining employment as an Assistant. No objection to the South or West. Address for one month to C. E. & S., American Railroad Journal office. August 16, 1851.

To Engineers.

A NEW WORK on the Marine Boilers of the United States, prepared from authentic drawings, and illustrated by 70 engravings, among which are those of the fastest and best steamers in the country, has just been published by B. H. Bartol, Engineer, and is for sale at the store of

D. APPLETON & CO.,

Broadway.

September 1, 1851.

CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by POWERS & WEIGHTMAN, manufacturing Chemists, Philadelphia.

Jan. 20, 1849.

European and North American Railway.

THE undersigned, the three persons first named in the first section of an act passed by the Legislature of Maine, and approved the twentieth day of August last past, entitled "An Act to incorporate the European and North American Railway Company," and being specially authorised therefor in and by said act, hereby give public notice that, for the purpose of receiving subscriptions to the stock of said company, as established by the act aforesaid, according to the provisions thereof, not exceeding forty thousand shares, books of subscription will be opened under the direction of the undersigned, according to the regulations prescribed, at the time and places following, viz:—On WED.

WEDNESDAY, the Twentieth day of August next, At Calais, Maine, with Noah Smith, Jr., Esq.

Eastport, do. " Col. Bion Bradbury.
Machias, do. " Walker & O'Brien.
Ellsworth, do. " Seth Tisdale, Esq.
Oldtown, do. " Geo. P. Sewall, Esq.
Bangor, do. " Geo. W. Pickering, Esq.
Orono, do. " Hon. Israel Washburn, Jr.
Waterville, do. " Hon. Timothy Boutelle.
Brunswick, do. " Prof. William Smyth.
Augusta, do. " B. A. G. Fuller, Esq.
Belfast, do. " John Y. McClintock, Esq.
Portland, do. " John B. Brown, Esq.
Portsmouth, N.H. " Hon. L. Goodwin.
Salem, Mass. " Stephen A. Chase, Esq.
Boston, do. " Francis Skinner & Co.
Lowell, do. " John Wright, Esq.
Worcester, do. " Charles Washburn, Esq.
Providence, R.I. " Billings Brastow, Esq.
Hartford, Conn. " Hon. C. F. Pond.
New Haven, do. " Allen Prescott, Esq.
New York, N.Y. " R. & G. L. Schuyler, No
2 Hanover street.

Albany, do. " John V. L. Pruyn, Esq.
Troy, do. " Hon. John D. Willard.
Philadelphia, Pa. " Hon. Wm. C. Patterson.
Montreal, Canada, " Hon. John Young.
Quebec, do. " J. B. Forsyth, Esq.

Said books will remain open for ten successive days at the places and with the persons aforesaid. Dated at Portland, this sixteenth day of June, A. D. 1851.

ELIJAH L. HAMLIN,
ANSON G. CHANDLER,
JOHN A. POOR.

Trautwine on R. R. Curves.

By JOHN C. TRAUTWINE, Civil Engineer,
Philadelphia, Pa.

IN press, and will be published in a few days; accompanied by a Table of Natural Sines and Tangents to single minutes, by means of which all the necessary calculations may be performed in the field.

This little volume is intended as a field-book for assistants; and will be found extremely useful, as it contains full instructions, (with wood cuts) for laying out, and adjusting curves; with Tables of Angles, Ordinates, etc., for Curves varying from 13 miles, down to 146 feet Radius.

A portable Table of Natural Sines and Tangents to minutes, has for a long time been a desideratum among Engineers, independently of its use in laying out curves.

The volume is neatly got up in duodecimo; and handsomely bound in pocket-book form.

Sold by Wm. Hamilton, Actuary of the Franklin Institute, Philadelphia. Price \$1.

Also in press, and will be issued in a few weeks, "Trautwine's Method of Calculating Excavation and Embankment."

By this method, which is entirely new, (being now made known for the first time) the cubic contents are ascertained with great ease, and rapidity, by means of diagrams, and tables of level cuttings. Thin octavo; neatly half bound, \$1. For sale by Wm. Hamilton.
June 28, 1851.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

Practical and Scientific Books

PUBLISHED BY

HENRY CAREY BAIRD,

SUCCESSOR TO E. L. CAREY, PHILADELPHIA.

For sale by Dewitt & Davenport, Tribune Buildings, New York, and Booksellers generally throughout the United States and Canada.

Now being published in Twelve Parts, price 25 cents each, the **PRACTICAL MODEL CALCULATOR**, for the Engineer, Machinist, Manufacturer of Engine work, Naval Architect, Miner and Millwright.—By Oliver Byrne, Compiler and Editor of the Dictionary of Machines, Mechanics, Engine Work and Engineering, and Author of various Mathematical and Mechanical works—illustrated by numerous Engravings; forming, when completed, one large volume, octavo, of nearly 600 pages.

It will contain such calculations as are met with and required in the Mechanical Arts, and establish models or standards to guide practical men. The tables that are introduced, many of which are new, will greatly economise labor, and render the everyday calculations of the *practical man* comprehensive and easy. From every single calculation given in this work other calculations are readily modeled, so that each may be considered the head of a numerous family of practical results.

The examples selected will be found appropriate, and in all cases taken from the actual practice of the present time. Every rule has been tested by the unerring results of mathematical research, and confirmed by experiment, when such was necessary.

The Practical Model Calculator, will be found to fill a vacancy in the library of the practical working man long considered a requirement. It will be found to excel all other works of a similar nature, from the great extent of its range, the exemplary nature of its well selected examples, and from the easy, simple and systematic manner in which the model calculations are established.

Parts 1, 2 and 3 now ready.

American Miller and Millwright's Assistant, By W. C. Hughes. 12mo., illustrated...	\$1 00
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Booth's Encyclopedia of Chemistry. In one vol. royal 8vo, 974 pages, sheep.....	5 00
Builders' Companion. By A. C. Smeaton.—Seventy illustrations, 12mo., cloth.....	1 00
Cotton Spinner and Manufacturers' Companion. By Scott and Byrne. In one vol. 8vo., cloth, with large working drawings.....	3 50
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Steam for the Million. 8vo., paper.....	37

THE Fourth Annual Exhibition of AMERICAN MANUFACTURES, by the MARYLAND INSTITUTE for the Promotion of the Mechanic Arts, will be opened in Baltimore on the 20th October, 1851.

The Exhibition will be held in the **SPLENDID NEW HALL** of the Institute, (fronting on Baltimore street) now being rapidly completed. Their edifice is centrally situated, chaste in its architecture, solid in its construction, and is by far the largest and most complete building in the United States, devoted to the Mechanic Arts. It may be added that this building is 355 feet long by 60 in breadth, with an average height of 68 feet, containing some twelve apartments, the largest of which is 255 feet by 60, and that the cost will be over \$70,000.

To this Exhibition, the Managers ask the attention of all engaged in industrial pursuits throughout the country, and cordially invite them to contribute specimens of their best productions for public inspection, and to compete for the prizes offered by the Institute. These prizes consist of **GOLD and SILVER MEDALS, DIPLOMAS, etc.**, which were last year distributed as follows:—*Gold Medals, 16; Silver ditto, 90; Diplomas, 60;* besides 85 articles of Jewelry, etc., to ladies. *Fair play will be scrupulously observed towards all, and every facility of Steam power, shafting, fixture, labor, &c., &c., will be amply provided free of expense.* The machinery will be under a special superintendent, and a fine display of it is looked for. The last exhibition of the Institute was visited by more than 40,000 persons, and with their vastly improved accommodations and alterations, this number will be doubled at the coming display, embracing many Virginians, Pennsylvanians, and other strangers from the South and West.

Joshua Vansant, President.

Ed. Needles, } Vice Presidents.

F. A. Fisher, }

Samuel Sands, Rec. Sec'y.

Wm. Prescott Smith, Cor. Sec.

F. J. Clare, Treasurer.

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Wm. H. Keighler,	John F. Meredith,
Richard Edwards, Jr.,	W. Abrahams,
Wm. Bayley,	Thos. Trimble,
R. Eareskon,	Chas. Suler.

(The last nine in *Italics* are the Committee on Exhibition.)

The Hall will be opened for the reception of goods on **MONDAY, 13th October**; on the next Monday, 20th, at 7 P. M., the Exhibition will be formally opened to the public, and will positively close on **Wednesday, 19th November**. Articles for competition must be in the Hall by **Thursday night, Oct. 16, unless delayed in shipment after starting in ample time.**

Those who intend depositing, will give the Committee or the Agent, notice as early as possible, stating the nature of the goods, and probable amount of room required, to exhibit them to advantage.

Circulars, containing a view of the new Hall and the full regulations of the Committee, with special information, if required, may be had promptly, by addressing the undersigned, or the Institute's Agent, J. S. Selby, Baltimore, post-paid.

ADAM DENMEAD,
Chairman Com. on Exhibition for 1851.

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To Railroad Companies, etc.



The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

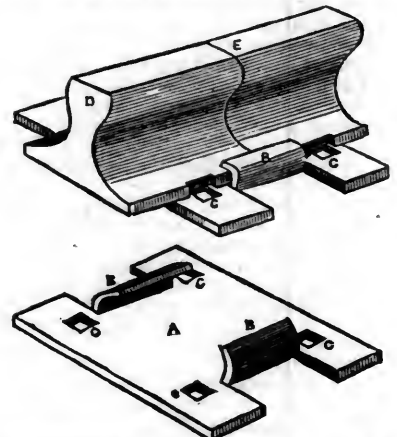
I also invite attention to an improved **PATENT SPRING LOCK**, for **SLIDING Doors** to Freight and Baggage Cars, now in use upon the Pennsylvania Central, Greenville and Columbia, S. C., Reading, Pa., and other Railroads.

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C. LIEBRICH,
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May 9, 1851.

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ARE prepared to make **WROUGHT IRON RAIL ROAD CHAIRS**, of various sizes, at short notice.

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Figure 1 is a perspective view of the rail secured in the chair, and fig. 2 is a perspective view of the chair itself. D, E, are sections of two rails placed together, and secured at the joint on the chair by the jaws B, H. The chair is bolted down by spikes C, C. In fig. 2, the chair is represented as made of a single block or plate A of wrought iron.

The chair is set in its proper place on the track, spiked down, and the ends of the two rails brought together within the jaws as represented in fig. 1.

For further information address,

N. C. TROWBRIDGE, Secretary,
Poughkeepsie, N. Y.

June 1, 1851.

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CHARLES STODDER,
75 Kilby st., Boston.

June 20, 1851.

3m,

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 136 NASSAU ST., NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.

SECOND QUARTO SERIES, VOL. VII, No. 42!

SATURDAY, OCTOBER 18, 1851.

[WHOLE No. 809, VOL. XXIV.]

ASSISTANT EDITORS,

J. T. HODGE, *For Mining and Metallurgy.*

GEN. CHAS. T. JAMES, *For Manufactures and the Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & Co., 136 NASSAU ST.

Saturday, October 18, 1851.

St. Petersburg, (Russia,) September 6, 1851.

H. V. POOR, Esq.:

Dear Sir—Having just completed a journey to and from Moscow by the railway, opened within a few days, I beg to give you some notice of it. This magnificent work commences in a convenient part of St. Petersburg, at the top of the beautiful street the "Nefsky Perspective," about $2\frac{1}{2}$ versts (a verst is 3,500 English feet) distant from the Admiralty, which is situated on the river Neva, and is carried in nearly a straight line in a south east course to Moscow, which is 607 versts or 400 miles from here, terminating on a light level about $2\frac{1}{2}$ versts from the Kremlin, at the base of which is the river Moskwa. This road consists of a double track of 5 feet gauge, and has turnpike metal or broken granite stones for ballast on the surface. The superstructure consists of timber longitudinal rails on which at every 3 feet distance are placed tim-

ber cross-ties, and on them the iron rail is fastened by iron clamps, except at the junctions of the rails, which are either at 15 or 18 feet. There are cast iron chairs of 20 lbs. weight each, to support the rails. The rail comes from the Dowlais Iron Works in Glamorganshire, South Wales, and is of the flat base kind, and weighs about 60 lbs. per yard. The whole road, excavations, embankments, culverts, bridges and superstructure of railway, is constructed in a firm and durable manner. The bridges over the rivers Musta, (2,063 feet long on 2 abutments and 8 piers) Volkoff, (1,100 feet long on 2 abutments and 4 piers) Verebia, (1862 feet long on 2 abutments and 8 piers) over the Wolga at Twer (1500 feet long, 4 piers,) are all built of timber, on Howe's principle, by our ingenious and meritorious countryman, Mr. R. O. Williams, of Connecticut, who has proved himself a most successful and skilful bridge builder, under circumstances of great difficulty. Some of these bridges are elevated above the surface of the water from 125 to 175 feet. The engineer of this important national improvement was Maj. Whistler, of the Boston and Albany railway, who came here in 1843, and devoted his excellent talents and sound judgment to this road until the day of his greatly-lamented death, about 18 months since.—

The Major was esteemed by every one, and we Americans have good reason to be proud of our countryman. Since Major Whistler's death, another countryman of ours, Major Brown, lately of the New York and Erie railway, has been made engineer in chief, and the road has been finished under his direction. I hope this amiable and most intelligent gentlemen and experienced engineer will soon have an opportunity of displaying his talents upon the contemplated railway hence to Warsaw, 1,200 versts, or 796 miles long. The locomotives on the St. Petersburg and Moscow railway were built by Harrison, Winans & Eastwick, from drawings by Major Whistler, and are what are called 'outside cylinder reverse valve engines,' and are intended for the burning of wood. These locomotives are 162 in number, of which 42 are for passengers and 120 for goods. The passenger engine weighs 25 tons, and is supported by 4 coupled driving wheels of 6 feet diameter, and by 2 leading wheels of $2\frac{1}{2}$ feet diameter. The freight engine is on 6 coupled driving wheels of 4 feet diameter, and 2 leading wheels of 21 inches diame-

ter. There are about 2,700 other vehicles on this road, consisting of 162 tenders, and 1st, 2d and 3d class passenger carriages and goods wagons, all on 8 wheels.

The passenger carriages are built upon the American plan of one saloon with an aisle in the centre, and seats for the accommodation of two persons on each side. These carriages are most easy and comfortable. They are 56 feet long and $9\frac{1}{2}$ feet broad. The two Imperial carriages are very magnificent, being 84 feet long by 10 feet broad and $7\frac{1}{2}$ feet high, and supported on 16 wheels on the Bogie principle. These carriages have spacious apartments, furnished for the Emperor and Empress separately, in the most sumptuous and luxurious manner. They are fitted up with beds, and there is a kitchen car connected with each large Imperial carriage, where all the comforts to be derived from a well-provided larder, wine cellar, ice house and well-arranged cooking apparatus are furnished. The station houses on this road are built with great architectural taste, and are large and contain every convenience. There are 7 principle stations besides those at St. Pand at Moscow, and are called Luban, Maloy Vischery, Obrechia, Balagom, Spirova, Tver, and Klin, situated generally about 75 versts (3,500 feet) from each other. These stations have work shops and other conveniences for the repair of the rolling stock. I have already mentioned that the rolling stock was made by Harrison, Winans & Eastwick, and their successors the new firm of Winans, Harrison & Winans have the contract for keeping up and maintaining the rolling stock. This magnificent railway when opened for public use will be of extraordinary benefit to the country. Passengers are now 75 hours by the diligence, over a dusty and most uncomfortable chaussee (turnpike) of 768 versts long, compared with 607 versts by railway, which will be performed in 15 hours. Wagons are 11 days in conveying goods between the two cities, whilst boats on the rivers and canals between the two towns are 51 to 55 or 60 days, without taking into account that boats are frozen up for 6 or 7 months when caught by the frost in the autumn, but on the railway at 15 versts per hour, at which rate the freight trains are limited, goods will be less than 2 days in going, winter and summer, from town to town. The expense of conveyance for both passengers and goods will be exceedingly

diminished, and the quantity of traffic now estimated at 1000 tons per diem from each city will be immeasurably augmented. I hope the success of this important work will be such as to induce the Emperor to extend it to Tula and Odessa, and to make the railway hence to Warsaw with all possible despatch. The country between the two capitals is generally flat and uninteresting. There is not a rock *in situ* in the whole distance, though there are occasional rounded granite boulders found in the excavations, but the whole distance is an alluvium of little fertility, producing miserable crops of oats and flax, and a bad race of pigs and small cattle. As the railway is made straight, without regard to any of the old towns, it runs through an unimproved and uninteresting country. The railway leaves Novogorod, 60 versts on the south, and Tver 4 versts on the north, and Klin, 3 versts on the north. All these three towns, which are large and important places, are passed through by the chaussee, but avoided by the railway. But the two large towns at the termini, St. Petersburg and Moscow, are among the most remarkable, magnificent, and interesting in Europe, and will well repay the trouble of visiting them. I close this rapid account of the St. Petersburg and Moscow railway, by wishing it every success, and may it be the excitement to construct as many roads as are now existing in our great republic, throughout this vast empire.

I do not know the cost of the St. Petersburg and Moscow Railway, but suppose it may be short of \$25,000,000 when quite completed.

Yours, very respectfully,
A CONSTANT READER.

Canals in Canada.

From the Report of James Stewart, Civil Engineer, to the Board of Works, in 1848.

Welland Canal.—This canal extends from Lake Erie to Lake Ontario, and overcomes the interruption to the navigation caused by the Falls of Niagara. It has two entrances from Lake Erie, about seventeen miles apart; the upper entrance being from the Grand river, a little above Port Maitland, about thirty-seven miles west from Buffalo, and the lower at Port Colborne, about twenty miles west from Buffalo. It also communicates with the Grand river by a branch commencing on that stream at Dunville, five miles above Port Maitland, through which branch the whole canal has hitherto been supplied with water. The termination on Lake Ontario is at Port Dalhousie. The Port Maitland entrance has an advantage in spring over the Port Colborne, in being clear of ice several weeks before either that or Buffalo Harbor.

The work was originally undertaken by a company, for which an act was obtained in the year 1824, with a capital of £37,500. The canal then contemplated was a small one, and meant to extend from a point on Lake Ontario to the Chippewa or Welland river only, down which vessels would proceed to the Niagara and then ascend that river to Lake Erie. In 1825 another act was passed providing for the enlargement of the work. It was then proposed that the canal should not, as before terminate at the Chippewa, but that vessels from Lake Ontario, on reaching that stream, should proceed upwards to a point on its south branch, from whence another canal would be cut to join Lake Erie at the mouth of the Grand river, thus opening a direct communication between the waters of the two lakes. The summit level was to be at the Chippewa, from which therefore the canal would be supplied with water; but some difficulties having occurred in excavating what is called the "Deep Cut" to the necessary level, that intention was abandoned, and a small canal, to serve as a feeder, and which would also be navigable for boats, extending from a point a little south of the Chippewa to Dunville on the Grand river, was substituted. The canal from the south branch of the Chippewa to the mouth of the Grand river was

also abandoned, and a shorter route adopted from the junction of the feeder, to Port Colborne on Lake Erie. The company under the new act was authorised to raise a sum of £200,000, which, in 1834, was extended to £250,000, and a portion of this stock, amounting to £115,000, as stated in certain documents of that date, but in later ones at £117,800 was taken by private individuals. In a despatch of the Secretary of State to the Governor of Upper Canada, dated the 30th September, 1826, the estimate on the extended plan appears to have been £147,240, of which the Imperial government agreed to pay £16,360, or one ninth, for the free passage of vessels with public stores, being about the same proportion as was paid in the case of the Lachine canal: but this arrangement was altered afterwards, and a loan substituted. The work was commenced on the 30th November, 1824; the trunk from Lake Ontario to where the feeder joins it, and the feeder terminating on the Grand river, were opened on the 30th of November, 1829; and the trunk from the junction to Port Colborne, in 1832. The general width of the canal was twenty-six feet on bottom, and about fifty-six feet at top water line, with eight feet depth of water. In the "Deep Cut" the breadth on bottom was fifteen feet, and at top water-line forty-three feet. The number of locks was thirty-nine, all of wood; from Lake Erie to St. Catharines they were 100 feet long and 22 feet wide, with seven feet of water on the mitre-sills; below St. Catharines they had the same depth of water on the sills, but were 125 feet long by 32 wide.

In the end of the year 1831 the accounts appear to have stood thus:—

Stock—Held by private parties....	£115,000	0	0
Do. do. Province of Upper Canada.....	107,100	0	0
Do. do. Lower Canada.....	25,000	0	0
Loans—From Imperial government.	55,555	0	0
Do. do. Province of Upper Canada.....	100,000	0	0

Sum raised.....£403,055 0 0
And there had been expended on the works to this time about.....£411,000 0 0
At the beginning of the year 1837 the accounts stood thus:—

Stock—Held by private parties....	£117,800	0	0
Do. do. Province of Upper Canada.....	107,500	0	0
Do. do. Lower Canada.....	25,000	0	0
Loans—From Imperial government.	55,555	0	0
Do. do. Province of Upper Canada.....	102,000	0	0

Sum raised.....£407,855 0 0
In the year 1837 the Legislature of Upper Canada converted all the loans previously made by that province into stock, and authorised a farther subscription of £245,000, of which £66,144 appears to have been paid and spent during that year; £46,144 of it on the works, and £20,000 on the re-purchase of property formerly sold by the company.

At the end of 1837, therefore, the accounts would probably stand thus:—

Stock—Held by private parties....	£117,800	0	0
Do. Province of Upper Canada (old).....	107,500	0	0
Do. do. do. former loan.....	162,000	0	0
Do. do. do. (new).....	66,144	0	0
Do. do. Lower Canada.....	25,000	0	0

Total stock.....£418,444 0 0
Loan from Imperial government.. 55,555 0 0

Sum raised.....£473,999 0 0

The expenditure on works to about the same period is stated in a document of Mr. Macaulay's, President of the Welland Canal Company, dated 12th February, 1838, and printed in the proceedings of the Assembly of Upper Canada, to be—

Private stock.....	£117,800	0	0
Public money.....	329,200	0	0

Total.....*£447,000 0 0

* Either this sum must be too small or that of £411,000, stated above as the expenditure at the

At this time, the stock raised, and authorised to be raised, would stand thus:—

Stock raised—Held by private parties.....	£117,800	0	0
Do. Province of Upper Canada.....	275,644	0	0
Do. do. Lower Canada....	25,000	0	0

Total raised.....£418,444 0 0

Stock not raised, but authorised to be contributed from the funds of the province of Upper Canada.. 178,856 0 0

Total.....£597,300 0 0

In 1839 an act was passed authorising the government of Upper Canada to purchase the stock of private stockholders, by an issue of debentures, redeemable in twenty years from their date, bearing interest at the rate of two per cent. for the two first years, three per cent. for the third year, four per cent. for the fourth, five per cent. for the fifth, and six per cent. for the sixth and following years;—and so soon as parties owning two-thirds of the stock should have agreed to the terms, to assume the entire responsibility and management of the work thereafter, which arrangement was, in about two years, carried out accordingly. No statement has been found of the total sum expended on the canal up to the period when it came entirely under the control of the government, but it probably was very near £500,000, without reckoning the expenditure annually made from the tolls.

The enlargement of the entire work was commenced in 1841, and is not yet completed. A detailed estimate of the expense has not been obtained, but in a memorandum submitted to the Governor General, dated the 12th August, £450,000 is put down as an approximation to the cost, and this seems to have been the amount of the first grant made by the Legislature. Under this grant, the locks were to be of stone, 120 feet long by 24 feet wide, with 8½ feet of water on the sill, excepting one at Port Dalhousie, and another at Broad Creek, which were to be steamboat locks, 200 feet long by 45 feet wide, with nine feet water on the sill; and the supply of water necessary for the navigation and machinery was to be drawn, as formerly, from the Grand river, the summit level of the canal thus remaining unchanged. It was afterwards thought desirable to enlarge the smaller locks to 150 feet long by 26 feet 6 inches wide, with 8½ feet of water on the sill, and also to enlarge the trunk of the canal, and alter the curves to suit the increased size of vessels that would enter the enlarged locks; to reduce the summit level low enough to allow the water of Lake Erie to flow through the canal, from which lake, therefore, both it and the machinery would in future be supplied, and to substitute a steamboat lock between Port Dalhousie and St. Catharines, and another at Port Colborne, in place of the small ones previously contemplated. It was considered by the engineer in charge at the time, that these improvements might be made without exceeding the sum of £500,000, being the amount then appropriated; and the large excess of expenditure has been explained as arising mainly from the great difficulty both of estimating the extent of work required, and of ascertaining the cost when carried on in connection with an old canal much out of repair, and the navigation through which having to be always maintained, the two works continually interfered with each other. It will be seen from the tabular statement of canals, that the expenditure on the enlargement of this one, up to Dec. the 31, 1848, was £328,043 7s. 8d.; and that £942,350 is the sum estimated as required to complete it fully, making upwards of £1,400,000 for both the old and new work.

Cornwall Canal.—The object of this canal is to overcome the difficulties to the navigation of the St. Lawrence, presented by the long Sault Rapids. Operations were commenced in 1834, under local commissioners, appointed by an act of the Legislature of Upper Canada, and suspended in 1838, when the work was well advanced, for want of funds. Up to this period the expense was defray-

end of the year 1834, must be too large; for in 1837, £46,144 was spent on the work, and £20,000 in purchase of property.

ed by the government of the Upper Province. In 1842, the operations were resumed, under the direction of the Board of Works. The canal was partially opened in December of that year, and completed in June, 1843; but various slides and breaches have since occurred, which it has taken a considerable outlay to repair. The locks are the largest in Canada, having a chamber 200 feet long 55 feet wide, in the clear; the depth of water on the sills being nine feet, as in the other large canals of the province.

The original estimate for this work, as stated in Mr. Killaly's Report on the Public Works of Canada, dated April, 1846, was £191,903.

In the end of 1835, when work to the amount of £95,797 was calculated to have been done, the total cost, including that sum, was estimated in the Report of the Canal Commissioners at £238,216.

By Mr. Killaly's above report, there was actually expended under the commissioners £440,097.*

And there has since been expended by government, up to the 31st December, 1848, £75,600, making altogether £515,697.

Williamsburg Canals.—These are a series of four short canals and six locks, lying between Prescott and Dickenson's Landing, constructed for the purpose of overcoming the rapids at the Galopa, Point Iroquois, Rapid Plat and Farren's Point. They were commenced in 1843; the first of them finished in November, 1846, and the last in October, 1847. Since then, farther works have been found necessary, some, if not all, of which will be finished for the navigation of 1849, and they will be carried on so as not to interfere with the navigation.

Beauharnois Canal.—The Beauharnois canal, extending from the lower end of Lake St. Francis nearly opposite Coteau du Lac, to the head of Lake St. Louis, overcomes the rapids of the Coteau, the Cedars, and the Cascades. It was commenced in 1842, and finished in the autumn of 1845. Farther works have been found necessary, some, if not all, of which, will be finished for the navigation of 1849; and they will be carried on so as not to interfere with the navigation.

Lachine Canal.—This canal extends from the village of Lachine, at the foot of Lake St. Louis, to the city of Montreal, overcoming the various rapids in the St. Lawrence between the two places.

The following particulars regarding the old canal have been obtained from a statement, dated Montreal, 19th March, 1842, and signed F. Grifflin. The work was commenced in 1821, under the provincial statute, 1 Geo. IV. c. 6. The canal was partially opened in 1824, and completed in 1825, at an expense of £109,601 0s. 9d. currency. (In a report of the directors of the Welland canal, dated the 31st December, 1829, the cost is stated at £120,000.) The funds were furnished by the government of Lower Canada with the exception of £10,000 contributed by the military government, to secure a free passage for troops, stores, &c. (In a despatch from the Secretary of State to the governor of Upper Canada, dated the 30th September, 1826, it is stated that £12,000 was granted by the Imperial government.) The length of the canal is eight miles and 718 yards; its breadth at bottom twenty-eight feet, at top water line in rock excavation thirty-six, and in earth excavation forty-eight feet. The

* In a Report of the Select Committee to the House of Assembly, dated 30th January, 1840, and which is the last public document that has been found relating to the work while under the charge of commissioners, the expenditure up to the end of 1839 is stated at £356,579. The books kept for the commissioners show the following expenditure for each year up to the end of 1839—

	£	s.	d.
1834.....	31,429	18	6
1835.....	85,849	12	8½
1836.....	82,821	13	6
1837.....	117,424	19	10
1838.....	36,676	17	6½
1839.....	7,931	9	9½

Total.....£362,134 11 10½

At this period a sum of £5,215 15s. 6½d. was due on outstanding notes given by the commissioners to contractors. In 1840 the books show an expenditure of only a few pounds, while none is shown either in '41 or '42.

prescribed depth was for vessels drawing four and a half feet water, but those drawing five, and even five and three inches have passed through. There are seven locks, all of cut stone, 100 feet long by 20 feet wide in the clear. The Guard Lock at Lachine has usually no lift; the two next have a lift of six feet each; the three next of eight feet each; and the remaining one, the entrance lock at Montreal, a lift of nine feet; making forty-five feet altogether. There are three culverts and fourteen bridges. The earliest period at which the navigation ever opened was on the 8th of April, in the year 1828, and the latest period at which it closed, the 8th December, 1830; but on an average of years, the 15th April may be reckoned as the period of opening, and the 15th November as that of closing the canal.

The enlargement of this work began in the end of 1843. It was sufficiently advanced in the spring of 1848, to allow the passage of vessels, and will be completed in 1849. The general dimensions are calculated for the same size of vessels as the Beauharnois and Williamsburg canals, but the two locks at the Montreal terminus have each a depth of sixteen feet water on the sills, to allow of large sea-going vessels passing into the second basin, which it is proposed to excavate to a corresponding depth at a future period, the first basin having been deepened already.

Chambly Canal.—The Chambly canal extends from St. Johns to Chambly, a distance of about eleven and a half miles, and was made to overcome the interruptions in the channel of the Richlieu, between the two places. It forms the chief portion of the works necessary to connect the navigation of the river St. Lawrence, by way of the Richlieu, with that of Lake Champlain. At a period not later than the year 1819, a private company was organised for the construction of a canal at Chambly, and an instalment of five per cent. on each share, was paid to cover the expense of preliminary examinations; but the proposal seems to have lain over, and ultimately to have been dropped without any practical result. The work, as finally undertaken, was authorized by the 3 Geo. IV. c. 41, which provided for the advance of £60,000 currency, from the funds of the Province of Lower Canada for the completion of a canal from Chambly Basin to St. Johns. The original estimate appears to have been about £50,000 and although Captain Melhuish, of the Royal Engineers, considered it as much too low, and stated £96,745 as the amount that would probably be required, the Commissioners under whose directions the operations were commenced and carried on, placed reliance on the smaller sum, and actually let the whole work for £46,218. It was begun on the 1st October, 1831, and carried on till the autumn of 1835, when although the Canal was very far from being completed, not only the original appropriation of £60,000, but a farther one of £6,000, made by the 3 Wm. IV. c. 30, for enlarging the locks, were found to be exhausted, and the work was in consequence stopped. At this period it was estimated that £20,000 would be required to finish the Canal, and again in 1839 when about £5,000, advanced by the Provisional Government, had been spent in upholding and repairing the work, it was estimated that £29,000 would be required. Authority was granted by the 2 Vic. c. 61 to borrow £30,000 for this purpose, but the money could not be raised on the terms specified, and nothing was done beyond the ordinary repairs, until a new power to borrow £35,000 on the security of the Province of Lower Canada, was conferred by the 3 Vic. c. 21. In 1840, the operations were resumed on this new appropriation, but about April, 1842, it became apparent that even that would be insufficient, and a further sum of £12,000 was craved to complete the work. Advances exceeding that amount were made from time to time through the Board of Works, from the funds of the Province of Canada, and ultimately the canal was finished and opened in 1843. The outlay up to the 30th June of that year may be stated approximately, at £120,204; disbursed as under:—

For new canal. Repairs. Total.

From the funds on under the security of the province

of Lower Canada.....	£101,219	£5,755	£107,004
From the funds of the united provinces of Upper and Lower Canada.....	£13,200	.....	13,200

Total.....£114,449 £5,755 *£120,204

From the suspension of operations in 1835 up to 1840, the canal was used between St. Johns and the combined Locks of Chambly only, and yielded a revenue of about £300 gross; while from 1840 to 1843, as there is no return of revenue, it was probably out of use. There are nine locks all of stone, 120 feet long by 24 feet wide, and six feet of water on the mitre sills.

St. Ours Lock, &c.—This lock is in the river Richlieu, at the foot of the artificial navigation, about fourteen miles from its mouth, and with a dam raises the water above it sufficiently to overcome the shallow portions of the stream, and afford a free passage to Chambly Basin. In conjunction therefore with the Chambly Canal, this Lock opens a communication between the St. Lawrence at Sorel and Lake Champlain; while by the Northern Canal, the communication is continued from Whitehall to the navigable waters of the Hudson near Troy. At the site of the work the Richlieu is divided into two deep channels by a small island, in the eastern and norrowest of which the lock is built, while the dam extends across the western. The work was begun in the autumn of 1844, but in consequence of various hindrances, will not be finished until 1849. The length of the lock is 200 feet, by a width of 45 feet, with six feet of water on the sill. At the head it is joined to the shores by an embankment. The dam is about 600 feet long, formed of cribs filled with stone, and is connected with the shores by hammer-dressed abutments.

St. Ann's Lock.—This lock is situated on one of the branches of the river Ottawa, between the Village of St. Ann's and Isle Perrot, about twenty-five miles west of Montreal. It overcomes the St. Ann's Rapids, and thus, in conjunction with the Lachine and the Ottawa Military Canals, opens a communication from Montreal to Bytown, and thence by the Rideau Canal to Kingston. It was begun in the autumn of 1839, and completed in June, 1843. The lock is 190 feet long by 45 feet wide, with 7 feet of water on the sill in the ordinary state of the river during summer, and 6 feet at its very lowest state.

Desjardines Canal.—On the 30th of January, 1826, an Act passed the Legislature of Upper Canada, incorporating a company for the construction of a Canal, for sloops and other vessels of burthen from Burlington Bay to the Village of Cootes Paradise, with a capital of £10,000, which work is now known as the Desjardine Canal. It extends from a point at the head of Burlington Bay, about two miles north of Hamilton, to the Town of Dundas, and is including the natural and artificial navigation, between three or four miles in length. The depth of water proposed was eight feet.

The Canal was opened on the 16th of August, 1837, for vessels drawing 7½ feet water; and according to a Report of the Directors, dated the 2nd May, 1840, cost £24,671.

The money advanced by Government to the company is as follows:

By 2nd Wm. IV., chap. 24, passed in the year 1832.....	£5,000	0	0
" 5th do. chap. 34, passed in the year 1835.....	7,000	0	0
" 7th do. ch. 65, passed in the year 1835.....	5,000	0	0

Total.....£17,000 0 0

This loan bears interest at 6 per cent., of which there remained unpaid at the 31st of December, 1839, £2,873, 11s. 2d.; at the 31st Dec., 1844, £7,973 11s. 2d.; and at the 31st December, 1848, sup-

* In addition to this sum there was expended by the Commissioners £3,550 for interest on borrowed money, of which £2,500 was paid by warrant from the Governor General, and £1,050 through the Board of Works. This was up to the 1st of May, 1843.

posing nothing has been paid in the interval, £12,053 11s. 2d.—making a total sum of £29,053 11s. 2d. due the Government at the latter date.

It thus appears that the canal has been far from profitable, which the Directors of the company attribute to the work having been constructed on too small a scale. In 1840, it was stated by them that only boats of thirty tons could navigate it; and in 1845, there was no more than five feet of water in some parts of it. On the 22nd of May, 1840, the Directors, in a memorial to the Lieutenant-Governor of Upper Canada, proposed to surrender to Her Majesty's Government the whole property and interest of the Stockholders in the said Canal until such time as the sum due Government was repaid; and on the 19th of June, 1841, the Directors again made the same offer to Lord Sydenham, but without success. In 1845 and 1846, estimates were made by the Board of Works for enlarging and completing the Canal, but the works were not undertaken. The estimates were for an enlargement from a breadth of 60 to a breadth of 100 feet at the surface, with twelve feet depth of water, and embraced two methods; the first, by following the present canal, and the line of the Creek, to Fish Point, a distance of 368-80 miles, at a cost of £31,893; the second, by following the present Canal for about two miles from Dundas, and then passing through the Burlington Heights in the direction of Fish Point, reducing the distance to 269-80 miles, but at a cost of £59,083.

Asphaltum in New Brunswick.

R. C. Taylor, Esq., a Geologist of well known reputation in this country, recently made a professional visit to the coal fields of New Brunswick for the purpose of determining whether a certain substance found there was coal or bitumen. The result of the joint report determines the substance to be asphaltum and not coal. The former is described as *mineral matter injected* into an open fissure. The latter is derived from vegetable materials—of plants which have grown, died, and slowly accumulated. Asphaltum and coal, then, are very different substances.

They differ in all respects, as we learn from chemical as well as geological investigation, as also from their adaption to useful purposes. The circumstances, says Mr. Taylor upon the survey of this vein, which lead me to the conclusion that its contents be asphaltum and not coal, are principally the following, viz:—

That whereas the true coal seams are disposed in uniformity and parallel with the surrounding or containing strata, and continue longitudinally and in uniform thickness through veins for considerable distances, veins of asphaltum appear to occupy advantageously lines of fracture, and are seen to ramify into smaller veins which traverse in irregular directions, unconformably with each other, any adjoining rocks whatever may be their age.

That the contents of coal seam are sub-divided longitudinally, viz: in the longitudinal direction of the seam, and thereby mark the line of accumulation, or the planes of deposit, in contradistinction to asphaltic veins, which present no parallel lamina, but whose divisional planes are placed transversally, viz: at right angles to the sides or walls of the veins.

And whereas the matter of true coal seams is wholly of contemporaneous origin, geologically speaking, with the contiguous strata, veins of asphaltum, on the contrary, are always posterior to the surrounding strata.

Coal, from the nature of its formation from vegetable matter, and from the adjoining beds which abound in organic forms, such as shells and fishes, which formerly occupied the contiguous waters, furnish the direct evidence that such strata were originally deposited or existed horizontally.

In the case of asphaltum, the divisional planes run transverse, or about at right angles to the walls of the vein. These planes of division are judged to have been formed during the process of cooling, contraction, and consolidation of the material.

In the case of a coal seam the planes of deposition run parallel with the seam itself. In this cha-

racteristic a vein of asphaltum and a seam of coal are entirely opposite to each other.

Mr. Taylor entertains the opinion that the asphaltic vein at Hillsborough was protruded from below. He perceives unquestionable evidence that such was the fact, and consequently infers therefrom, that it could not possibly be a coal seam. The calcareous, fish-containing, bituminous shales through which this asphaltic vein was protruded, are seen to pass, on the south, beneath gray and red conglomerates, grits, marls and sandstones.—This series, according to the limited attention I had time to bestow on them, appeared to occupy the position which is usually assigned to the Old Red Sandstone group. This group is situated beneath the coal formation, which approaches within a few miles of the Hillsborough Mine.

Veins of asphaltum are of great rarity. With the exception of the Hillsborough vein, I am not aware of any upon this continent. It differs here from that of Cuba, only in the rock formations adjacent. In Cuba they are chiefly in a metamorphic state; and the same agency no doubt gave rise to the intrusion of the asphaltum. I neither saw nor heard of any tendency to fire-damp there. The differences between the asphaltum of Cuba and that of Hillsborough, are very slight and immaterial; but some varieties are more open or porous than others, probably owing to the escape or extrication of a greater amount of gas in the latter case, while under the process of cooling, particularly near the upper portion of the vein.

Important Railway Trial.

The Supreme Court is sitting at Greenfield this week, and an important case, or rather double case, has been tried, in which some eminent counsel as Ritus Choate and George Ashmun were engaged on opposite sides. The cases were Dr. Amos Taylor, and Dr. Taylor and wife, against the Vermont and Massachusetts railroad company, for damages sustained by the wife in alighting from a car at Wendell depot, in the fall of 1850. The turning facts were thus: notice was given of the station; the cars almost or quite stopped; she had got on to the platform to alight; and the cars started with a jerk, and she was thrown to the ground and badly hurt;—the point was, whether she was in a place of safety when she attempted to alight: if so, the Company were not liable—if not they were. The verdict was \$1000 for the plaintiff in the first case, and \$2,000 in the last—\$3,000 in all. Choate, Davis, and Allen, and Mattoon for plaintiff; Ashmun and Aiken for defendants.—*Springfield Republican*.

Liabilities of Common Carriers.

In the New York city Circuit Court, J. King, was tried, last week, the case of Levi Fowler vs. Joshua Maxwell and Charles Parsons. In October, 1849, Mr. F. put on board one of the Eckford line of tow boats, in New York city, a quantity of teas and other articles to be sent to Port Stanley, Canada West. The goods two months afterwards were lost during a storm, in a sailing vessel by which they were sent, on Lake Ontario. Action is brought against Messrs. M. & P. as the owners of the line and common carriers, to recover the amount, it being alleged that the goods should have been sent by the Erie Canal to Buffalo, thence by steamer to Port Stanley, which is on Lake Erie, instead of by the way of Oswego, also that there was unnecessary delay in forwarding. The defence was that Messrs. M. & P. were not liable, also that Mr. Thomas P. Waters was a partner, who is not joined in the action, and that defendants were mere forwarders and not common carriers, and that the agreement said "by way of the lakes." The Court charged that it does not matter whether parties, in such cases are owners or not. If they undertake to forward goods, they become common carriers. It is their duty also to forward by the usual and direct route, and there having been a deviation in this case by forwarding on the Oswego and Lake Ontario route, defendants are liable. Verdict for plaintiff, \$566. In regard to the point as to copartnership, it was shown that a law was passed in 1836, which makes it necessary for partners in the forwarding business to file with the county clerk of each county through which the line passes, a certificate stating the copartnership

and the names of those composing it; and in the event of their not doing so, each partner is liable, and they cannot set up a non-jointer. It was not filed in this case.

Magnitude of Modern Road Works compared with Ancient.

The Rev. Mr. Burgess, B. D., lately read a paper at the Institute of Architects, in which, speaking of the extent of ancient Roman road works, he said:—I have spoken of 234,000 cubic feet of masonry and rubble as contained in one of the great works of the Via Appia; the high level bridge at Newcastle alone contains of masonry 681,609; of rubble 116,396; of concrete 46,224; total 844,229; besides 5050 tons of iron, of which the Romans knew nothing. The whole cost of this undertaking was £234,450. The cubic feet of masonry in the Britannia bridge, which we must consider as a viaduct, and the wonder of the present age, is 1,500,000; and the cost approximately calculated by Mr. Edwin Clarke, was £601,865. The cost of the Conway bridge, with £38,500 worth of masonry, was £145,190. And, finally, the Tweed Viaduct is said to contain two million cubic feet of masonry. We have, then, in these four great works alone—the Britannia and Conway bridges—the Newcastle or Berwick viaducts, or bridges—near four millions and a half of cubic feet of masonry; the whole costing not less than £1,280,000. That is to say, if we could find in the Roman empire one hundred such works as the celebrated construction of the Via Appia, they would hardly equal in masonry or stone work these four productions of the "ultima Britannia."

Although we have but little or no data to go upon for making a comparison of expenditure and labor, yet we may gather enough to maintain the proposition, that all the great works of the Roman empire connected with the lines of communication did not equal the works of a similar kind which now exist in the island of Britannia. Another thing which hinders us from making comparisons as to cost: we have in every line of railway £6000 per mile for land; Appian Claudius cut through the country of the Volsci without asking the price, and dispensed with all juries for assessing damages.—The comforts of law expenses were not known; and I doubt if the surveyors and engineers got £1200 a mile. When Augustus remade the Flaminian way to Rimini, he was the sole shareholder, and gave no script. Julius Cæsar and Marc Antony raised great works, but they knew nothing about raising dividends. That which would have astounded them more than an irruption of barbarians would have been a bill of £1800 for every mile of road for parliamentary and law expenses.—*The Builder*.

Railways to Indianapolis.

There are now in course of construction, and in considerable forwardness, no less than three railways from Cincinnati to Indianapolis. In all these our citizens are stockholders, and two of them our city has aided by large loans of its credit. The city, the business men of the city generally, and the stockholders in these companies—one and all—are deeply interested in the vigorous prosecution and early completion of these several roads. Our profits and our credit require these works to be finished, and they will be.

The St. Louis company, to aid which both the city and our citizens have contributed liberally, construct a line from this city to Lawrenceburgh, and from thence Judge Dun's company have a line of road under contract to Indianapolis, by way of Greensburgh and Shelbyville, a portion of which is nearly ready for the iron. In this section of the line our citizens have taken some stock, and we are looked to for but a small additional amount to insure its early completion. It is on an excellent and nearly direct line, and is, in every view, an important improvement. The additional stock necessary to complete it should be taken without delay. The rail on this line will be laid on the Ohio gauge, and thus avoid the inconvenience of any transhipment.

Mr. Caleb Smith's line from Indianapolis to Connersville, and the College Corners, connects with the Hamilton and Dayton road at Hamilton. Arrangements have been made and are in progress

for the early construction of this line. We are assured that Indiana will construct the work without delay to the Ohio line, if Ohio will construct it from that line to Hamilton. These arrangements are nearly completed, and will not require any very large additional amount of subscription among us to the stock. Most of what is needed will be taken by those residing on the line. This also is a pretty direct line, and the track will be laid on the Ohio gauge.

The road from Hamilton to Eaton and Richmond, intersects the Central railway at the latter place, and opens to us a way on that line to Indianapolis. To the Hamilton and Eaton portion of this road, extending from this city to the Indiana line, the city and our citizens have contributed liberally. The work has been pushed forward vigorously, and is now nearly ready for the rail.—There is a short link of four miles on this route, from the Indiana line to Richmond, under a different organization. A considerable portion of the stock required for this link has been subscribed in this city. It is under contract, and with a few hundred dollars additional subscription, will open this third line of railway from this city to Indianapolis. From Richmond this road is extended northwest, by Newcastle and Anderson, to Logansport, and on to Chicago. To this line as far as Logansport our citizens have contributed liberally, and we believe the whole line is under contract. This line will connect all northwestern Indiana with Cincinnati, by an unbroken line of railway, laid down on the Ohio gauge.

In no other direction are we prosecuting equally extensive and important works. The desire to push on these lines has so absorbed our attention, that we regard with less favor than they deserve, other lines of railway very important to the business of the city, which hold out fair prospects of profit to the stockholder, in the shape of dividends, say the southern roads, to Lexington and Nashville, and from Louisville to Covington, and also the Wilmington and Zanesville, and the Belpre roads east.

We should be careful to direct our efforts to points where the greatest good is to be effected, and to the completion of lines already begun.—*Cin. Gaz.*

Massachusetts Railways.

For the purpose of showing to what extent the people of the State participate in the benefit of the lines of railroad which traverse it, it may be pertinent to state that there are in Massachusetts 32 cities and towns which have each 5000 inhabitants and upwards, and that one or more of these railroads pass through, or terminate in each of these towns, with the exception of Nantucket only, which is an island, 20 miles removed from the main land; and that on each railroad two or more passenger trains run to and from Boston daily, Sundays excepted. There are in the State ninety-eight towns of a population varying from 2000 to 5000, of which seventy-three are situated on some one of the said lines of railroad, and have the same facilities of communication as the larger class of towns. Of the 25 towns of from 2000 to 5000 inhabitants, 13 are seaport towns, mostly in the Old Colony, and a large proportion are situated near a railroad station in an adjoining town. The population of the smaller class of towns have the opportunities of railroad accommodation in nearly the same proportion as those of the class above mentioned.

Rutland and Washington Railroad.

The track of the Rutland and Washington railroad is already laid with iron to Granville, N. Y., a distance of 20 miles from Rutland, and the entire line from Rutland to Eagle Bridge, fifty-seven miles, will be ready for running this month. This line is intended to connect with the road running from Albany to Cohoes, and thence northward to Eagle Bridge.

Indiana.

Lafayette and Crawfordsville Railroad.—The Crawfordsville Review says that ten miles of the Lafayette and Crawfordsville railroad would probably be completed last Saturday, Sept. 20,

Ohio.

Cleveland, Painesville and Ashtabula Railroad.—The last stone of the Painesville bridge was laid on the 6th inst., and this massive structure which has a length of 795 feet, with piers 60 feet high, abutments 80 feet above the river level, and 88 feet above the waters of the lake, is now completed as to its masonry, and ready for the superstructure. The first stone was laid no longer since than the 26th of May last; so that Mr. Lockhart, the energetic contractor, has collected and raised the whole in about three months of working time.

The Willoughby bridge is in course of completion; the timber being on the ground, and work in full activity, so that the laying of the track, which has commenced at the Cleveland terminus, will not be impeded, and will reach Painesville in good time. The earth-work on the line is nearly done throughout the line from Cleveland to Ashtabula; but few openings remaining, and those a few weeks' work will complete. The earth along this line is of the best description, as a general thing, being over full one-half of the distance from Ashtabula to Painesville either gravel or sand, so the work of blasting will be, so far, already done, and the cost saved.

There are no curves on any of the running lengths of this railroad; between station and station, the line is invariably straight, and the necessary curves are introduced at the several stations or stopping places. This is a novel feature, and an excellent one.

We are informed that the laying of the track from Ashtabula westward, will be shortly expected to assist this operation, so that by the time the superstructure at Painesville is completed, the iron track from Ashtabula will there meet that advancing from Cleveland, and sixty miles of road be at once opened.—*Ashtabula Telegraph.*

Baltimore and Ohio Railroad.

The following table shows the gross revenue of the Baltimore and Ohio railroad, for the year ending on the 1st of October, 1851, compared with the corresponding year of 1850:

	1849.	Main Stem.	Washington Branch.
October,			
Passengers.....	\$40,334	20	\$19,897 22
Freight.....	86,868	77	4,712 09
November,			
Passengers.....	30,179	42	17,370 76
Freight.....	94,288	04	4,336 43
December,			
Passengers }	118,240	12	24,079 50
Freight. }			
1850.			
January.			
Passengers.....	\$24,828	82	\$18,009 17
Freight.....	66,547	89	3,888 97
February,			
Passengers.....	29,090	34	19,523 29
Freight.....	75,630	01	3,925 68
March,			
Passengers.....	44,271	15	25,953 72
Freight.....	81,747	03	7,255 00
April,			
Passengers.....	35,574	85	21,945 85
Freight.....	68,677	94	3,941 94
May,			
Passengers.....	33,177	36	24,543 72
Freight.....	72,840	39	4,240 69
June,			
Passengers.....	29,768	15	21,168 03
Freight.....	82,484	20	6,027 59
July,			
Passengers.....	32,543	53	24,407 45
Freight.....	61,691	82	2,821 64
August			
Passengers.....	31,773	82	23,256 86
Freight.....	73,550	29	3,674 61
September,			
Passengers.....	33,636	35	24,300 50
Freight.....	94,355	00	11,921 68
	\$1,343,805	27	\$321,201 46
			1,343,805 27

Total of 1850.....\$1,666,006 63

	1850.	
October,		
Passengers.....	\$37,542	10
Freight.....	97,325	04
November,		
Passengers.....	25,802	46
Freight.....	84,544	87
December,		
Passengers }	124,590	60
Freight. }		
1851.		
January.		
Passengers.....	\$25,298	63
Freight.....	90,450	07
February,		
Passengers.....	27,567	98
Freight.....	90,402	11
March,		
Passengers.....	33,635	14
Freight.....	84,353	74
April,		
Passengers.....	29,503	96
Freight.....	71,035	03
May,		
Passengers.....	25,589	32
Freight.....	66,638	87
June,		
Passengers.....	25,086	78
Freight.....	85,768	19
July,		
Passengers.....	29,036	10
Freight.....	65,912	07
August,		
Passengers.....	33,417	51
Freight.....	69,254	80
September,		
Passengers.....	36,878	35
Freight.....	89,589	04
	\$1,349,222	75
		\$309,537 75
		1,349,222 75
		\$1,659,760 50
Total of 1850.....	\$1,666,006	63
" 1851.....	1,659,760	50
Decrease.....	6,246	13

This statement, under all the circumstances that has attended the year, is a most gratifying one. The business of the year ending with September, 1850, was greatly over that of the previous year, and was owing in part to large amounts of freight that were sent over the road, to meet the demand and high prices which then prevailed. And with this, the Ohio river was in a much better navigable condition during the last summer than it has been this, whilst the railroads from Cincinnati to Cleveland, and from Erie to New York were not then completed. Now, however, these roads are completed, and by reason of the Ohio river being so low that it is scarcely navigable now for boats of the smallest class, a large amount of the travel, which would have passed over the Baltimore and Ohio road, has been attracted from it to the lake route by way of Cleveland, and Dunkirk and Buffalo.

This has left the Baltimore and Ohio railroad to depend on its local trade and travel—a trade and travel, which under no circumstances, can be withdrawn from it—and yet, as we see, the gross revenue of the road to Cumberland has been greater than last year, amounting to \$1,349,222 75, which if the road were to stop at Cumberland, would pay certainly over 6 per cent. on the par value of the stock. We may infer from this, what revenue it will yield when the road reaches the Ohio river.—*Baltimore Patriot.*

East Tennessee and Georgia Railroad.

We understand, says the Knoxville Register of the 18th ult., that Mr. Prichard and his corps of engineers, are now busily engaged in resurveying and relocating the route for the railroad between Blair's Ferry and Knoxville. They have already permanently selected the site where the bridge will cross the Tennessee river, and the company will probably let the bridge out by contract at the next meeting of the Directors, and also a part of the road for grading.

Boston Railroads.

For the purpose of ascertaining the number of persons arriving and departing daily to and from the city of Boston, the city marshal, a few days since, so distributed the police as to enable him to make up an accurate list of all persons passing over the great thoroughfares leading to that city. The following is the statement of the arrivals and departures by railroad for one day.

PASSENGER TRAINS OUT.

Trains.	Cars.	Passengers.
Lowell.....13	116	1,375
Maine.....22	132	2,584
Fitchburg.....22	148	2,123
Eastern.....11	30	1,804
Old Colony.....14	136	2,264
Worcester.....22	192	2,580
Providence.....16	111	1,946
Total.....120	872	12,952

PASSENGER TRAINS IN.

Trains.	Cars.	Passengers.
Lowell.....12	114	1,305
Maine.....21	178	2,600
Fitchburg.....22	146	1,952
Eastern.....10	34	1,697
Old Colony.....14	118	1,981
Worcester.....21	178	2,367
Providence.....16	122	1,670
Total.....116	1,132	11,963

FREIGHT TRAINS OUT.

Trains.	Cars.	Passengers.
Lowell.....9	388	40
Maine.....5	160	27
Fitchburg.....7	172	50
Eastern.....1	20	10
Old Colony.....7	272	32
Worcester.....5	186	30
Providence.....4	134	118
Total.....38	1,332	307

FREIGHT TRAINS IN.

Trains.	Cars.	Passengers.
Lowell.....9	271	45
Maine.....5	261	26
Fitchburg.....9	207	52
Eastern.....1	16	10
Old Colony.....6	197	28
Worcester.....5	150	30
Providence.....4	134	117
Total.....39	1,138	308

The whole number of railroad trains leaving the city was 158; arriving, 155. Total of arrivals and departures, 313. The number of passengers arriving by railroad was 12,291; departing, 13,259.—Total of arrivals and departures of passengers, 25,539. Below we give the recapitulation of all the arrivals and departures of persons for the day:

Went out.	Came in.
Per passenger trains.....12,952	11,963
Per freight trains.....307	308
Per vehicles.....15,964	14,942
On foot.....12,887	14,310
On horseback.....124	127
With handcarts.....79	79
Total persons.....42,313	41,729

The above may be taken, we presume, as a fair average of the daily arrivals and departures, both of railroad trains and persons.

Canada.

St. Lawrence and Atlantic Railroad.—The formal opening of this road for business to Melborne, 73 miles from Montreal, took place on the 15th inst. Beyond Melborne the road is graded to Sherbrooke, 23 miles. The entire road will be completed during the next season, unless in the excavations to be made, the company meet with some formidable unknown obstructions, requiring a longer time to remove them, than is at present anticipated. Further, that so far as funds are concerned, they are provided with the whole amount necessary to complete and stock the road.

Kentucky.

Covington and Lexington Railroad.—The Directory of the Covington railroad company have ordered a corps of engineers to survey and locate the road between Paris and Lexington. The company have a charter that authorizes them to construct a railroad from Covington to Lexington, and they expect to accomplish the work with the least possible delay.

From Falmouth down, the contractors with full force, are at work with commendable activity. The tunnel at Grant's Bend will be completed by the 1st of April next.

The difficulties about the right of way between Anderson's Hill and the Depot, in this city, have been pretty much removed, and the work on all this part of the road will be commenced at an early day. Messrs. T. Greer and Carmichael have taken the contract for the tunnel at Anderson's Hill. They are responsible, energetic men, and will push the work through.—*Covington Journal of the 4th inst.*

Maine.

Portland and Kennebec Railroad.—The railroad meeting, at Richmond, on Thursday last, was well attended, and the best of feeling prevailed. The old Board of Directors was re-elected, with the exception of Wm. B. Grant, of Gardiner, who declined, Major Lally being chosen in his place—and of Henry Reed, Esq., of Hallowell, who also declined, and Abram Rich, Esq., takes his place.

It was voted to issue bonds of the company for \$200,000 to be sold at not less than 90 per cent. The sum thus to be raised is mostly wanted for station houses and furniture not included in the estimate last year—for the payment of some debts not then known—for excess of land damages over and above the estimates—for payments to the sinking fund and for interest, not included—and for some other items. We understand that about \$50,000 worth of bonds was taken or provided for on the spot. The road is now so nearly completed that we may with certainty consider all the items of expense to have been definitely ascertained, and that no farther calls will be made.—*Kennebec Journal.*

Newly Invented Wheels for Steam Vessels.

Captain Geo. S. Weeks, the Oswego Ship builder, has invented a new wheel for propelling vessels, and has taken the necessary preliminary steps to secure a patent right for the same. This wheel is believed to be an important improvement, which will supersede the wheels now in use. It has been introduced into the steam tow boat Howard, now employed in towing vessels in our harbor, and works admirably. A much higher degree of power and speed are attained, without the slightest jar from the wheel.

It is difficult to convey an intelligent idea of the construction of the wheel, which can be seen in operation on the Howard. The buckets cross each other at an angle of about 45 degrees, and are slightly curved or twisted so as to enter and leave the water perfectly easy, and without the jar produced by the ordinary wheel. By this form of construction, a much greater strength is obtained for the wheel, and is also much better adapted to the variations in the draft of sea going vessels. The prominent and manifest advantages of this wheel over those now in use, are the attainment of greater speed, and the entire relief of the vessels from the motion or jar which more or less attends vessels propelled by steam.—*Oswego Times.*

Coal in Iowa.

Dr. Owen, the geologist, who surveyed the State by order of the United States Government, stated before the American Scientific Association, in reference to the coal deposits of Iowa, that—

"Between Johnson and Iowa counties an uplift of carboniferous sandstone is encountered, which is probably near the eastern limits of the Des Moines coal field. The Iowa river meanders near the eastern margin of this coal field, but the seams presented on the river are of inferior quality. It is upwards of two hundred miles in the direction of the valley of the Des Moines across the great coal fields. Westwardly it extends from the Des Moines

river nearly across the State of Iowa. The entire area of this coal field in Iowa alone cannot be less than twenty thousand square miles, in all embracing a country nearly equal in extent to the State of Indiana."

He estimates the beds of coal to be one hundred feet in thickness, and, lying near the surface, they must be capable of being worked easily and at small expense.

Evansville and Illinois Railroad.

We learn from the second annual report of this company, submitted to the stockholders on the 6th inst., that rapid progress is being made toward the completion of this work to Princeton, 27 miles.—Already the iron is laid for 10½ miles from Evansville, and the work is in such a state of forwardness, as to justify the belief that the road will be opened to Princeton on the 1st of January next.

The company speak in high terms of the material and machinery purchased abroad for the road. The locomotives were manufactured by Messrs. Norris, Brothers, of Philadelphia, and are stated to be equal to any ever made in the United States. The cars were manufactured by Thresher, Pacard & Co., of Dayton, Ohio, an enterprising company recently located in that place.

In his report, speaking of the extension of the road to Indianapolis and Vincennes, the President says:

"The extension of the road through the Valley of White river to the Capital of Indiana a distance of 180 miles, is a consideration of vital importance, and should never be lost sight of by the Company. To enable the company to accomplish that object, the Legislature of Indiana at its last session granted to them an amendment of their charter, which amendment has been adopted by the company. For the purpose of raising means to put under contract that portion of the road lying between Princeton and Vincennes, a distance of 24 miles, books for the subscription of Stock were opened at Vincennes, and other places along the line of the road, and I am gratified in having in it power to communicate to the Board of Directors and to the Stockholders, the intelligence, that Stock has been taken sufficient in amount to justify the company in ordering a survey and location of said road. I therefore recommend that the Board make an order for its immediate survey and location. At the last session of the Legislature a company was incorporated by the name of the "Wabash railroad Company," to construct a road from Vincennes to Terre Haute, a distance of sixty-five miles, with the power to extend the same up the Wabash Valley through Parke county to Crawfordsville in Montgomery county. There is a privilege given in the charter for that company to become incorporated with the Evansville and Illinois railroad company, if the interest of the two companies shall require such union. That the completion of the road from Vincennes to Terre Haute will greatly add to the business of our road, cannot be questioned. Taking into consideration the very small sum it will cost to prepare the road from Vincennes to Terre Haute for the iron, and the large amount of travel and traffic flowing down the rich Wabash Valley that must pass over that road, there will not be found in the State of Indiana, or even in the United States, a better paying road from the very moment it shall be put in operation. Of so much importance will that road be to the eastern portion of the State of Illinois, and western Indiana, that we cannot look on with indifference to its progress. Our interest identified with their interest, and every thing our company can do to advance that work, ought to be done. There is probably no road that can be graded as cheap, and it has no stream of any magnitude to cross. The people along the line of the road can grade and bridge it, without embarrassing themselves in the least. The iron, which at present prices may cost some two hundred thousand dollars, is the great item to provide for.—Cannot our Company aid them in procuring the iron? Is it not our interest to do so? I think both of these questions may and ought to

receive a decided affirmative answer.—With a view of bringing about the early commencement of that road, I recommend that our Board make such order in the premises as may tend to accomplish that object.

The financial affairs of the company are in a very favorable condition. The whole cost of the road, when completed to Princeton, will be about \$260,000, viz:

Iron.....	\$100,000
Grading and bridging.....	90,000
Equipment, etc.....	70,000
	<hr/> \$260,000

The company has no liability beyond its means. The iron and grading have been paid for. The last item of \$70,000 was obtained upon the company's bonds, having ten years to run. The company has also, undisposed of, \$80,000 in the bonds of Vanderberg county, which can be applied to the extension of the road north.

After the presentation of the report, resolutions were passed, instructing the directors to proceed forthwith to make a final survey of the "Evansville and Illinois railroad" from Princeton to Vincennes—procure the right of way along the line of said survey, and as soon as said route is permanently located, put the grade of the same, and the section of the bridge across White river under contract; also to take measures as soon as practicable, to procure sufficient railroad iron, to lay the track from Princeton to Vincennes as soon as the same is permanently located.

A committee was appointed to confer with the Henderson and Nashville railroad company, in reference to the construction of their proposed road. A resolution was also passed, complimenting "the president, directors and officers of the Evansville and Illinois railroad company, for the efficient measures taken by them to complete said road to Princeton, and stating that they have the entire confidence of the company."

By reference to a map of Indiana, it will be seen that the extension of this road to Terre Haute and Indianapolis is a matter of great importance to a large portion of Indiana. Such an extension is necessary to give symmetry to the railroad system of the State, and to secure to every portion of it the advantages of this kind of communication. Evansville, being situated near the mouth of the Wabash, and being the southern terminus of the great Indiana canal, must become the shipping port for the western and southwestern parts of Indiana. It is highly important, therefore, that it should be accessible by railroad from every portion of it. It would also be the great route for travel going south, which would take that route striking the river at the lowest point, for the saving of time effected, and for the reason that navigation below Evansville is better than above.

The company in the management of its affairs has proceeded with great prudence and discretion, and consequently find themselves in the present pressure in the money market, in entirely independent circumstances, and in good condition to go on with new work.

The directors for the present year are Jno. Wise, Jas. G. James G. Jones, Jno. Ross, G. B. Walker, B. M. Thomas, Jno. S. Hopkins, Wm. Burtch, Sam'l. Orr, Sam'l. Hall, Alanson Warner, John Ingle, jr., R. W. Dunbar, John M. Stockwell.

At a meeting of the directors, Samuel Hall, of Princeton, was re-elected President; John Ingle, Secretary; Alanson Warner, Treasurer—all the same officers as last year.

Tolls on the James River Canals.

A good deal of dissatisfaction prevails on the line of this work, in consequence of the high rate of tolls charged, which are five or six times greater than the rates charged for similar articles on the canals in this State. The former appear to us to be exorbitant, but it must be borne in mind that the policy which regulates the rates of toll on the Erie, are not applicable to the James River canal. In the case of the former, it may be safely calculated, that any important reduction in the cost of transportation, will be followed by a large increase of freight. Such would not be the case with the Virginia canal. This work at present only extends to Lynchburgh, 145 miles, and commands the traffic of a small belt of country only. The receipts of the James River company are barely sufficient to keep the canal in order and pay the interest on its indebtedness. This company is not in a position to act with a sole eye to the public convenience, but is forced to pursue that policy which bids fair to produce the greatest amount of revenue. The company must have all the income it can get, and if the rates of toll are such as to secure this end, we do not think that it is liable to censure. The work is a great benefit to the public at large. The stockholders have sunk their entire capital, and they are certainly entitled to receive a sufficient return to pay the interest on their loans. Whether a lower rate than is at present charged, would yield a greater revenue, we of course are not competent to decide.

The Erie canal, on the other hand, opens cheap and expeditious route for the whole west and southwest, with the sea board; and a more convenient outlet for the territory penetrated by the Mississippi and the great lakes, than by following them to the ocean. New York is the great receiving and distributing depot for the United States, both for our domestic products, and foreign merchandise. A greater part of our surplus produce seeks this market, and if we can reduce the cost of transportation over the Erie canal 25 per cent, we add a much larger per cent to the territory that takes this route to a market. Every important reduction in tolls demonstrates this. The reduction made last winter, equal to 25 per cent on the most important articles, fully proves this fact. The tonnage moved on the New York canals the past year was 3,647,020 tons. The receipts this year are already 250,000 in excess of the past; which shows that the increase of tonnage has been much greater than the reduction of tolls. Nearly all the iron for western railroads has taken this route for the present season, in preference to that by New Orleans. The merchants of Louisville, Ky., for the first time are now receiving large supplies of their merchandise via the Erie canal; and we have no doubt that in a few years, the whole west, north of the mouth of the Ohio, will make use of the same route as their outlet to the seaboard.

One great reason operating strongly in favor of the Erie canal route, is the certainty with which merchandise can be forwarded, during the season of navigation, to its point of destination. The supply of water for this great work is abundant, even during the severest droughts; and accidents seldom occur that interrupt the navigation beyond one or two days. With the enlargement, which will give a depth of 6½ feet of water, its capacity for business will be unlimited. All similar works in this country are liable to have their business interrupted, either by freshets or droughts. Another fact equally in its favor, is the small cost by which it can be

reached from distant points. Large quantities of corn have been brought from Toledo to this city the present season, a distance of over 800 miles, for 13 cents per bushel, or \$4 50 per ton. At the same rate, flour could be brought for a little less than 50 cents per barrel from the same point; the same that it costs to transport a barrel from Lynchburgh to Richmond, 145 miles! We state these facts to show that the Erie canal is no guide for any similar work in this country, for the reason that no other canal presents the same conditions, as far as cost, route and connections are concerned.

For the American Railroad Journal.

In considering the different routes by railroad connection between Lake Ontario, and New York and Boston, the one first opened seems to be rather overlooked. From Albany to Syracuse, by double track railroad, is 147 miles, and from thence to Oswego is 35 miles—making 182 miles.

The Western and Worcester railroads together, constitute from Boston to Albany 200 miles of the most efficient line in New England; thus the distance by this route is 382 miles from Boston to Oswego.

From New York to Oswego the distance is 327 miles. It is well known that Oswego is the largest town on the American side of Lake Ontario. Its commerce is by far greater than any other town on our side. The navigation interest of Oswego is very large. In addition to this, is the fact that its manufacturing power is very great. There is probably more flour made at Oswego than at any place in our country. The mills are supplied directly from the great wheat growing States of the west, by vessels coming through the Welland canal. Oswego is easier reached from the west, than any town at the foot of the lake, and with the advantage of its milling power, it possesses great advantages. Now that the tolls are taken off the railroads, the trade by this route must increase, and it will be soon learned that this is the shortest line both to Boston and New York. ONTARIO.

Stonington Railroad.

We have received a copy of the annual report of the Stonington railroad, from which we gather the following facts. The receipts of the company for the year ending August 31, 1851, were:

Passengers	\$128,043 08
Freight.....	73,289 13
Mails and rents.....	5,445 67
Interest	470 56

207,248 44

Balance on hand August, 1850..... 7,727 32

Total.....\$214,975 76

EXPENDITURES.

Expenses and repairs.....	\$84,959 51
New Equipage.....	4,548 72
Interest.....	45,702 00
Bonds paid.....	41,785 00

176,995 23

Balance on hand.....\$37,980 53

The work of relaying the road is completed all but a mile and a half of the main track, and the turnout at Kingston.

The receipts from passengers and freight were.....\$201,332 21
Last year..... 180,771 24

Increase.....\$20,560 67

of which two-thirds has been on local business.

The total amount of freight is 87,046,078 lbs., of which 21,026,787 lbs. was way freight. The debt has been reduced during the year \$46,000. The entire debt of the company is \$699,546. The com-

To Sandusky or Toledo perhaps 25 cents per ton more. From the Lake to Cincinnati, on the railroad, \$5 per ton—by canal, \$3 per ton.

Hudson River Railroad.

The formal opening of this important work was celebrated on the 8th instant, by the observance of the ceremonies usual on such an occasion. The company had made the most elaborate preparation for the event; the weather was most favorable, and the day passed off without the slightest accident, and most delightfully to the excursion party.

The excursion train, with the stockholders of the company, the common council of the city of New York, and a large number of invited guests, left the Chambers street depot, at 7, and the depot at 32d street at 27 minutes past 7, a.m., and reached East Albany at 11:23, making the entire time consumed from 32d street, New York, to Albany, *three hours and fifty-five minutes*; and deducting the time lost in stoppages, makes the whole running time three hours and twenty-four minutes.

The locomotive which performed the work, is called the "New York," and was run by Samuel Kiersted, the engineer. The entire management of the train devolved upon Mr. J. D. Vermele, the conductor, who performed the work entrusted in a manner highly creditable to himself, and to the entire satisfaction of all.

All the officers of the company were on the train, including W. C. Young, Esq., who the day previous had been elected president, E. Jones, Esq., vice president, J. M. Hopkins, Esq., treasurer, and O. H. Lee, Esq., secretary and acting superintendent.

In a short time after reaching East Albany, the company were invited to partake of a magnificent dinner, prepared for the occasion, in the immense depot of the company at that place. This building is an octangular edifice, and of great extent. In the centre, tables had been arranged for the Press, and for the chief of the guests, and from these, long tables radiated in every direction to the walls.—By the polite invitation of Mr. Hingham, the superintendent, the ladies, of whom there were quite a number on the ground, were permitted to take a survey of the tables and fixings.

Edward Jones, Esq., chairman of the committee of arrangements, presided. At his right sat Gov. Hunt; on his left, Mr. Boorman, recent president of the company.

After ample justice had been done to these good things, and the demands of the keen appetites, caught by the exhilarating journey, had been satisfied,

Mr. Edward Jones, chairman, addressed the assembly as follows:

GENTLEMEN—We are assembled on this occasion to celebrate an event of general interest. The great work, which for several years past has engaged the attention of the public mind, has been prosecuted to a successful termination. That which was ridiculed by some, and regarded by many as impracticable, is at the present moment a fixed fact, and the completion of the Hudson River railroad becomes a marked point in the history of our internal improvements.

But whatever opinions may have been entertained as to the feasibility of this enterprise, now that it is completed, all present must admit that it will prove eminently useful. To locate a railroad along the banks of the noblest river, and subject to the competition of the most perfect steamboat navigation in the world, was a bold project, and though, perhaps, in its first conception, somewhat in advance of public opinion, it was nevertheless essentially necessary. The time had arrived when New York could no longer remain at ease, securely trusting to her natural advantages, unless she were prepared to yield the rich treasures of the interior as a prize to more active and more determined competitors, and the opening of this new and improved channel of communication is only the fulfilment of an actual requirement of the

present moment. And for the future, when our commercial metropolis, at no distant day, shall be doubled and trebled in its numbers, and the population and wealth and resources of the whole country shall be correspondingly developed, who can say that this avenue of trade, and others still in course of construction, shall be sufficient for the vast demands which will be made upon them?

If that great natural highway, on whose surface so gracefully, and so proudly floats the commerce of the State, should, by a stroke of Providence, have its fountains sealed up, and become an arid waste, the dire effects of so disastrous calamity on the pursuits of industry, could be appreciated by all, and would be felt far and wide. Yet what is here presented as a mere picture of the imagination, may be said to have hitherto had a reality, during a fourth or a third of every year, when that same highway lay fast bound in the icy chains of winter. It is true the laws of trade have been obliged to accommodate themselves to a stern necessity, and that which was unavoidable, had to be endured. But what a change must now ensue, and what a different aspect of life and activity must the valley of the Hudson hereafter assume, when its commerce, no longer subject to a periodic paralysis, and no longer dependent on the season for the movement of the waters, shall now runs in an uninterrupted stream to the center to which it is destined?

It is right, gentlemen, that the day which ushers in an enterprise of such vast magnitude, and so beneficial in its influence, should not pass unobserved; and you have been invited, without any attempt at display on the part of the company, simply to view the result of their labors, and to join in a friendly interchange of sentiments on an occasion in which you are all more or less deeply interested. Permit me, therefore, as Chairman of the Committee of Arrangements, to extend to all present, on behalf of the directors, their hearty congratulations; to the stockholders, that their intentions as to the construction of the road, are successfully carried out; to the cities of New York, Albany and Troy, and places along the line, that new facilities of intercourse are opened to them; and to the State, that another of those great works is achieved, to which she may point with pride as the sources of her wealth and the monuments of her greatness. He then gave—

The State of New York—Unrivalled in her natural position, she now stands pre-eminent in her internal works.

To this sentiment, Gov. Hunt responded in a very appropriate manner, and gave at the conclusion of his remarks the following sentiment—

The President and Directors of the Hudson River Railroad Company—They have conquered every obstacle—may they "go on their way rejoicing;" we hail them as public benefactors.

A call was made for Mr. Boorman, who responded as follows:

Mr. BOORMAN responded as follows:—

He protested against the action of the chairman and his accessory, Gov. Hunt. They had called him up in the middle of this great room merely to corner him. I can't make a speech. I have always been a working not a talking man. All I can do is to give a short history of what brought me here.—New York had been famous for her railroad enterprises, when she found her sister city running away with her business. The first enterprise was the Harlem Company. After ten years it reached Spuytendevil creek, or Harlem. This consumed ten years. Then followed a charter for a railroad through the eastern part of the river counties. In 1841 Mr. Allen tried to get up a subscription among the moneyed men—I'm not one myself. Mr. A. opened a subscription. Six or eight subscribed.—Finding it lagged, Mr. A. said, hand me the paper: and he put down one-fourth of all subscribed. \$55,000 was all that was obtained.

At a later period, Samuel Stevens made another effort. In six weeks they got \$90,000. I took a humble part in both.

In '45, a gentleman in my eye called upon me, and said he understood I was for a railroad to Albany. I said yes. He then asked me if I ever heard of a survey of a road on the river, "What,

over the Highlands?" Yes, said he; and he handed me a little blue book, which I have kept ever since. I was convinced that this was the road, and I said I was ready. We got a new charter for an undefined route. We were opposed by that particular portion of the community which resides in Wall-st. We were beaten, kicked out and the Harlem road got the charter.

But the following Summer, a Convention was proposed for the Hudson river railroad. It was got up, and New-York sent two delegates (both self-constituted.) I was one, a personal friend was the other. A survey was ordered, and next Winter we got our charter, after hard work.

We succeeded in obtaining our subscriptions in March, 1846. The Company was organized with a capital of three millions. You know our history since.

I want to read the title of this little blue book, which induced me to go into the work. [Its title page was read. It was the report of a survey of a railroad on the banks of the Hudson, and it entered into an argument to prove that the road was feasible.]

That blue book is Richard B. Morgan's Survey of the route of the H. R. R. R. Gouverneur Kemble, of West Point, found out this engineer, and introduced him to the residents of Poughkeepsie. They induced him to make the survey.

Mr. Boorman closed by offering the following toast:

The citizens of Poughkeepsie, Gouverneur Kemble of *Cold Springs*, and R. P. Morgan, of *Poughkeepsie*, to whom the public are indebted for the pioneer effort which resulted in the construction of the most important railroad enterprise in the United States of America.

Brief addresses were also made by Ex-Governor Marcy, Hon. J. C. Spencer, Hon. A. C. Kingsland, Alderman Murphy of this city, and Gen. Ward of Westchester; after which Mr. Jones announced that the hour had arrived to start for New York. Three cheers were proposed for the President, and the company adjourned with three times three.

The return train left East Albany at 2:06½ p.m., and reached 31st street at 5:46 p.m. From this, 11½ minutes should be deducted for stops—making the running time 3 hours and 28½ minutes for 144 miles: the best time ever made in America. At 32d street the company debarked, gave hearty rounds of cheers for the engineer, conductor and superintendent, and separated, reaching home before dark, after travelling to and from Albany and enjoying a dinner, all by daylight. Such a performance, a few years since, was deemed a perfect impossibility. All those concerned in the management of this celebration fulfilled their duties excellently, and deserve public commendation. Everything went off harmoniously, regularly and promptly.

The Hudson River railroad company was organized in March, 1847, and during that and the next year, subscriptions to the stock were received amounting to \$3,110,500, of which \$2,394,290 was paid in. In 1847, the line was located as far up as Poughkeepsie, and the work was begun in Westchester county. For a considerable period after the organization of the company, it was much depressed by financial difficulties, but when the character and importance of the undertaking became more generally known, these obstructions passed away, and the confidence of the public and of capitalists was freely bestowed. The engineering department was managed up to August, 1849, by Mr. John B. Jervis, and from his hands it passed to those of Mr. Wm. C. Young, president of the company.

The road to Poughkeepsie is located upon the banks of the Hudson river, and a vast amount of heavy rock cutting and filling, as well as tunneling, was required in getting through and around

the formidable mountain barriers that skirt the banks of the river for this distance. The work progressed slowly for many months, and considerable grumbling was heard as to the non-fulfillment of expectations as to opening. On the 30th of September, 1849, the road was opened from 32d street in this city to Peekskill, and on the last day of the year it was opened to Poughkeepsie, 75 miles from New York. On the opening of navigation in the spring of 1850, the company employed two steamers to run from Poughkeepsie to Albany, and established regular communication with the great western route via Albany and Buffalo, and since that period (a few weeks of ice excepted) this communication has been regularly kept up. That portion of the road between Poughkeepsie and Albany was put under contract in July, 1850. On the 16th of June the road was opened to Hudson; July 7th, to Oak Hill; August 3d, to Tivoli; and October 1st, to New York. The entire length of the road is 143½ miles, not including double track and sidings of 45 miles.

The whole cost of the road has been about \$10,000,000. In addition to this, at least \$1,000,000 more will be required to complete a double track over the whole line, which the company propose to lay next season.

So much for a brief statement of the opening ceremonies, and the early history and progress of this great work, which is second only in importance and in cost of construction, to the Erie railroad, among all the roads in the United States. It connects the two extremes of the great Hudson river basin, at one of which are collected, in the city of New York and its suburbs, at least 750,000 people, and at the other at least 100,000, in the cities of Troy and Albany. At the head of this basin, railroads radiate in all directions, and to these the Hudson River road stands as the trunk line, connecting them all with New York. The Hudson River road now opens to us on the north, a direct railroad route to Montreal, a distance of nearly 400 miles. Buffalo can be reached by this route by 469 miles, exactly the distance from this city to Dunkirk by the Erie road. When the improvements between Albany and Buffalo shall be completed, the distance by railroad, between the latter city and New York, via the Hudson River road, will be reduced to 444 miles.

Charleston and Memphis Railroad.

The requisite amount of stock in this road, to authorise the commencement of the work of construction, by the terms of subscription, having been obtained, viz., \$2,500,000, the company are now taking active measures for the vigorous prosecution of this great enterprise. One of the directors, Mr. Brinckley, has gone to Europe to purchase iron sufficient for the Lagrange and Tuscumbia road, which together make an aggregate of about 100 miles. The Lagrange road, as it is termed, was graded many years since and then abandoned. The old work can now be rendered available at a very slight additional expense. The Tuscumbia road is laid with a flat bar, but is in a very dilapidated condition. By supplying the above divisions with a heavy rail, they can be brought into immediate and profitable use. If the work of construction shall be prosecuted with the same energy that has characterised the efforts of the company in getting up their subscription, the Southern States will soon enjoy an uninterrupted railroad communication between the Mississippi and the Atlantic.

Ohio and Mississippi Railroad.

The Chief Engineer of this road, E. Gest, Esq., of Cincinnati, has completed a preliminary survey of the route of the western, or Illinois division of this road, extending from Vincennes, on the Wabash, to the Mississippi river, opposite St. Louis, a distance of 143½ miles. The entire cost of this division, with a suitable equipment, is estimated at \$3,037,107 50, or \$21,204 per mile. Of the leading items of cost, the graduation and masonry is put down at \$1,065,859; the superstructure at \$1,226,097; equipment, \$390,450; suspension bridge at Vincennes, \$130,000. The route, as might be expected, is very favorable for a railroad, being remarkably direct, with easy grades. The survey, says the report, demonstrated the entire practicability of a road across Illinois, between St. Louis and Vincennes, without any curve whatever, and with no grade exceeding 26 40-100 feet to the mile, and at reasonable cost, while at the same time they indicate that the line can be made to conform to the established business places on the line of the several counties through which it passes, without materially affecting its merits as a great highway.

We copy the following from the report of the engineer in reference to the crossing of the rivers and bottoms on the route:

I beg further to remark, that the characteristics of the streams which the road encounters are peculiar, and casually observed would be considered as presenting formidable barriers to its construction, yet when studied they at once assume that character which allows them to be effectually crossed without difficulty. The country is so flat, and the descent so gradual, that it is impossible for the streams to carry off the water at the breaking up of winter and during unusual falls of rain. The consequence is, that the low bottoms on either side are frequently inundated to the depth of from one to seven feet, forming immense ponds of reservoirs, which are gradually vented. These ponds are without currents, excepting where the principal depressions occur in the low bottoms, consequently they are easily and safely crossed, by embankments thrown up to such a height as will prevent the water overflowing them during extreme rises; excepting where the main channel of the stream occurs, which must be bridged, care being taken to allow ample water way.

The American bottom, between the Mississippi and Bluffs has nearly the same characteristics, and no danger is to be apprehended from confining the Mississippi to its legitimate channel, by the construction of an embankment across it, and terminating on Bloody Island. But two things are absolutely necessary, first that the bank will be built to such an elevation as will preclude the possibility of the water going over the top of it, and second, that its termination be not too far in the river, so as to contract the stream too much; the termination should be constructed of crib work filled with stone, built on piles, if necessary, to prevent its washing away. The bank, to be made perfectly secure, should be built to the bluffs for a double track thirty feet wide on top. While at St. Louis in the spring, from the observations I then made, I concluded that the dike or pier then in progress of construction from Illinoistown to Bloody Island, contracted the river too much, and was not of sufficient elevation—not having seen it since the freshet, I am not so well able to judge if my inferences were correct. Should a flood occur as high as that of 1844, and the river be contracted too much, either the pier must give way, or the buildings on the Missouri shore be severely damaged by the current. It is important for the security of the work that there be no culverts or bridges under the road bed between the end of the pier and the bluff, as they will certainly be washed out during extreme floods.

Owing to the embankment having to be made mostly from earth taken from the side, a ditch sufficiently wide and deep can be left on either side to drain the bottom without culverts, &c.; and Cahokia creek should also be made to enter the river

above it. It is a question of calculation to determine the exact width to which the Mississippi can be safely confined, but my impressions are, that the pier built by the city and ferry company, extends some 800 or 1000 feet too far into the river. It will be necessary for the railroad pier to extend out as far as the ferry pier, otherwise the railroad boat will be unable to land against it, as a deposit of mud will be caused by the extra projection of the other. I consider it important that a connection be made directly with the river, and see nothing to prevent it. Such an arrangement with a good bias will be found to facilitate the working of the road materially, and be also the most economical as to time and expense.

I doubt not that the day is near when the Mississippi will be bridged, and the trains pass across to the city. The numerous improvements made by Mr. C. Ellet and J. A. Roebling, in suspension bridges, has made it perfectly practicable, and all that is required to carry it out successfully, is the funds; in fact, cable suspensions are the only secure means of bridging large streams, as they require, in most cases, no obstruction to be made in the water way.

I would here call your attention to the track; the part of a railroad the most essential of all to be made as perfect as possible. It is a settled question taking everything into consideration, that the cheapest and best track is made with a heavy iron rail, laid on ties which rest upon a bed of gravel or coarse sand of not less than 20 inches in depth, experience has shown that even these did not secure a perfect structure—for the want of connection where the two bars came together made them settle, and has stimulated the inventive genius of two eminent engineers to provide a remedy—the first is the new compound rail, manufactured by J. S. Winslow, of New York; the second is the three part rail, designed by Benj. H. Latrobe, of the Baltimore and Ohio railroad, and manufactured near Baltimore. Either of which I would recommend to your favorite consideration. Both have been tried, the former on two or three lines, and approved of by all, the other on the Baltimore and Ohio railroad, I believe has given every satisfaction.

There can be no question of the importance of the above road, not only to the two termini, Cincinnati and St. Louis, and to the intermediate country, as well as to the business community generally. Whether sufficient means have been secured to warrant the commencement of the western division, we are not informed. The leading directors and stockholders on this portion of the line reside in St. Louis. That city must contribute the principal part of the means required to build the road. This it could readily furnish if the public spirit of its citizens bore any relation to their pecuniary ability. We fear that they are lacking in the former from the difficulty experienced by the Pacific railroad in securing the small amount of stock required by that company. We hope, however, to be agreeably disappointed.

Harlem Railroad.

This road will be opened to Albany by the first of December next, so that we shall soon have two parallel lines to that city. It will be a few miles longer than the Hudson River, but the Harlem company expect to make as good time as the former road, so that either route will suit the convenience of the traveller. The Harlem has the advantage in the cost of construction, this being only about one-half of that of the Hudson River road.

The Harlem road will probably be extended north from Chatham, its present point of intersection with the Western, so as to connect with the Vermont Valley railroad, forming very nearly a straight line to Rutland, Vermont. Such an extension would add very largely to the convenience of the travelling and business public, and to the value of the stock of the road.

Atlantic and St. Lawrence Railroad.

Our readers will find in another column an advertisement of the letting of the last section of this work. It is the intention of the company to complete the road in a year from the present time, in season for the winter business of 1852-3. The Canadian company are pushing their portion of the line with vigor, and as they possess abundant means, there is no doubt of their being able to meet our own people at the time named. Within one year, therefore, we may confidently count upon seeing another railroad connecting the waters of the great lakes with the Atlantic ocean.

We have frequently referred to the above road as an excellent illustration of northern enterprise and energy, and of the steady perseverance with which they push forward their works when once undertaken. The city of Portland, a town of only 15,000 inhabitants before the railroad was started, found themselves overshadowed by its formidable rival, Boston, which, by the railroads she had thrown out into every part of New England, was gradually drawing from the former its very heart's blood. As every Atlantic city looked to the trade of the west as the great source of prosperity, the people of Portland, in casting about themselves for some means by which to retrieve their position, found that they were much nearer, geographically, to the St. Lawrence, than any other sea-port; and, acting upon this supposed advantage, determined to play a bold game, and strike for the prize, for which so many were contending. The co-operation of Montreal was secured, a charter was obtained, and in the little town of Portland \$1,000,000 of cash subscriptions were raised, which were promptly paid in, and expended upon the road.—This sum was nearly sufficient to carry the road to a paying point. The city then obtained authority to loan its bonds to the railroad company for \$1,500,000. They were readily disposed of, either at a premium or at par, though only 6 per cents, making the amount furnished by the city of Portland alone, by its stock subscriptions, and its credit, \$2,500,000. All this was accomplished by a town of less than 20,000 people. What is still more remarkable, the credit of the city was not affected in the least degree by the loan it assumed. The portion of the road in the United States will cost about \$30,000 to the mile. Of this sum, the contractors have taken one-quarter in stock upon the greater part of the line, leaving the balance to be raised upon the company's bonds. In this way has the city of Portland secured to herself a direct railroad communication with the St. Lawrence by a much shorter route than any other, and by one that is vastly superior, as far as grades and curves are concerned, to any one that can be built from any New England seaport. In addition to this it may be said, that probably no work of equal magnitude has moved along so quietly and steadily, without embarrassment, and without ever being cramped for means. The project has grown in strength and in public confidence each succeeding day. In the outset it was the laughing stock of every person not immediately interested in it. It was regarded as one of the wildest schemes ever undertaken in this country, and as one that would surely bring ruin and disgrace upon its projectors.—So strong was this feeling, that hardly a dollar of stock could be obtained out of Portland, and not a cent out of the State. The road now takes rank among the first in the country, and is regarded by all its rivals as a powerful competitor for the prize for which they are contending. As we said in the out-

set, there is no better monument in the United States of the public spirit, the enterprise, of the steady perseverance of the people of the Northern States, whose leading traits are, to be intimidated by no obstacle however formidable, nor discouraged by defeat.

The efforts of this company have been well seconded by the contractor for the road, John M. Wood, Esq., who has built nearly the whole road, and who is the sole contractor for the last 120 miles. It requires no small degree of ability to successfully execute a work of the magnitude of this, requiring the expenditure of vast sums of money, and the superintendence and oversight of large bodies of men. Mr. Wood has pushed forward his work vigorously and successfully, to the entire acceptance, we believe, of the company, and with a reasonable profit we presume to himself.

Ohio and Pennsylvania Railroad.

The receipts on this road west of Pittsburgh for the week ending Sept. 24th, were \$1,650. The Pittsburgh Gazette states that the success of the road exceeds the most sanguine expectations of its friends, and adds:—

As to the exact time when the road will be opened to Alliance, there is some uncertainty. Great efforts are making to push it forward with all the dispatch possible. Some portion of it will probably be opened in a month or six weeks. We think, from our knowledge of the state of the work, that we may safely calculate the road will be opened through to Alliance by the 15th of December, and to Massillon by the 1st of January. The iron is now laid down several miles west of Brighton and east of Alliance, and a third gang of track-layers has been put on the intermediate ground, to prepare the superstructure for the iron. A construction train now runs regularly from Brighton westward, and as soon as there is water enough in the Cross-cut canal a locomotive will be sent to Alliance to be employed in the work of construction. Most of the contractors have finished their jobs of grading and bridging, and it is confidently expected they will all be out of the way within thirty days.

Before the year closes, then, we shall have continuous railroad communications with Cleveland and Cincinnati, and with the vast net of railroad now in operation in Ohio, and although we shall not reap the full benefit of our great enterprise until it is finished, and we have more direct communication with Cincinnati, yet a connection with Cleveland and Massillon will open up to us a trade and travel fully justifying all the labor and money which have been expended.

Travel West.

The New York lines of railroad have heretofore monopolized the travel between the seaboard and the west, but, for the coming winter, the Pennsylvania works will bear off this prize. Passengers can now go by railroad from Philadelphia to Johnston, west of the mountains. From Pittsburgh, the Ohio and Pennsylvania will soon be extended, so as to connect with the Cleveland and Pittsburgh railroad, thus opening a continuous line of railroad between the latter city and Cincinnati. There will soon be only a small gap of unfinished line of railroad between Philadelphia and Cincinnati.

The Hudson River and the Erie railroads give us railroad connections with Lake Erie, but the road between Buffalo and Cleveland cannot be brought into use the coming winter, and the distance to be traversed by stage will be too great not to give for the present a decided advantage to the Pennsylvania route. By another winter, the entire Lake Shore railroad, from Buffalo to Cleveland, will be completed. This will give us a convenient route west over our own lines.

Kentucky.

Louisville and Nashville Railroad.—The directors of this company, at a recent meeting held at Louisville, resolved that they had no preference for either of the proposed routes, known as the upper and lower, the former running by way of Bardstown and Glasgow, and the other by way of Bowling Green, and east of Muldro ridge, as it is called, but that they will locate the road upon which ever route the necessary stock can be obtained, and if they find the stock can be raised on more than one route, that they will be governed in the location by what they shall deem the best interests of those concerned in the construction of the road.

It is estimated that the road will cost \$3,000,000, and that it will require four years to construct it. Of this sum, it is expected that the city of Louisville will furnish \$1,000,000, and the counties on the route, and the city of Nashville, \$2,000,000 more.

We see by the Kentucky papers that the people on the upper, or Glasgow route, are taking steps to secure a thorough canvass of all that portion of the State interested in having that one selected. The friends of the other route will, we presume, put their shoulders to the wheel to show what they can do. The rivalry may result in building two lines for a part of the distance. Certainly the people on both routes are able to construct their respective lines.

We are very glad to see that the people of Kentucky and Tennessee are arousing themselves to an appreciation of the importance of the above road, and to witness the determination which is everywhere manifesting itself, to build it in the shortest possible time. When opened, it will, in connection with other lines now in progress, and which will be completed in advance of the Louisville and Nashville, form a direct line of railroad from the great lakes to the Gulf of Mexico. Such a line would be a strong bond of union between what are now widely separated, and somewhat discordant extremes.

Illinois.

Central Railroad.—The action of this company is creating much dissatisfaction with the people of this State. The city of Chicago has just voted \$10,000 as "sinews of war" to compel the company to run direct to that city, instead of bearing toward the Indiana line, where the road can be met by a branch, running east, thus practically avoiding that city. The company estimate the value of the lands granted by Congress to be greater than the cost of the road, giving the whole project in the hands of the parties now in possession of the charter, the air of a grand speculation. The people of Illinois contend that an exorbitant price is put upon the lands; that they should be sold at a reasonable rate; and that the object of the grant was to benefit them, not a company of New York capitalists. There is undoubtedly much reason in their complaints, and a collision between the company and the State authorities seems very probable. The direction which the munificent grant of land by Congress to the State of Illinois has taken, will be likely to be fatal to similar grants to other States, which are now earnestly prayed for. If New York capitalists are chiefly to be benefited by such grants, Congress will be very slow in making them, no matter how great the advantage to the State receiving them. We think that Mr. Neal's pamphlet, though perhaps well calculated to enable the company to sell its bonds, is but poor-

ly fitted for the meridian of Illinois, and will strongly prejudice Congress against similar grants.

Illinois.

Aurora Extension Railroad.—We learn from the Aurora Beacon, that on the 8th ult., the newly organized corps of engineers of the Aurora Branch railroad commenced the preliminary survey of the route from that place to some point south of Knox's Grove, agreed upon for intersecting the Galena branch of the Central railroad. The party is headed by George W. Waite, of the Galena and Chicago Union railroad, who has charge of the road, under Mr. McAlpine, chief engineer, and is assisted by Allen Stack, formerly assistant on the Aurora branch, James Young and J. L. Estes.

Knox's Grove is situated about 22 miles north of La Salle, and 5 or 6 miles south of a due west line from Aurora. The distance from Aurora to Knox's Grove is but little over 40 miles.

Kentucky.

New Railroad from Louisville to Cincinnati.—A project, says the Cincinnati Gazette, has recently been started in Louisville and elsewhere in Kentucky, to bring the cities of Cincinnati and Louisville within less than four hours of each other, by railway. The project originated with Mr. George G. Dicken of Kentucky.

He proposes to tap the Louisville and Frankfort at Eminence, in Henry county, and pass through New Liberty, in Owen county, and through Boone county, to Covington. The line passes through a populous and well cultivated portion of Kentucky. This Mr. Dicken says, would "at once connect Louisville with Cincinnati, and "all the railways in Ohio pointing eastward."

"It would cause all the travel for and from the East and Southwest to pass through Louisville.—It is strange this important link has so long been overlooked. It is not generally known that the distance from Louisville to Covington is less than one hundred miles, and that forty miles of this distance—from Louisville to Eminence—is now completed and in successful operation. So that by building only sixty miles of road, through the best and richest part of Kentucky, over a route generally highly favored by nature for the construction of a railroad, Louisville and Cincinnati would be brought within less than four hours of each other.

He estimates the cost of this road at \$15,000 a mile at most, and is confident, it will be "one of the best dividend paying roads in the United States." The project demands examination, and the present is a favorable time to look into the matter.

Indiana.

The Indianapolis and Belfontaine road was opened on the 9th inst., by an excursion, carrying thousands to Chesterfield, forty-two miles from the Capital; the work is progressing. This road when completed will give to Central Indiana, a direct outlet east to the connection with the Sandusky, Cleveland, Pittsburgh and Columbus roads, opening the great thoroughfare from the Lakes and Atlantic cities to the Capital of the State of Indiana, and by the roads centering there, to the lower Ohio, Wabash, and Mississippi rivers.

Georgia.

The Railroad connection.—The connection between the Central and South-western roads, says the Macon Journal, has been so far completed that several trains of cars have passed and repassed from Savannah to Oglethorpe. The work upon the Macon and western branch is heavier than on the above, and will not be completed in several weeks. It will be pressed forward, however, as fast as possible, and we trust that the entire track, depots and fixtures will be finished in ample time to secure the trade of upper Georgia, Alabama and Tennessee.

Michigan.

Detroit and Pontiac Railroad.—This important thoroughfare has, under its new auspices, taken a start, which, we believe, is destined to make it one of the most extensive, well built, and best paying roads in the Union. The new board of directors are among the most enterprising men in this and the State of New York, and the Superintendent is an active and thoroughly experienced business man.

The election of officers of the Detroit and Pontiac railroad, took place on Monday, when Hon. H. N. Walker having declined a re-election, Nelson P. Stewart was chosen President.

David Smart, E. A. Brush, N. P. Stewart, H. N. Walker, Detroit; A. Williams, H. C. Thurber, Pontiac; Horace White, Hamilton White, Syracuse, N. Y.; J. B. Plum, Albany, N. Y.

H. N. WALKER, Sec'y and Treas'r.

Wm. Werden, Superintendent.—*Detroit Free Press.*

Notice to Contractors.

Atlantic and St. Lawrence Railroad.

THE Sixth and last Division of the Atlantic and St. Lawrence railroad will be placed under contract on the 10th day of November next, and proposals will be received until that date by the subscribers, at Sargeant's Tavern in the town of Northumberland, N. H.

Plans and profiles will be in readiness for examination at the Engineer's Office in Northumberland, on and after the 1st of November.

This Division extends from the Connecticut River in the town of Stratford, N. H., to the boundary line of Canada, a distance of about forty miles.

No Spirituous Liquors will be allowed on the work, and bids of contractors who have heretofore failed to pay their laborers, on this, or any other work, will not be considered.

Cash payments will be made monthly, reserving ten per cent. until the final completion of the contract.

JOHN M. WOOD & CO.

October 14th, 1851.

To Stone Masons.

THE NEW ALBANY AND SALEM RAILROAD Company have about 10,000 c. yards of Abutment Masonry to let at private contract, to be completed by the 1st of July, 1852.

To contractors who can produce testimonials of character for ability as STONE MASONS, fair, remunerating prices will be given.

Early applicants, by securing the work now offered, will gain advantages over competitors for the erection of an additional 15,000 yards, to be let out early next spring, in bridging the streams between Bedford and Michigan City, via Bloomington, Gosport, Crawfordsville and Lafayette, (the most productive and healthy region in Indiana,) by the knowledge they will have acquired of the resources of the country.

Application may be made in person, or by letter addressed to the undersigned, at New Albany, Indiana.

S. B. WILSON, Engineer.
Engineer's Office, New Albany, }
Sept. 29th, 1851. }

Railroad Iron.

THE undersigned are prepared to enter into contracts now at specific prices, to deliver Railroad Iron during the coming Winter and Spring, free on board at the shipping ports in Wales, or at ports in the United States.

CHOUTEAU, MERLE & SANFORD,
Sept. 30, 1851. No. 51 New st.

Railroad Iron.

THE undersigned offer for sale 1000 tons Railroad Iron, (about 56 lbs. to the yard,) now at Brooklyn.

CHOUTEAU, MERLE & SANFORD,
Oct. 1, 1851. 51 New st.

STATE OF NEW YORK.

SECRETARY'S OFFICE, ALBANY, August 27, 1851.—To the Sheriff of the County of New York. Sir:—Notice is hereby given that at the General Election, to be held in this State, on the Tuesday succeeding the first Monday of November next, the following officers are to be elected to wit:

A Judge of the Court of Appeals, in place of Samuel A. Foot.

A Secretary of the State, in place of Christopher Morgan.

A Comptroller, in place of Philo. C. Fuller.

A State Treasurer, in place of Alvah Hunt.

An Attorney General in the place of Levi S. Chatfield.

A State Engineer and Surveyor, in the place of Hezekiah C. S. ymour.

A Canal Commissioner, in the place of Charles Cook.

An Inspector of State Prisons, in the place of Alexander H. Wells.

All whose times of service will expire on the last day of December next.

Also a Justice of the Supreme Court, for the First Judicial District, in the place of James G. King, whose term of service will expire on the last day of December next.

Also a Senator for the Third, Fourth, Fifth and Sixth Senate Districts, in the place of Richard S. Williams, Clarkson Croluis, James W. Beekman, and Edwin D. Morgan, whose term of service will expire on the last day of December next.

County officers to be also elected for said County. Sixteen Members of Assembly.

A Register, in place of Cornelius V. Anderson.

A Recorder, in the place of Frederick A. Tailmadge.

Two Judges of the Superior Court, in the place of Thomas J. Oakly and John L. Mason.

A Judge of the Court of Common Pleas, in the place of Daniel P. Ingraham.

A Surrogate, in the place of Alexander W. Bradford.

A Commissioner of Streets and Lamps, in the place of Jacob L. Dodge.

Two Governors of the Alms House, in the place of Simeon Draper and Francis R. Tillon.

All whose term of service will expire on the last day of December next.

Also, there is to be elected a Justice for each of the six Judicial Districts, into which the city of New York is districted, pursuant to Chap. 614, Laws of 1851.

Yours respectfully,

CHRISTOPHER MORGAN.

Secretary of the State.

SHERIFF'S OFFICE, AUGUST 28, 1851.—I hereby certify that the above is a correct copy of the notice of the general election, to be held on the Tuesday succeeding the first Monday of November next, received this day from the Hon. Christopher Morgan, Secretary of the State.

THOMAS CARNLEY,

Sheriff of the City and County of New York.

N.B.—All the public newspapers within this county will please publish this notice once in each week until the election, and send in their bills for advertising the same as soon as the election is over so that they may be laid before the Board of Supervisors, and passed for payment.

RAILROAD SPRINGS.

Fuller's India-rubber Springs.

THESE are now made in our own Factory, of the best materials. Each spring is guaranteed to perform the required work. Purchasers guaranteed against adverse claims.

Car Builders will save great expense by calling at the office of the Company.

23 Courtlandt St., New York.

To Railroad Companies.

THE undersigned has discovered and patented an imperishable, cheap, and sufficiently elastic substance, to be introduced between the sill and rail, so that the stone sill can be used in place of the wooden sill: entirely overcoming that rigidity where the rail is laid directly on stone. Address

J. B. GRAY, Philadelphia.

July 10, 1851.

4m

Bridges & Brother, DEALERS IN RAILROAD AND CAR FINDINGS, 64 Courtlandt street, New York.

Having established a general Depot for the sale of articles used in the construction of Railroads, Locomotive Engines and Railroad Cars, we would invite your attention to our establishment. We have already in store a good assortment of CAR FINDINGS and other articles used in the trade, and feel justified in saying, that should you desire anything in our line, we can supply on terms perfectly satisfactory, and in the event of your desiring to order, you may feel assured that your terms will be as good as though you were here to make your own purchases.

Among our goods may be found Railroad Car Wheels, Axles, Jaws and Boxes, Nuts and Washers, Bolts, Brass Seat Hooks and Rivets, Window and Blind Springs, Lifters and Catchers, Door Locks, Knobs and Butts, Ventilators and Rings, Car Lamps, Coach and Wood Screws, Jack and Bed Screws and Babbitt's Metal; also Plushes, Damask, Enameled Head Linings, Cotton Duck for Top Covering in width sufficient without seams, Curled Hair and all other articles appertaining to cars.

Also a new and valuable CAR DOOR LOCK, well adapted to the Sliding Door. This is decidedly the best yet introduced.

LOCOMOTIVE ENGINE LANTERNS, the best article made in the country. Whistles, Gauge and Oil Cocks, Hemp Packing, American, Russian and Italian. We are also agents for Lightner's Patent Journal Box for Car Axles, that invaluable invention, for the economical use and preservation of Car Journals.

Coach VARNISH and Japan of the best quality. We would also offer our services for the purchase as well as for the sale of goods on commission.—Both members of our firm have had the experience of many years in the manufacture of Railroad Cars, and our Senior was a member of the well known house of DAVENPORT & BRIDGES, Car Manufacturers, Cambridgeport, Mass. With our knowledge of matters pertaining to Railroads, we feel quite confident in giving satisfaction to both buyer and seller, and hope that through assiduity and attention to any business entrusted to our care we shall merit a continuance of confidence and patronage.

BRIDGES & BROTHER.

July 22, 1851.

Lightner's Patent Axle Boxes.

THE Undersigned are Agents for, and offer for sale, *Lightner's Patent Axle Boxes*, for Railroad Cars and Tenders, which have, by thorough experience, been demonstrated to be one of the most valuable improvements ever introduced in Locomotion. The saving effected in oil alone, will in a few months pay the first cost of these boxes, independent of other advantages. They are now in use upon the following, among other roads, viz:

Boston and Worcester, Boston and Providence, Boston and Fitchburg, Nashua and Lowell, Providence and Worcester, Northern, N.H., Cheshire, Manchester and Lawrence, Concord, N.H., Concord and Claremont, Ogdensburg, (Northern, N.Y.) Stonington, New London Willimantic and Palmer, New Jersey Central, New Hampshire Central, Worcester and Nashua, Fitchburg and Worcester, Connecticut and Passumpsic, Lowell and Lawrence, Salem and Lowell, Wilton Branch, Newburyport.

Below will be found the certificates of a number of gentlemen, whose opinions will be good authority in every part of the country.

Office Boston and Prov. R. R., }
Boston, Dec. 28, 1849. }

MR. JOHN LIGHTNER,

Sir,—It affords me pleasure to say, that after two years' trial of your boxes, I am fully and entirely satisfied of their superiority over any other pattern we have used. This superiority consists in economy of oil and freedom from "heating." I have tried every pattern of box in use, of any note, and do not hesitate to say, that you have devised one which in every respect combines greater advantages than any other within my knowledge; these advantages are so manifest, that I am fitting up all

our cars with your boxes, as fast as practicable.

Annexed, is a statement of an experiment with your boxes, the result of which may be of use to your interests.

Ten passenger cars, running 72 wheels, fitted up with Lightner's boxes used $41\frac{1}{2}$ pints of Patent Oil, at 50 cts. per gallon, ran 43,099 miles, equal to 5-18 pints per wheel for 43,099 miles. Speed, 30 to 40 miles per hour.

Very respectfully yours,
W. RAYMOND LEE, Supt.

I have examined the above statement of Mr. Lee, and fully concur with him in his opinion of the superiority of Lightner's box.

GEORGE S. GRIGGS,
Supt. Machine Shop B. & P. R. R.

Boston, July 26, 1849.

This is to certify that J. Lightner's axle boxes for railroad cars and locomotive tenders, have been in use on the Boston and Worcester railroad one year, and I unhesitatingly pronounce it, in my opinion, the best and most economical one in use, requiring less oil, of easy application, not susceptible of derangement, as in most kinds in use. When requiring repairs or renewal, the same may be done in one-fourth of the time usually occupied for that purpose. The box requires oiling not oftener than once a month—is kept quite free from dust, and consequently wears much longer than those generally in use.

D. N. PICKERING,
Supt. Motive Power, B. & W. R. R.

Office of Boston Locomotive Works, }
December 12th, 1849. }

The Boston Locomotive Company have been using J. Lightner's patent axle boxes under the tenders of their engines for several months, and find them more highly spoken of by the railroad companies that have used them in regard to economy in the use of oil, their durability and their ease of adjustment, than any other boxes which they have used. We therefore do not hesitate to recommend them to all railroad companies.

DANIEL F. CHILD,
Treas. Boston Locomotive Works.

Taunton Locomotive Works, }
Taunton, July 7, 1849. }

MR. H. F. ALEXANDER,

Dear Sir,—Your favor of yesterday came to hand in which you ask what success we have met with, in using Mr. Lightner's patent box for cars, engines, &c.

We have put it in use on the Boston and Providence railroad, New Bedford and Taunton Branch railroad, Central railroad, N. J., Norfolk County, Rutland and Burlington, and as yet we have not had one complaint from them; and from what we have used of it, and witnessed, we do not hesitate to say that it is superior to anything in use for that purpose. It is simple in its construction, and easy of access, and the reservoir is held close to the shaft, and the oil and journal is perfectly secure from dust; they will run from four to six weeks without replenishing the oil. The brass in the box is changed very much easier than by any other plan that we have seen.

Very resp. yours,
W. W. FAIRBANKS, Agent.

Office Providence & Worcester R. R. Co., }
Providence, Dec. 17th, 1850. }

H. F. ALEXANDER, Esq.,

Sir,—The "Lightner patent boxes" for cars and locomotives have been in use under a portion of the passenger cars and engines of this company for upwards of two years, and have given very great satisfaction.

Though combining many excellent qualities, their great superiority consists in the economy of oil.

The result of experiments upon this road shows the consumption of oil by the use of this box, to be not more than one sixth part the quantity consumed by the use of the common box.

With the common box, eight passenger cars, 64 wheels, running 90 miles per day, consumed in 12 months 520 gallons of oil, being an average of 8½ gallon per wheel per annum.

With the Lightner box the same cars running the same number of miles per day, during the same space of time consumed 73½ gallons of oil, being an average of 1½ gallon per wheel per annum.

So manifest are its advantages over any other box used by this company, it is intended to place it under all our cars as soon as practicable.

Besides the saving of oil, as they afford complete security from dust, we think them more durable than any other box in use.

Another advantage resulting from the use of this box is, cars run more easier than with the common box. The saving in fuel which it would effect, would of itself, we think be a sufficient inducement to use this box in preference to any other known to us.

Very respectfully,
ISAAC H. SOUTHWICK, Supt.
JOHN B. WINSLOW,
Supt. Machine Shop, P. & W. R. R.

Cambridgeport, April 5th, 1851.

H. F. ALEXANDER, Esq.

Sir,—This may certify that I have been engaged in the manufacture of railway cars since 1834, and have built for the different railroad companies cars of all descriptions to the amount of three millions of dollars, and have used on the above cars all kinds of journal boxes, and find that none give better satisfaction than the "Lightner patent box," both on account of the saving of oil and the arrangement for taking out and re-placing the composition by means of the sliding key, and other conveniences which no other box possesses.

Yours respectfully,
CHARLES DAVENPORT.

Worcester, March 17th, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—This is to certify that I have been for some years past engaged in building cars, and that I have tried most, if not all of the patent boxes, and have found Lightner's patent superior to all others as far as the saving of oil is concerned, also the ease with which they are fitted and exchanged in case they get out of order.

For the last three years, I have put them under all of the cars I have built, and in every instance they have given the most entire satisfaction.

Yours truly,
OSGOOD BRADLEY.

Office Union Works, So. Boston, }
May 23d, 1851. }

This certifies that I have applied Mr. J. Lightner's patent axle boxes to my locomotives and tenders for the past two years. I consider them superior to all others,—economical in their use, and possessing many important advantages not found in any other boxes.

SETH WILMARTH.

Office 15, R. R. Exchange, Boston, }
June 1, 1851. }

This is to certify, that we have known the success of Lightner's patent journal boxes upon various roads in New England the past three years, and have been led to examine their peculiar construction.—We are well satisfied of their merits, and have adopted them upon our small gravel cars, and take pleasure, as we ever have done, in recommending their use upon all roads where we are employed in the construction.

GILMORE & CARPENTER,
Contractors.

Amoskeag Manufacturing Co. Machine Shop, }
Manchester, May 31, 1851. }

H. F. ALEXANDER, Esq.

Dear Sir,—We are using the Lightner box on all the engines and tenders we build, and we are satisfied that it is the best box in use, and recommend the same to all those who purchase engines at our works.

Yours respectfully,
O. W. BAYLEY, Agt.

This is to certify that the Fitchburg railroad company having become satisfied of the superiority of J. Lightner's patent Axle Boxes for Railway Cars and Locomotive Tenders adopted the same

and are bringing them into general use upon their road.

One year's experience with the above improvement, has fully convinced me that there has never been anything offered to the public for that purpose which possess such intrinsic value; in fact, this is an improvement which seems to overcome all the difficulties found in all the various kinds now in use. It possesses very many advantages over all others: Some of which are [first] the first cost is much less than that of most boxes in use. [Secondly] 75 per cent is saved in oil; one gill applied to each Journal once a month, or one quart to an eight wheel car, is all these boxes require per month [Thirdly] no dust can gain access to the Journal, which is constantly lubricated with clean oil; hence the saving in repairs of Journals and composition bearings, is a matter of importance. [Fourthly] its construction is truly simple—not complicated, having nothing liable to become loose by constant and severe service. [Fifthly] for convenience there is nothing which approaches this improvement.—The composition bearings may be removed from the Journals of an eight wheel car, by one man, and returned, or duplicates, in twenty minutes, while under the car: the same would require two men, at least half a day with other boxes in use.—The trucks and wheels using these boxes, are free from oil and dirt, usually seen upon all railroad cars, at great expense to the corporation.

NATH'L JACKSON.

Supt. Car Building and Repairs, F.R.R. Co.

Boston, March 9, 1849.

I hereby certify, that I have examined a box for Car Journals, invented by Mr. Lightner of Roxbury, Mass, and I have thought so well of it that I have adopted it on our railroad, I have known of its success on other roads.

S. M. FELTON,
Supt. F. R. R.

Office of the Central R. R., N. J., }
Elizabethtown, May 1849. }

H. F. ALEXANDER, Esq.,

Dear Sir:—Your favor, [wishing to be informed how we liked Lightner's patent axle boxes for R.R. Journals,] has been duly received; in answer we would say, we have used the boxes on Locomotive tenders one year, more or less, and on our cars some six months. I consider them the best boxes in every respect, I have ever used, or even seen used on any other roads—for safety, durability and the economy pertaining to all the details connected with the boxes and Journals of R. R. Car wheels; and we shall adopt them upon this road.

Yours Respectfully,

JOHN O. STEARNS,
Supt. Central Railroad Co., N. J.

Manchester, N. H., Nov. }
1st, 1850. }

H. F. Alexander, Sir,

I have used "Lightner's Boxes" under all the Cars of the Manchester and Lawrence railroad, and feel no hesitation in saying that I think them to be the best boxes now in use.

Yours, &c.,

THEODORE ATKINSON, Agent.

Cheshire R. R. Office, Keene, }
March 5th, 1851. }

Mr. H. F. Alexander,

Sir,—Lightner's Patent Boxes have been used on the Cheshire R. R. about a year, and have given the highest degree of satisfaction.

All the Passenger Cars now in use, and a considerable number of Merchandise Cars are furnished with them, and they will take the place of the Common Boxes on all the cars as fast as circumstances will permit.

Very Resp't.

L. TILTON,
Supt. Cheshire R. R.

Boston and Worcester Railroad, }
Boston, April 1st, 1851. }

H. F. Alexander, Esq.,

Dear Sir,—Lightner's Patent oil saving box for railroad cars, has been adopted by this corporation; we are taking out the common and substituting the

Lightner's at the rate of fifty boxes per month; it will soon take the place of all others, as it is decidedly preferable to any heretofore used by this corporation.

G. TWITCHELL, Supt.

Statement of amount of oil used on 32 8-wheel freight cars, on the Boston and Providence Railroad (with Lightner's Boxes) from March 10, 1849, to February 27, 1851, and upon 12 8-wheeled passenger cars from September 8, 1849, to February 27, 1851.

FREIGHT CARS.

Amount Oil.	No. months.	Amount Oil.	No. months.
1.—21 pts.	10	17.—23½ pts.	14
2.—19 " "	6	18.—23 " "	11
3.—25 " "	13	19.—36 " "	21
4.—18 " "	7	20.—22 " "	10
5.—22 " "	12	21.—38½ " "	24
6.—24 " "	13	22.—29 " "	23
7.—20 " "	11	23.—35½ " "	23
8.—21 " "	11	24.—37½ " "	23
9.—23½ " "	10	25.—51 " "	23
10.—21 " "	9	26.—31½ " "	24
11.—20 " "	9	27.—28½ " "	23
12.—21½ " "	11	28.—36 " "	23
13.—19 " "	8	29.—50½ " "	24
14.—25½ " "	17	30.—50 " "	23
15.—20½ " "	10	31.—41 " "	23
16.—31 " "	18	32.—39½ " "	23

Total, 925½ pts. 510

PASSENGER CARS.

1.—19½ pts.	18	7.—30 pts.	18
2.—25½ " "	18	8.—25½ " "	18
3.—33½ " "	16	9.—29 " "	18
4.—19 " "	15	10.—46½ " "	17
5.—15 " "	15	11.—9 " "	9
6.—22 " "	18	12.—65½ " "	17

Total, 340 pts. 197

Averaging 1 4-5 pints of oil for freight, and 1 7-10 for passenger cars per month only!

All orders and enquiries promptly attended to.

BRIDGES & BROTHER,

No. 64 Courtlandt st., New York.

July 25, 1851.

Trautwine on R. R. Curves.

By JOHN C. TRAUTWINE, Civil Engineer,
Philadelphia, Pa.

JUST published, accompanied by a Table of Natural Sines and Tangents to single minutes, by means of which all the necessary calculations may be performed in the field.

This little volume is intended as a field-book for assistants; and will be found extremely useful, as it contains full instructions, (with wood cuts) for laying out, and adjusting curves; with Tables of Angles, Ordinates, etc., for Curves varying from 13 miles, down to 146 feet Radius.

A portable Table of Natural Sines and Tangents to minutes, has for a long time been a desideratum among Engineers, independently of its use in laying out curves.

The volume is neatly got up in duodecimo; and handsomely bound in pocket-book form.

Sold by Wm. Hamilton, Actuary of the Franklin Institute, Philadelphia. Price \$1.

Also in press, and will be issued in a few weeks, "Trautwine's Method of Calculating Excavation and Embankment."

By this method, which is entirely new, (being now made known for the first time) the cubic contents are ascertained with great ease, and rapidly, by means of diagrams, and tables of level cuttings. Thin octavo; neatly half bound, \$1. For sale by Wm. Hamilton.

June 28, 1851.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by POWERS & WEIGHTMAN, manufacturing Chemists, Philadelphia.

Jan. 20, 1849.

To Chief Engineers, Directors of Railroads, Canals, etc.

A Civil Engineer and Surveyor, who has been professionally engaged under the British Government, East India Company, etc., is desirous of obtaining employment as an Assistant. No objection to the South or West. Address for one month to C. E. & S., American Railroad Journal office. August 16, 1851.

To Engineers.

A NEW WORK on the Marine Boilers of the United States, prepared from authentic drawings, and illustrated by 70 engravings, among which are those of the fastest and best steamers in the country, has just been published by B. H. Bartol, Engineer, and is for sale at the store of D. APPLETON & CO., Broadway.

September 1, 1851.

Pneumatic process for making Foundations for Bridges, Piers, etc.

THE Attention of Engineers, Contractors, and Bridge Builders, etc., is directed to this method of forming secure foundations. Hollow cylindrical piles from 8 inches to 10 feet in diameter may be sunk through sand, mud, clay, etc., to any required depth, and filled with concrete or masonry.

The efficacy and economy of the process has been demonstrated in the construction of numerous permanent works, at a much less cost than the use of any other method. (See evidence in Parliamentary enquiry, Railroad Journal, April 19, 1851.)

Contracts made, or licenses granted for the use of the invention in any part of the United States, by CHARLES PONTEZ,
34 Liberty street, N. Y.

LOWMOOR IRON.

THE LOWMOOR IRON COMPANY having appointed Wm. BAILEY LANG their sole agent in America and Canada, he is now prepared to receive and execute all orders for Railway Tire Bars, bent, welded, and blocked Railway Tires, Axles, Piston Rods, and Boiler Plates. Also, plain, angle, rivet and every other description of Lowmoor Iron.

All communications respecting the above are requested to be sent to Wm. Bailey Lang, at his Steel Warehouse, No. 9 Liberty Square, Boston, or to the Lowmoor Iron Works, Bradford, Yorkshire, England.
30th Sept., 1851.

RAILROAD SPRINGS.

Fuller's Patent India-rubber Springs.

PRICE reduced to 50 cents per pound. The owners of this Patent now manufacture the Springs in their own Factory, and guarantee that each spring shall perform its required duty.

Purchasers guaranteed against adverse claims. They may have full confidence in the working qualities of the springs.

The suits brought against Ray & Co., will soon be brought to issue, and we await the result with satisfaction, having full confidence in the pure administration of the Laws.

The long advertisements put forth by Ray & Co. about prior invention of the spring are worthless; he has not proved prior invention, and cannot sustain his patent in a Court of Law.

For the owners of Fuller's Patent,
G. M. KNEVITT,
23 Courtlandt st., New York.

October 7, 1851.

Railroad Iron.

THE undersigned, Agents for British Manufacturers, continue to sell Railroad Iron of the best quality, and of any weight or pattern required; deliverable at any part of the United States or Canada.

They have now on hand, ready for delivery at New York:

2,000 tons of an approved pattern, weighing about 60 lbs. to the yard.

WM. F. WELD & CO.,
42 Central Wharf, Boston,

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SUCCESSOR TO E. L. CAREY, PHILADELPHIA.

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Now being published in Twelve Parts, price 25 cents each, the **PRACTICAL MODEL CALCULATOR**, for the Engineer, Machinist, Manufacturer of Engine work, Naval Architect, Miner and Millwright.—By Oliver Byrne, Compiler and Editor of the Dictionary of Machines, Mechanics, Engine Work and Engineering, and Author of various Mathematical and Mechanical works—illustrated by numerous Engravings; forming, when completed, one large volume, octavo, of nearly 600 pages.

It will contain such calculations as are met with and required in the Mechanical Arts, and establish models or standards to guide practical men. The tables that are introduced, many of which are new, will greatly economise labor, and render the everyday calculations of the *practical man* comprehensive and easy. From every single calculation given in this work other calculations are readily modeled, so that each may be considered the head of a numerous family of practical results.

The examples selected will be found appropriate, and in all cases taken from the actual practice of the present time. Every rule has been tested by the unerring results of mathematical research, and confirmed by experiment, when such was necessary.

The Practical Model Calculator, will be found to fill a vacancy in the library of the practical working man long considered a requirement. It will be found to excel all other works of a similar nature, from the great extent of its range, the exemplary nature of its well selected examples, and from the easy, simple and systematic manner in which the model calculations are established.

Parts 1, 2 and 3 now ready.

American Miller and Millwright's Assistant, By W. C. Hughes. 12mo., illustrated...	\$1 00
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Steam for the Million. 8vo., paper.....	37

THE Fourth Annual Exhibition of AMERICAN MANUFACTURES, by the MARYLAND INSTITUTE for the Promotion of the Mechanic Arts, will be opened in Baltimore on the 20th October, 1851.

The Exhibition will be held in the **SPLENDID NEW HALL** of the Institute, (fronting on Baltimore street) now being rapidly completed. Their edifice is centrally situated, chaste in its architecture, solid in its construction, and is by far the largest and most complete building in the United States, devoted to the Mechanic Arts. It may be added that this building is 355 feet long by 60 in breadth, with an average height of 68 feet, containing some twelve apartments, the largest of which is 255 feet by 60, and that the cost will be over \$70,000.

To this Exhibition, the Managers ask the attention of all engaged in industrial pursuits throughout the country, and cordially invite them to contribute specimens of their best productions for public inspection, and to compete for the prizes offered by the Institute. These prizes consist of **GOLD and SILVER MEDALS, DIPLOMAS, etc.**, which were last year distributed as follows:—*Gold Medals*, 16; *Silver ditto*, 90; *Diplomas*, 60; besides 85 articles of Jewelry, etc., to ladies. *Fair play will be scrupulously observed towards all*, and every facility of Steam power, shafting, fixture, labor, &c., &c., will be amply provided *free of expense*. The machinery will be under a special superintendent, and a fine display of it is looked for. The last exhibition of the Institute was visited by more than 40,000 persons, and with their vastly improved accommodations and alterations, this number will be doubled at the coming display, embracing many Virginians, Pennsylvanians, and other strangers from the South and West.

Joshua Vansant, President.

Ed. Needles, } Vice Presidents.

F. A. Fisher, }

Samuel Sands, Rec. Sec'y.

Wm. Prescott Smith, Cor. Sec.

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(The last nine in *Italics* are the Committee on Exhibition.)

The Hall will be opened for the reception of goods on **MONDAY, 13th October**; on the next Monday, 20th, at 7 P. M., the Exhibition will be formally opened to the public, and will positively close on Wednesday, 19th November. Articles for competition must be in the Hall by **Thursday night, Oct. 16, unless delayed in shipment after starting in ample time.**

Those who intend depositing, will give the Committee or the Agent, notice as early as possible, stating the nature of the goods, and probable amount of room required, to exhibit them to advantage.

Circulars, containing a view of the new Hall and the full regulations of the Committee, with special information, if required, may be had promptly, by addressing the undersigned, or the Institute's Agent, J. S. Selby, Baltimore, *post-paid*.

ADAM DENMEAD,
Chairman Com. on Exhibition for 1851.

SUPERIOR BLACK WRITING & COPYING INK.

Jones' Empire Ink.

87 Nassau st., Sun Building, New York city.

Net prices to the trade—

Quarts, per dozen,	\$1 50	6 oz. per dozen,	\$0 50
Pints, " "	1 00	4 " " "	0 37 1/2
3 ounces, " "	0 62 1/2	2 " " "	0 25

On draught per Gallon, 20 cents.

This is the best Ink manufactured. It flows freely, is a good copying ink, and will not mould, corrode, precipitate or decay. Orders for export, or home consumption, carefully and promptly attended to by

21st

THEODORE LENT.

To Railroad Companies, etc.



The undersigned has at last succeeded in constructing and securing by letters patent, a **Spring Pad-lock** which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

I also invite attention to an improved **PATENT SPRING LOCK, for SLIDING Doors to Freight and Baggage Cars**, now in use upon the Pennsylvania Central, Greenville and Columbia, S. C., Reading, Pa., and other Railroads.

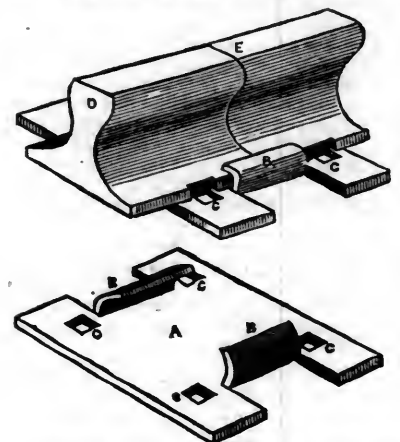
Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH,

46 South 8th St. Philadelphia.

May 9, 1851.

The American Railroad Chair Manufacturing Co.



ARE prepared to make **WROUGHT IRON RAIL ROAD CHAIRS**, of various sizes, at short notice.

By use of the **WROUGHT IRON CHAIR**, the necessity of the wedge is entirely done away—the lips of the chair being set, by means of a sledge or hammer, close and firmly to the flange of the rail.

The less thickness of metal necessary in the Wrought Iron Chair gives much greater power and force to the spikes when driven—and consequently a much less liability to the spreading of the rails by reason of the spikes drawing or becoming bent.

The less weight necessary in the Wrought Iron Chair, will enable us to furnish them at a cost much below that of **CAST IRON CHAIRS**.

DESCRIPTION OF THE ABOVE CUTS.

Figure 1 is a perspective view of the rail secured in the chair, and fig. 2 is a perspective view of the chair itself. D, E, are sections of two rails placed together, and secured at the joint on the chair by the jaws B, B'. The chair is bolted down by spikes C, C'. In fig. 2, the chair is represented as made of a single block or plate A of wrought iron.

The chair is set in its proper place on the track, spiked down, and the ends of the two rails brought together within the jaws as represented in fig. 1.

For further information address,

N. C. TROWBRIDGE, Secretary,
Poughkeepsie, N. Y.

June 1, 1851.

Railroad Commission Agency.

THE Subscriber offers his services to Railroad Co's and Car Makers for the purchase of equipment and furniture of roads and depots and all articles and materials required in the construction of cars, with cash or approved credit. No effort will be spared to select the best articles at the lowest market price.

He is sole Agent for the manufacture of the **EN-AMELED CAR LININGS**, now in universal use. The best Artists are employed in designing new styles, and he will make to order pieces with appropriate designs for every part of the car, in all colors, or with silver grounds and bronzed or velvet figures.

He is also Agent for Page's Car Window Sash Fasteners, which is preferred by all who have used it to any other.

CHARLES STODDER,
75 Kilby st., Boston.

June 20, 1851.

3m.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 136 NASSAU ST., NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.
SECOND QUARTO SERIES, VOL. VII., No. 43! SATURDAY, OCTOBER 25, 1851 [WHOLE No. 810, VOL. XXIV.

ASSISTANT EDITORS,

J. T. HODGE, *For Mining and Metallurgy.*
GEN. CHAS. T. JAMES, *For Manufacture of Mechanic Arts.*

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTE & Co., 136 NASSAU ST.

Saturday, October 25, 1851.

Baltimore and Ohio Railroad.

We have received the 25th annual report of the directors of this company for the financial year ending September 30th, 1851. The earnings of the road for the past year have been \$1,349,222 75, being an increase of \$5,417 48 over the operations of last year. The total disbursements under the head of expenses have been \$695,919 20, showing the net earnings to have been \$653,303 55.

This result has enabled the board to declare a dividend in stock of 7 per cent., notwithstanding the large increase of \$531,209 added to the capital stock of the company by the dividend of last year. Upon the original capital of \$7,000,000, represented by the finished road to Cumberland, which alone has contributed to this result, without any aid from the capital more recently expended, the dividend earned would have been equal to 9½ per cent.

The report states that "the board have never indulged the belief that this large revenue would be maintained, during the extension of the road, and had the present receipts exhibited a deficiency greatly below the earnings of former years, such a result might well have been anticipated, from the opening of the New York and Erie road, and the large reduction which, owing to the low rates adopted on other works, has already been found indispensable in the tariff upon both passengers and tonnage, which, while it has been attended so far with no decided increase in the business of the road, has greatly diminished the receipts of the year."—The completion of the road to Tygart's Valley Bridge and Fairmont, which will take place in March or May next, will, it is believed, restore a portion of the through travel and freight which has been drawn from the Baltimore and Ohio road by the New York lines, the Erie road in particular.

The earnings of the Washington Branch for the year have been \$309,535 75, expenses, \$146,681 16—giving \$162,854 59 as the net earnings. Upon this branch the board have declared a dividend of 4 per cent. for the half year ending 30th September last. The earnings of this branch have been somewhat less than the past year, owing to the short session of Congress.

The following is a statement of the financial condition of the company:

The Baltimore and Ohio Railroad Company.

Dr.	
Cost of road to Harper's Ferry.....	\$4,000,000 00
Cost of road between Harper's Ferry and Cumberland.....	3,623,606 28
Reconstruction of road east of Harper's Ferry.....	672,034 02
Improvements in roadbed east of Harper's Ferry.....	295,683 72
Extension of road to Locust Point, including real estate.....	180,295 63
Cost of road west of Cumberland....	\$8,771,619 65
Stock in the Washington Branch....	4,259,971 21
Sterling five per cent. bonds of the State of Maryland—balance of the account.....	1,032,600 00
Sinking fund for the redemption of the million loan.....	334,356 78
Cash on special deposit at interest...	225,429 80
Amount due on Maryland sterling 5 per cents.....	60,750 00
Miscellaneous.....	861,466 61
	31,868 64

\$15,578,062 69

Cr.	
Stock.....	\$8,117,100 00
Loan at six per cent.....	1,000,000 00
Loan No. 2, at six per cent.....	753,159 63
Loan No. 3.....	566,666 67
Loan No. 4.....	321,507 14
State of Maryland 5 per cent. sterling bonds.....	3,200,000 00
Revenue.....	\$2,217,012 00
Less the expense of working the road and keeping the same in repair.....	\$695,919 20
And also the amt paid for improvements at the depots, interest, etc.	125,816 33
Making together.....	821,735 53
Miscellaneous.....	1,395,276 47
	204,332 73

\$15,578,062 69

Statement of the revenue and expenses of the Baltimore and Ohio railroad company, on account of the Main Stem of the road, for the year ending the 30th September, 1851.

The company has earned for the transportation of passengers, mails and merchandise, during the year ending 30th Sept., 1851.....\$1,349,222 75

And the expenses of working the road and keeping it in repair during the same period, have been as follows, viz:

Expenses of transport'n.....	\$273,066 80
Repairs of railway.....	175,867 82
" locomotives.....	74,250 75
" pass. cars.....	18,898 67
" burden cars.....	54,624 94
" bridges.....	15,863 20
" depots.....	18,751 60
Miscellaneous.....	64,595 42
	695,919 20

And showing the net earnings to be. \$653,303 55

The report states that the Central line through Ohio is now making rapid progress. That road, when finished, will place the city of Baltimore in direct communication with Cincinnati, by a continuous line of railway, requiring in the transit between the two points about 26 hours, assuming a rate of speed not exceeding 25 miles an hour.

The time at present occupied in the passage from New York to Cincinnati, over the Cleveland and Columbus, and New York and Erie roads, cannot average less than 40 or 50 hours. This must be accomplished at a rate of speed ranging from 20

to 40 miles an hour. The fare between these two points, by this great northern line, not exceeding two cents per mile for each passenger, has been established at \$16 50.

The advantages which the Baltimore and Ohio railroad will possess over the above route, when the former is brought into connection with the Ohio river, can easily be estimated. With a rate of speed in the transit of the passenger trains, not exceeding 25 miles an hour, including stoppages, the whole distance between Baltimore and Wheeling will be accomplished in 16 hours, and from the latter point to Cincinnati, by the Central Ohio road, in 10 hours, making an aggregate of 26 hours by a continuous line of railroad—when completed. But if the connection with Cincinnati is made by the Ohio river, which must be the case, until the completion of the Central Ohio road, and an allowance of 34 hours is made between Wheeling and that point, we have an aggregate of 50 hours, about the same amount of time that is consumed in the passage over the New York and Erie railroad.

The cost of a through ticket from Baltimore to Cincinnati, allowing \$8 for the Baltimore and Ohio railroad, at the rate of more than two cents per mile, and \$5 by the Central Ohio road, at the same rate of charge, would be \$13 against \$16 50 on the Erie road to New York—the latter road charging less than two cents a mile, and the former a fraction more than two, as stated above.

If the cost of a through ticket is estimated by the river from Wheeling to Cincinnati, a much greater difference will be perceptible in favor of the Baltimore route. Supposing the charge by boat from Wheeling to Cincinnati, in connection with a through ticket by the Baltimore and Ohio railroad, not to exceed \$3 50 for a single passenger, we have a total charge of \$11 50, or \$5 less than the charge upon the Columbus and Erie roads, to say nothing of the expense of living, equal perhaps to \$2, which would be saved by the river line.

In the above statement, we have supposed the traveller looking to the nearest point of contact with the seaboard. In case he should desire to approach New York, via the Baltimore and Ohio railroad, in order to command the range of the seat of government, and the three most populous of the eastern cities, and the through ticket is extended to New York at an increase not exceeding \$4, the difference would still be in favor of the Baltimore route.

As much of the travel from west to east, during the session of Congress, will be directed towards the seat of government, the cheapness of the Baltimore route will offer greater inducements to passengers from Cincinnati and points west of the Ohio river, to purchase a through ticket to Washington, than can be offered by either the New York and Erie or the Pennsylvania Central roads. By the Erie road, the cost of a through ticket from Cincinnati to Baltimore could not be less than \$21 50, and from thence to Washington the full charge of \$1 80, making a total of \$23 30, while a through ticket over the Baltimore and Ohio road could be obtained at a cost not exceeding \$13, making a difference of \$10 over the Erie line at their present established rates.

But the important feature in the operations of this road, will be the cheapness of its tonnage rates, due to the presence of coal at almost every station upon the line. The cost of fuel will be the labor of transferring it from the mines to the tender, and

it is believed that no variety of coal yet discovered in the country can be found so well adapted to the uses of railway locomotion, as that which would be accessible to the company in the great coal region west of Cumberland.

In connection with the already reduced rates on the Ohio river, this road may be expected to offer inducements not only to Baltimore, but to Philadelphia, New York and Boston, which cannot fail to attract a large proportion of merchandise destined for remote situations in the west, which has heretofore sought other and more expensive channels of communication.

The through charge upon general tonnage by the New York and Erie road, between New York and Cincinnati, has been lately announced at an extreme limit of \$1 60 per hundred pounds. The highest rate between New York and Baltimore will not exceed 15 cents. If to this we add a charge of 50 cents, over the Baltimore and Ohio railroad, to Wheeling, and thence to Cincinnati, by river, 10 cents, we shall have a total of 75 cents between New York and Cincinnati, or more than 50 per cent below the reduced rates upon the Erie road, the charge on the Baltimore and Ohio railroad being more in proportion to length, and the profit greater, than on the Erie road, at the rate above indicated.

The transportation of coal over the road for the present year, compared with that of the past, shows an increase of 10,619 tons in favor of the one just ended, the aggregate for both being 163,500 tons.

The completion of the road to the "Piedmont Station," near Westernport, which took place in July last, has not yet brought an accession of coal from that region; but the board are informed, that preparations are now making by the George's Creek, and other companies, to open their mines, so as to commence operations at an early day.

The demand for coal has not yet taxed to the full extent the power at the disposal of the company, and it is the opinion of the board, that Cumberland coal must be brought into a fair competition with anthracite and other bituminous coals, now sold at so much lower rates in the eastern markets, before any increase can be expected to take place in the amount of consumption.

In connection with the cost of transportation, the board, aware of the importance of regulating freights between Baltimore and the eastern markets, sometime since, reduced the tolls upon the through transportation, from Cumberland to Baltimore, to two dollars per ton upon all coal received at private wharves. This reduction went into effect on the 15th of September last.

The value of the Cumberland coal depends upon upon the certainty and regularity of its supply; the facility of its transshipment from the car or boat to the vessel, and finally upon the cost of transportation between the points of shipment and consumption.

The city of Baltimore, as is well known, commands an advantage in her foreign and coasting trade, which gives her the control of freights at all seasons of the year, at comparatively moderate rates.

The advantage which she possesses over the district cities in this respect, may be estimated at 25 cents per ton, and it is doubted whether, with the prospect of freight one way, only a drawback always to be encountered by vessels seeking the Alexandria or district harbors, the command of a tonnage to any large extent, could be relied upon, even at an increase over the Baltimore rates, ow-

ing to the uncertain navigation of the Potomac river, and the delay to which vessels are invariably subjected.

We must also take into account the condition of the coal delivered on ship-board from the canal and railroad—the damage from exposure and disintegration being, in the opinion of some, 25 cents per ton in favor of the latter.

An effort is now being made to organize a company with a capital sufficient to transport through the Chesapeake and Delaware, and Raritan Canals, to New York, by means of propellers and barges, all the coal that is brought to the latter market. Should this enterprise be supported, the maximum charge between Locust Point and N. York would not exceed \$1 25 per ton, and with the aid of return freights, which might be confidently relied on, in connection with the through transportation on this road, when brought in contact with the Ohio river, the average freight per ton would not exceed one dollar.

The work of construction beyond Cumberland is progressing rapidly, and so far nothing has occurred to interfere with the promise heretofore made, that with an adequate supply of funds and labor, the whole line may be finished by the 1st of January, 1853.

Early in July last the first division of the road was opened to the Piedmont Station.

Since then, the second division, extending beyond "Oakland" to the Glades, a distance of twenty-five miles, has also been passed. The Cheat-River will be reached about the 1st December, and the Tygart's Valley Bridge and Fairmont, on the Monongahela river, between that period and the 1st of May.

The report states that the maximum grade of 116 feet is now being worked daily, with heavy trains, at rates varying from twelve to twenty miles an hour—both ascending and descending, with the utmost ease and regularity.

A great deal of interest has been excited upon the subject of the extension of the road west, and its connection with the public works of Ohio. We give entire such portion of the report as refers to this subject:—

At the last session of the General Assembly of Virginia a charter was passed granting the right of way to an independent company, to connect the town of Parkersburg on the Ohio river with the Baltimore and Ohio railroad, at or near the mouth of Three Forks Creek in the county of Taylor.—The charter provides that the North-Western railroad shall not be opened for trade or travel, until twelve months after the completion of the road to the city of Wheeling.

Since the passage of that law a company has been organized, and three corps of engineers are now diligently engaged in making surveys, prior to the commencement of active operations. It is the desire of the North-Western company, with the aid and co-operation of the city of Baltimore, to place this important line of road under contract, at the earliest practicable day, so as to insure its completion, within a period, to give the greatest possible benefit to those who may embark their capital in its construction.

The passage of this great charter could not have been more opportune than at this particular juncture, when so many and spirited efforts are being made to multiply and improve the means of communication between the Atlantic sea-board and the vast region lying west of the Ohio river. The right to connect the city of Baltimore by the most direct line, with the commercial centre of the great west, was long the desire of those to whom had been entrusted the direction of the policy of this company; and it was not until these hopes had failed after repeated applications to the Legislature of Virginia, that the board felt justified in adopting

their present location, with a terminus as far North as the city of Wheeling. It may be doubted, however, whether with the command of ample means at their disposal, it would not have been the dictate of sound wisdom, at all times, to have kept a steady eye upon the rivalry of more northern competitors, and to have assailed by an effort far more formidable than the board have been called upon to make in the adoption of Wheeling terminus, the paramount northern attraction, which for years past has been operating so disadvantageously to the commercial prospects of the city of Baltimore.—The board entertain the firm conviction, that the adoption of their northern terminus will be the means of adding largely to the importance and activity of their great work; and that a policy, resulting as is well known from necessity, will eventually find its strongest support, in the wisdom of its plans, and the benefits which it cannot fail to dispense.

It is a source of congratulation that, in the midst of the preparations now going forward to compete for the western trade and travel, the city of Baltimore has been placed in a position under the recent Legislature of Virginia, by the adoption of the North-Western charter and of the construction of the important line of road which it contemplates, to defy all competition, and to offer facilities greater than those of any other road, connecting the great west and the valley of the Mississippi with the Atlantic sea-board.

From Baltimore to a point where the North-Western road begins to separate from the main line, to the city of Wheeling, the distance is 281 miles, making about three-fourths of the main stem common to the two great arms which would be thus extended from "Three Forks," to join the connecting roads from the northern and southern sections of the State of Ohio. It happens advantageously for the stockholders in this road and the policy adopted by the company, that from the point of divergence before mentioned, to both Wheeling and Parkersburg, the intervening country may be expected to contribute largely in its local developments to the support and revenue of the road, without any reference to through business. At this point the lofty ridges of the Alleghenies have been crossed, and the wild and primitive region, situated between the mouth of the Savage and the Tygart's Valley rivers, has been succeeded by a country offering greater inducements to agricultural industry, and in every way calculated to make an adequate return for the labor employed in bringing it into successful cultivation.

But it would be useless for this board to shut their eyes upon a fact, which a single glance at the map must place beyond doubt or controversy, that sooner or later the North-Western road, connecting at Parkersburg with the great southern line of Ohio, and through that channel with Cincinnati and St. Louis, must command, in connection with the main stem of the Baltimore and Ohio railroad, *the through travel*, destined for any point upon the sea-board. The advantage of time and distance cannot be overcome; the city of Baltimore must not only offer facilities greater than those of any more northern point, in her temperate climate—her easy access to the ocean, and the advantage in proximity to the commercial centre of the west, of 88 miles in distance over Philadelphia by her shortest route, 305 over New York by the New York and Erie road, and 390 over Boston by the Albany and Buffalo road; but must always be a point in the most advantageous line of approach, to any of these cities; and no rivalry, it may be confidently assumed, which may spring up hereafter, can ever impair the relative superiority of the great straight line road, in convenience and cheapness of transportation, over every other competing enterprise.

The city of Baltimore has already evinced her appreciation of this most important charter, by an application to the Legislature for authority to subscribe to the capital stock of the company; and this board urge that this subscription on the part of the city, be met by a loan to the North-Western company of the bonds of this company, to whatever extent may be required in furtherance of this object, so soon as their own work shall have been completed to the Ohio river. With the combined aid of the City of Baltimore and this corporation, it is

not doubted that the results of this great improvement may be realized at an early day.

In disposing of this part of their subject, the board would refer briefly to the efforts which are now making to defeat the active prosecution of the North-Western road, by temptations, to divert one of the southern lines of Ohio from its original destination. The idea of a terminus of the Cincinnati and Belpre road at Marietta, with a view to a connection with Philadelphia, by means of the Hempfield road, should it be constructed, while the North-Western road has formed its junction with the Ohio river at Parkersburg, is one in which its own stockholders, and the city of Chillicothe are too deeply interested, to justify a belief that so grave a subject, involving it may be said the destiny of whole communities, will be finally disposed of without the maturest deliberation, and a reference to the most competent professional aids.—There are now two charters, connecting Cincinnati with the Ohio river, under one or the other of which, without harmony and concert, the most direct line may be expected to be drawn. Should the Cincinnati and Belpre company, with the countenance and co-operation of Chillicothe, decide to strike the Ohio river, at a point ten miles above the terminus of the North-Western road at Parkersburg, with a view to the local interests of Marietta, it will be for the city of Cincinnati and those who may understand the nature and availability of the shortest line between that city and the sea-board, to determine how long such a state of things shall be suffered to exist; and this board are already apprized, that plans are now in progress, prompted by the existing state of confusion, under direction of the Cincinnati and Hillsboro' company, with a view to foreign aid and co-operation, to direct the survey of a route from Hillsboro' to a connection with the North-Western road by a *direct line*, without reference to local interests, so as to ascertain by instrumental surveys, the saving of distance over the Cincinnati and Belpre line, as at present defined, with its terminus at Marietta.—This proposed line will diverge to the south of Chillicothe, holding out the strongest inducement to the more southern trade of Kentucky; and as it is confidently asserted by competent engineering authority, may be attended with a saving, between Cincinnati and Belpre of several miles of distance, in the aggregate length of the whole line between Hillsboro' and the Ohio river.

The Cincinnati and Hillsboro' company, the Board are informed, are authorized by their charter, to preserve a uniform gauge, in the construction of their track, with the Baltimore and Ohio and North Western roads, which in connexion with the Ohio and Mississippi road, adopting the same gauge from Cincinnati to St. Louis, would give an unbroken chain of uniform track from Baltimore to St. Louis, enabling the traveller to pass between these remote points, a distance of nine hundred miles, without a single transshipment.

The Board have felt the deepest regret that any misunderstanding should have separated the two companies, now engaged in a common effort to form an early connexion with a market on the sea-board. The attempt to construct parallel roads cannot otherwise than result in heavy losses to one or the other of these corporations; and capitalists may be expected to entertain with caution any appeal which may be made for assistance in a case so full of peril, and presenting so little encouragement while these difficulties remain unadjusted. It however needs no penetration to foresee, that that line must finally triumph, which proposes the shortest and most direct communication between Cincinnati and the terminus of the North-western road; and that the means cannot be long wanting to give direction to a policy, in which so many and important interests, both East and West, are involved.

So far as the friends of the North-western road are concerned, they have only to press forward without delay in the construction of their great work, and leave to those who have been entrusted with these important interests west of the Ohio river, the establishment of their own domestic policy.—The North-western road has nothing to apprehend from any result which may be likely to occur. The monopoly of the river trade and tra-

vel will more than tax the largest capacity of a single road; and it will be for the people of the west to determine, how far it would be wise or politic to forego, even for a twelvemonth, the benefits likely to result from a line of communication offering greater advantages, both as to distance and cheapness of transportation, than any project in this country.

English Railroads.

Working Expenses of the great Northern Railway.—The number of miles in operation is 236, and the number of miles run by the trains amounts to 1,571,381, and by the engines, 1,689,815, during the past six months. The consumption of coke per engine per mile is 30.9 pounds, costing 2.534 pence; the total working charges being stated at 46.96 per cent. on the gross earnings. The total expenditure give 1s. 6½d. per mile per train. Up to the 30th June last, £8,274,969 had been received, and £8,069,788, had been expended. This expenditure is made up by £436,223, preliminary charges before the passing of the act; £138,697, law and engineering charges; £1,596,974, land and compensation; £4,411,169, works and materials; £325,640, engines and tenders; £298,593, carrying stock; £591,170, interest on loans and capital; and £69,888, on East Lincoln line.

Maintenance of Way of Midland Railway.—The 483½ miles of this line cost, for maintenance, £124 per mile per annum.

Working Expenses of the Eastern Counties Railway.—The number of miles run by trains during the past half-year exceeds that of the corresponding period of last year by 63,598 miles. The total cost is £55,033, equal to 10.573d. per mile per train, being a reduction in the expenses of £13,581, equal to 3.316d. per mile per train. In the amount of £55,033 is included £3,013 for the use of steam power, for forming the passenger and goods trains, in consequence principally of the great inconvenience of the London stations, which would otherwise be done at a very reduced expense by manual labor. The total cost of the carriage and waggon department for the half-year is £16,748, equal to 3.217d. per mile per train, being an increase of £292, equal to 0.056d. per mile per train. In taking the cost at 10.573d. per mile for locomotive department, and 3.217d. per mile for carriage and waggon department, in comparison with other metropolitan railways they appear high; but by it a very decided improvement has been made in the condition of the whole of the rolling stock. The labor and materials in renewals and maintenance of the line has cost for the last half-year at the average rate of £45. 10s. 9d. per mile, viz., in the renewals £2,172, and in the repairs of stations, warehouses, workshops and other buildings, £7,130, making a total of £23,966. The one mile at Stratford, that is fish jointed, and has been tested and worked over more than two years, has been maintained at less than £30 per mile per annum, whilst the old road in the same district between Stratford and Bishop's Stratford has cost in labor, for the same period, £95. 5s. 6d. per mile. It is stated that, by the adoption of the system now in progress, the company may realize, in saving of labor alone, an annual sum of not less than £50 on every mile so completed.

Rolling Stock of London and North Western Railway.—The number of miles of railway worked by the company is 863½ and the average cost of working stated to be £2,430 per miles. The mileage worked on the 30th of June 1850, was 794½. On the 31st of December, 1850, 37½ miles in addition thereto were worked, viz.:—Buckinghamshire, 18½; Coventry and Nuneaton, 10; and East and West India Dock line, 9½ miles. On the 30th June, 1851, 31½ miles were added to the mileage, viz.:—Buckinghamshire, 2½; Rugby and Stamford, 13½; Rugby and Loughborough, 15 miles; making together at the latter date, 863½ miles worked by the company. The return of working stock shows that it consists of 563 engines, 562 tenders, 1 state carriage 555 first-class, mail, and composite carriages, 489 second-class, 345 third class, 24 travelling post-offices and tenders, 259 horse-boxes, 243 carriage-trucks, 208 guards' break and parcel-vans, 41 parcel-carts and trucks, 8,052 wagons 203 sheep-vans, 14 trucks, 1,155 crib-rails 5,150 sheets, 162 horses. The increase in the number of engines during the

half-year is 10, in the tenders 9, in the first-class, mails, and composite carriages 61, in the second-class carriages 69, in the third-class 3, in the wagons 667, and in the sheep-vans. 71.

Lancashire and Yorkshire.—The mileage worked by this company is 287½ miles. The increase in the receipts, as compared with the corresponding period of 1850, amounts to 17½ per cent., and in the working expenses to 4½ per cent. The average distance travelled by each passenger has been 11½ miles and the amount received is 1s. 1½d. per passenger. The merchandise has been conveyed an average distance of 31½ miles, and the amount received per ton has been 6s. 4d. Each ton of minerals has been conveyed an average distance of 12½ miles, and the amount received has been 1s. 2½d. A very considerable proportion of the regular summer traffic to both the east and west coasts, has been diverted by the Great Exhibition.

Paris Artesian Well.

A late writer on "Paris in 1851," in Blackwood, furnishes the following remarks on this well:—Near the *Hotel des Invalides* is the celebrated well which has given the name of all the modern experiments of boring to great depths for water. The name of *Artesian*, is said to be taken from the province of *Artois*, in which the practice has long been known. The want of water in Paris induced a M. Mulot to commence the work in 1834. The history of the process is instructive. For six years there was no prospect of success; yet M. Mulot gallantly persevered. All was inexorable chalk; the boring instrument had broken several times, and the difficulty thus occasioned may be imagined, from its requiring, a length of 1,300 feet, even in an early period of the operation. However, early in 1841, the chalk gave signs of change, and a greenish sand was drawn up. On the 26th of February, this was followed by a slight effusion of water, and before night the stream burst up to the mouth of the excavation, which was now 1,800 feet deep; yet the water rapidly rose to a height of 112 feet above the mouth of the well, by a pipe, which is now supported by scaffolding, giving about 600 gallons per minute. Even the memorable experiment confutes, so far as it goes, the geological notion of strata laid under each other in their proportion of gravity. The section of the boring shows chalk, sand, gravel, and shells, and this order sometimes reversed in the most casual manner, down to a depth five times the height of the cupola of the *Invalides*. The heat of the water was 83° Fahrenheit. In the theories with which the philosophers of the Continent have to feed their imaginations, is that of a central line, which is felt through all the strata, and which warms everything in proportion to its nearness to the centre. Thus it was proposed to dig an *Artesian* well of 3,000 feet, for the supply of hot water to the *Jardins des Plantes* and the neighboring hospitals. It was supposed that at this depth, the heat would range to upwards of 100° Fahrenheit; but nothing has been done—even the well of Grenoble has rather disappointed the public expectation; of late the supply has been less constant, and the boring is to be renewed to a depth of 2,000.

From the London Architect for September, 1851.

On Furnace Bars.

In the sitting of the 18th of July, M. Auguste Perdonnet in the chair, M. Polonceau gave an account of a paper of M. Arson, on a furnace bar of a new shape, made of two common bars melted together so as to form only one piece, by contact at their ends as well as in the middle. The hollow between the bars is one-third inch, the thickness of the bars themselves being one-half inch; but the hollow may be brought down to one quarter inch, for the same width of bar. He observed, that experience has shown the advantage of making the bars thin, and their intervals narrow, which allows the air to be spread more uniformly among the burning heap, and stops the small coal from falling through the bars. These bars have the evil of getting out of shape, but M. Arson's plan overcomes this. The only hindrance to the new plan of bar is in the moulding, but M. Arson, has been successful.

It was observed, that on the Northern railway they had given up cast iron bars for the fixed en-

gines in the workshops, because they get out of shape and become very rough. These have been replaced by wrought iron bars, costing about 2d. a pound, being double that of cast iron, but lasting twice as long, and when of no use, for bars, saleable as old iron.

One of the members supported this observation, but said the cost of the bar is 1½d. a pound. The maker is furnished with ends of rails reckoned at 1d. a pound; and he gives weight for weight of finished bars at 1d. per pound for workmanship. When he is supplied with old bars used up, he requires 125lbs. of old iron, for 100lbs. of new furnace bars which brings the price up to 2d. a pound. It is found worth while to work up the old iron in this way.

It was remarked, that coal burns wrought iron more than cast, but that it was not so with coke. A member recommended the employment of bars of which the ends are beveled on the upper edge, which prevents misshaping by unequal heating. These bars have been used with advantage in several works at Douay, being on a similar plan to locomotive bars.

Another member said he had tried the double bar of M. Arson. These bars were half an inch thick with half inch openings, and they were used in a furnace worked with coke. The combustion was better, but at the end of some time the bars were so misshapen by striking off the clinkers, that he was driven to change them and go back to the old bars.—*Proceedings of the Society of Civil Engineers, Paris.*

Western Transportation.

Baltimore and Ohio Railroad.—The charges on the Baltimore and Ohio railroad from this city to Cumberland are as follows, viz:—Hats, Boots, Bonnets and Medicines, 35 cts. per 100 lbs. Dry Goods, Groceries, Queensware, Tobacco, 25 cts. per 100 lbs. Coffee, Salt and Fish, 20 cts. per 100 pounds.

Freights to Pittsburg by the Susquehanna railroad and Pennsylvania canals, as follows, viz:—Dry Goods 90 cents. Bales 80 cents. Groceries, Paints and Dye Stuffs, 70 cents. Coffee 50 cents. Queensware, 70 cents. Clay and Soda Ash, 50 cts. Rosin and Tar, 50 cts. Leather, 80 cts. Mackerel, per bbl. \$1.25, and Herrings \$1.12½.

By O'Connor's Line, Dry Goods, &c. 80 cents; Hardware and Groceries, 7; Queensware, 60; Tin Plate, 50; Tar and Coffee, 47½; Fish, &c., 112 and 125 cts. per bbl.

Mobile and Ohio Railroad.

We give below the circular recently issued by this company, in reference to placing under contract, a large portion of the line of the road through the State of Mississippi.

TO ALL PERSONS INTERESTED IN THE CONSTRUCTION OF THE MOBILE AND OHIO RAILWAY.

It is well known that in 1849 this road was located 70 miles from Mobile to the Buckatunna river, 84 miles within the State of Mississippi.

During the present year a thorough re-survey of the whole of Eastern Mississippi, south of Tishamingo county, and careful re-estimates of the cost of constructing the road have been made; also, a very considerable amount of stock subscribed in Mississippi between Lauderdale and Chickasaw counties inclusive.

From all the facts thus furnished the Board of Directors, they have unanimously adopted the following described line as the permanent and final location of this part of the Mobile and Ohio railway, to wit:—From the Buckatunna river, where terminated that portion of the road previously located, the route passes up the Chickasawha river valley near Winchester, Quitman and Enterprise to the mouth of Sowashsee creek, up the valley of which, a north easterly course to and across the dividing ridge between the waters of Chickasawha and Bigby rivers. Thence it passes down the slope of Possum creek—one mile west of Lauderdale springs—crosses the Sucarnochee just below the mouth of Patrickfaw creek. Leaves Narketa bridge one mile to the West and thence pursuing a northerly and northwesterly course, passing ¼ a mile West of Macon, via Prairie Grove Church, Lodi Black Jack Mound, and Okalona, and termi-

nates for the present, at the North line of Chickasaw county, whence its extension through Pontotoc, Itawamba and Tishamingo counties will be published as soon as the surveys beyond are completed into Tennessee and the people North of Chickasaw and Monroe counties show by their subscriptions of stock and releases of right of way, that they are ready to do their part or what they reasonably can, in the work of construction, which is the local work of preparing the railway and timber for the iron rails.

The counties through which the road thus far located in Mississippi, and its position and length in them, respectively, are as follows:—

In Wayne county, centrally.....	34	miles.
In Clarke, through westerly half.....	28 3-5	"
In Lauderdale, centrally.....	34 2-3	"
In Kemper, easterly half.....	26 1-5	"
In Noxube, centrally.....	26 1-7	"
In Lowndes, western side.....	26 1-5	"
In Monroe, south western part.....	17 1-5	"
In Chickasaw, north eastern.....	12 2-3	"

Total.....205 2-3 "

The continuation of the location through Pontotoc, Itawamba and Tishamingo counties will be 67½ miles further to the Tennessee line, making the entire length of the road in the State of Mississippi 273 miles, exclusive of the branch to the Tennessee river. The length from Mobile now definitely settled is 267 miles, 33 miles of which are nearly finished, embracing the purchase of extensive depot grounds and wharf rights at Mobile sufficient for the whole road when completed to the Ohio river. From this it will be seen that 234 miles more of the route North of Citronelle are now ready for graduation, and will be placed under contract so soon as sufficient means shall be subscribed to complete the same. The amount of capital in money and labor required for this portion of the road is shown by the following estimate of its cost, which has been prepared from the data furnished by the final surveys of the route adopted.

For the local work of clearing, grubbing, masonry, grading, bridging, station buildings, timber and laying of the track.....\$2,236,576
For iron rails (65 lbs. per yard,) chairs, spikes, twitches, engines, cars, and repair shop, machinery.....2,074,800

Total for 234 miles.....\$4,311,376
or an average of \$18,261 per mile.

The policy of this railroad company is to push on the work of construction as fast as is practicable, and the Directors now propose, and strongly desire, to place the whole of the line located under contract within the next five months, whilst the final surveys, releases of right of way, and stock subscriptions are being completed northwardly from Old Town creek, and through the State of Tennessee.—But the first and only pre-requisite to the making of contracts is, that the amount of capital needed for the completion of the local work should first be made up by subscriptions for the whole 234 miles.

The Directors are fully satisfied that this length added to the 33 miles now receiving the iron tracks, and making together 267 miles, will of itself directly and indirectly pay an abundant revenue to the stockholders and enable the company to negotiate for iron and machinery upon very favorable terms as to time and interest.

To show that the stock can and should be at once made up, it seems only necessary to lay before the public mind the following statements:—

First, that the above mentioned sum of \$2,236,573 for local work will be required and expended in the several counties through which the road will pass as follows:—

In Mobile county from Citronelle to the State line	28 1-2 miles.....	\$299,555
In Wayne " 34 do.....		290,189
In Clarke " 28 6-10 do.....		249,788
In Lauderdale " 34 2-3 do.....		347,449
In Kemper " 26 1-5 do.....		269,750
In Noxube " 26 1-7 do.....		247,480
In Lowndes " 26 1-5 do.....		245,700
In Monroe " 17 1-5 do.....		165,000
In Chickasaw " 12 2-3 do.....		120,665

Total length....234 Cost.....\$2,236,576

Divided at the south line of Kemper county, the length of the road to Citronelle is 125½ miles and the estimated cost of local work \$1,186,981; North of the same Kemper line, the length to the South line of Pontotoc county is 108½ miles, and the cost of local work \$1,049,595.

Second, that the \$1,186,981 required South of Kemper county will be furnished as follows:—By a subscription by the citizens of Mobile, through the city councils, of 2 per ct., per annum for five years upon the assessed value of the real estate of the city, which will yield the sum of... \$1,100,000
By subscription in Lauderdale co., Miss. 100,000
By " " Clarke " " 50,000
By " " Wayne " " 30,000

Total.....\$1,280,000 which gives a balance over the sum required sufficient to meet any unforeseen contingencies. The subscription by the city may already be counted as made by the prevailing public sentiment in its favor, and only waits for legal sanction by the Alabama Legislature in November next. Lauderdale county had subscribed \$46,000 and Clarke county \$7,000 in August, leaving at that time \$54,000 in Lauderdale, \$43,000 in Clarke and \$30,000 in Wayne to be made up.—But it must be borne in mind, that in Wayne no effort whatever has yet been made to get subscriptions, not much in Lauderdale, except by one gentleman, Mr. Rushing, and still less in Clarke. There is no doubt but these counties, as the road is now located, can and will easily make up the small amounts respectively attached to them before January next.

Third, that the \$1,049,595 required between Kemper and Chickasaw counties inclusive, have been chiefly subscribed before the final location of the line as follows:—

In Kemper counties.....	\$173,000
In Sumpter " (donation).....	14,000
In Noxubee "	281,000
In Noxubee " propositions for work to be paid for in stock.....	45,000
In Lowndes "	40,000
In Oktibbaha "	75,000
In Monroe " in work.....	120,400
In Monroe " in cash.....	15,000
In Chickasaw " in work.....	70,000
In Chickasaw " in cash.....	15,000

Total subscribed to 25th Aug., north of Lauderdale county.....\$848,500 leaving \$201,095 yet to be made up. By comparing this schedule of the August subscriptions with the cost of the work in, and with the interests and ability of the respective counties to furnish the money, or labor to do it, any one can see where the principal deficiencies exist, approximating in Sumpter county \$30,000, in Lowndes \$140,000, and in Oktibbaha \$31,000.

But without comparisons, which might seem invidious where all should be both willing and proud to do their best, it is now respectfully and urgently requested, that the people of the counties named in the above schedule of subscriptions, all of whom are nearly and clearly interested in the rapid progress of the road, will hold a railroad convention, and apportion this total deficiency amongst their counties, and simultaneously make it up before next Christmas.

Fourth, That the present subscription of the city and citizens of Mobile, besides paying all the expenses of surveys and of land acquisitions and entries, will furnish the whole cost of the 33 miles, with tracks and equipment complete, but nothing more.

Fifth, That the lands granted by Congress to aid in constructing the road have now all been entered that can be obtained under the law,—and amount to about 1,200,000 acres. These lands cannot be sold to any extent in advance of making the road, without sacrificing in a great measure their enhanced value to be derived from a completed roadway. But taken *en masse*, in connection with the local subscriptions for the local work all under contract, they form a basis of credit which will abundantly command the iron and machinery for the whole road as fast as it can be prepared to receive them. In this manner, the future enhanced as well as present value of the lands will be rendered available in building the road, and must

with every intelligent and unprejudiced mind, when thus used, put the seal of speedy and uninterrupted progress to the whole enterprise.

From these statements it will be seen that the 2 per cent. law for Mobile and a further subscription of \$328,000 in Mississippi, south of Pontotoc county, will secure the immediate commencement of 234 miles more of the road. And by the time this can be put under contract, surveys will be completed; road located, and stock for the local work subscribed for through the States of Tennessee and Kentucky to the mouth of the Ohio river.

Active operations will be commenced in Tennessee, during the present month; and it is confidently expected, that the agents and friends of the road, everywhere, learning by the communication how the means can be acquired to build all parts of the road, will use all possible diligence in completing the local subscriptions to the amount of the local work, and will report the same, county by county, to the office of the company at Mobile.

SIDNEY SMITH,

President Mobile and Ohio Railroad.
Mobile, Oct. 6th, 1851.

Gen. Green's Circular.

We call the attention of editors of newspapers throughout the country, to the propriety of calling the attention of their readers to the measure proposed in the circular addressed by Messrs. Green and Clarke (which will be found below) addressed to the Presidents of the railroad companies in the United States.

We venture to express a hope that the proposed convention of delegates will be fully represented by the ablest and most experienced persons who can be selected, for other matters than presented by the circular that such as are may be properly brought under the consideration of such a body. The railroad interest, if not now, is destined soon to become, the most important, if not the most influential in the country; and as the measure proposed in this circular, if accomplished, will greatly augment the available revenues, it will stimulate other and much greater investments in railroads, and thus extend the system into sections of the country, where few now believe a railroad can be made.

Gen. Green, who has given much time and reflection, to the details of the change of the mode of contracts proposed, argues that the saving will be one-sixth of the expenditure under the present system, and as that saving will be applied to the liquidation of the principal in a compound ratio, the effect will be to discharge the principal in a few years, and thus give the use of all the railroads in the United States to the Government without charge. He urges further, that the change will give to the existing railroad companies near forty million dollars in lieu of their present compensation, and that this sum will be as much a creation of that much capital as if it were so much coined gold.—He urges further, that the effect will enable companies to pay off their present indebtedness and to declare large dividends, and thus make the entire fund now invested in railroads available for all the uses of capital.—Thus adding many millions of dollars to the value of railroad shares.

He illustrates this by reference to many roads, but especially to the roads in the south and west—for example:—The Wilmington and Raleigh railroad company bar, have now for the first time declared a dividend of three per cent. The effect has been to put their shares, which had been selling at from three to ten dollars per share, up to fifty.—The proposed change would give this company upwards of eight hundred thousand dollars, and enable them, to pay off their entire debt, and hereafter to pay very large dividends,—this would add more

than one million of dollars to the value of their shares and make them at all times available as an investment of capital. The same might be said of all the Southern railroads—for what the measure would do for one, it would do for all. We again invite the attention of the press to this subject, and hope the meeting will be fully and ably attended.

WASHINGTON, August 1, 1851.

Sir—After consulting many persons interested in the principal railroads in the United States, the undersigned propose to establish agencies in this city and in New York, for the purpose of collecting full and authentic railroad statistics and such other information as will enable them to serve persons desiring to invest in railroad securities, or to procure information of any matters connected with the construction and administration of railroads. They also propose, especially, to urge upon Congress a modification of the laws relating to contracts for carrying the mail, so as to authorize the Post Office Department to contract for the perpetual use of railroads, and, instead of paying, as now, quarterly on contracts for four years, to advance in five per cent. bonds of the United States, chargeable upon the revenues of the Post Office Department, an amount, the interest upon which at 6 per cent. would equal the payments now made.

The government now pays \$300 per mile for carrying the mail on first class railroads. This is 6 per cent. on \$5,000. The undersigned would urge that, instead of paying \$300 a mile, per annum, the department should deliver, on a contract in perpetuity, five \$1,000 bonds, bearing an interest of five per centum. At this rate the charge upon the department would be reduced from \$300 to \$250 a mile, per annum, and the \$50 per mile saved would create a sinking fund, which will, in a few years, pay off the bonds, and give the use of such roads forever thereafter, free of all charge; thereby effecting a vast saving in the present annual expenditures of the Post Office Department, and a consequent reduction of the rates of postage.

The effect will be no less advantageous to railroad companies than to the government. For instance, such a contract would give to the Baltimore and Ohio railroad company more than \$2,000,000, which would enable that company to complete the road at an early day, and greatly increase its business and profits.

But to meet objections and impress the public mind with a proper sense of the benefits to result from this measure will require concert of action and continued active effort, through the press and otherwise. The undersigned tender their services to your company, expecting a reasonable compensation, partly contingent upon the success of the measure; and respectfully suggest the propriety of your sending one or more delegates to this city, on the first Wednesday in December next, to confer with delegates from other railroad companies, as to the details of the proposed arrangement and the best mode of bringing the subject before Congress.

Should it be your pleasure to accept of our services in this matter, we will promptly attend to all other business, which you, or your company, may have with the Post Office Department, or other branch of the government.

Hoping to hear from you at your earliest convenience, we are, respectfully, your ob't serv'ts,

DUFF GREEN,
BEN. E. GREEN,
RICH'D H. CLARKE.

Another Injunction.

The Peru and Indianapolis railroad company have enjoined the New Castle and Logansport company from crossing their track, of which Williamson Wright, Esq., gives the following account to Judge Elliot:

We were not stopped by injunction from crossing the Peru road. The company filed their bill, but as there was but one associate Judge in Howard county, they went to Peru and applied to the Miami Circuit Court for the writ. Judge Biddle being a stockholder, refused to act, and certified the case to Judge Smith of the Madison Circuit, so we are in the hands of the Bellefontaine interest.—*Mich. City News.*

The Eastern Railroad and its late President.

At the first meeting of the directors of the Eastern railroad company, which was held after Mr. Neal resigned the Presidency of the corporation, a "special report" was presented by that gentleman, which embodies so many interesting facts and statistics in regard to the operations of the road, during his administration, that we think we cannot provide a more agreeable article for our readers, than the following, which we gather from this report.

Mr. Neal, it seems, was chosen President of this corporation in July, 1841, about six months after the opening of the road to Portsmouth, and has consequently been in that position for ten years and a few weeks. A condensed view of the relative condition of the company, in 1841 and 1851 shows the following facts:—On the 30th of June, 1841, the cost of the road from Boston to Portsmouth was \$2,555,576 71. The same had cost, to the 30th of June, 1851, \$3,618,511 19. This difference, amounting to \$1,062,934 48, has been expended in the construction of the Gloucester and Salisbury branches in providing a new ferry boat, and constructing new slips at Boston and East Boston, in new station, freight, and car houses and other improvements in Boston and East Boston, in the improved depot accommodations at Salem, Lynn, and other stations; in having a second track between Salem and Boston, and in the increased equipment of the road. The motive power has been more than trebled, the passenger accommodations increased two and a half times, and the means of transporting freight, gravel, &c., more than quadrupled, since 1841. The capital stock was then \$2,000,000; it is now \$3,342,500. The property not required for the use of the road in 1841, was valued at \$179,117 19; in 1851, it was valued at \$590,107 56.

A comparison between the business of the year ending June 30th, 1841, with the year ending June 30th, 1851, shows the following statistics:

	1841.	1851.
The number of passengers carried was.....	520,659	993,156
The number of passengers carried one mile.	6,150,506	10,654,945
The receipts from passengers were.....	\$256,176	\$372,167
Number tons of merchandise.....	10,926½	61,950
Receipts from do.....	\$14,504	\$60,005
Whole number of miles run.....	178,513	318,900
Expense per mile run (in cents).....	83	61
Total receipts of the road.....	\$291,305	\$502,054
Expenses for motive power.....	41,618	80,032
Train expenses.....	14,833	35,133
Total expenses of working road.....	149,465	195,398
Amount paid for interest.....	25,000	29,200
Net income.....	116,839	277,455
Per centage of income in capital.....	.05842	.083

One of the most interesting tables of statistics is that which represents the result, or total, of ten years' operations on the Eastern railroad, from July 1st, 1841, to June 30th, 1851. The whole number of passengers carried has been 7,862,693, from whom the sum of \$3,305,329 27 has been received. 421,421 tons of freight have produced an income of \$436,159. The mail carriage has produced an income of \$97,279 23, the property accounts \$210,349 39, which, with the incidental receipts, am't to \$4,108,921 20. The expenses of working the road for this period have amounted to \$1,529,641 77, leaving a balance of \$2,579,279 43. Of this amount, \$309,757 48 has been paid for interest on the funded and floating debt of the company. The dividends paid to the stockholders have amounted to \$2,026,200 50, so that the surplus earnings of the road have been \$243,321 45, from which have been expended, for renewals, contingencies, &c., the sum of \$231,850 88, leaving a final balance or surplus fund of \$11,470 57. The surplus fund, July 1st, 1841, amounted to \$10,782 97, so that the

total surplus of the corporation, July 1st, 1851, was \$22,253 54. The whole number of miles run by trains has been 2,468,450, at an expense of 62 97 cents per mile; 68,668 cords of wood have been used, giving 2.74 cords to a hundred miles run.

These statistics are not the only interesting matters in this report. He pays a just and well merited tribute to the "integrity, capacity, and energy" of those who have assisted him in the performance of his official duties. Speaking of these officers, he says:—"Thus situated, however satisfactory may have been the management of the road, I can claim but little merit other than that of having selected or retained persons in its employment, who have thus proved their fitness for the positions they have occupied." The difficulties between the Eastern and the Boston and Maine railroad company, growing out of the railroad in Maine, and the amicable settlement of them, are alluded to.—The efforts to obtain a competing route between Salem and Boston are spoken of in that style of severe and powerful language in which Mr. Neal so much excels. He concludes by saying, "But it is to be hoped that these controversies will now cease, and that the precautionary measures that have recently been taken may ensue amicable arrangements in relation to them, and that we may now fairly anticipate a fair wind and smooth sea for the future." After praising and congratulating the board of directors for the great unanimity which has marked all their movements and proceedings for the past ten years, Mr. Neal closes his report in the following words:

"In repeating to you, gentlemen, my thanks for the kindness which I have always experienced at your hands, I may, perhaps, with propriety, express to you as their representatives, my obligations to the stockholders of this company for their support and approval, evidenced by their having for eleven successive years elected me to a seat in your board, with almost entire unanimity. It is the testimony of active business men, who know their own interests, and are therefore competent to judge those who act for them. A single vote from a single individual of this character, would outweigh, in my estimation, the slanders of an army of blackguards, even if they had contrived to borrow or steal a font of types to disseminate their venom, and the cowl of religion to cover their polluted heads."—*Salem Observer*.

Hempfield Railroad.

The Philadelphia Commercial List, states that by a survey, which has been completed of one of the proposed routes, the length of this road will be 77½ miles. The highest grade which has been encountered on the line surveyed is 66 feet per mile. The cost of the work has not yet been estimated. The resources of the company consist of Private subscriptions in Ohio Co. Va...\$154,000 " " Washington Co. Pa. 300,000 Subscriptions by the county of Ohio, Va...150,000

Total actual subscriptions.....\$604,000

In addition to those sums, other subscriptions are anticipated. A vote was taken on the 14th inst. by Washington county Pa., on the question of a subscription of \$200,000 by the commissioners of that county, which has been carried by a large majority.

A vote is to be taken in Ohio county, Va., on the 22nd inst. on the question which has been submitted of a further subscription by that county of the additional sum of \$150,000. If this vote is successful the company count on the following addition to their available resources.

Additional subscriptions by Ohio county...\$150,000 Subscriptions by the City of Wheeling... 50,000 " the town of Washington. 50,000 Further private subscriptions..... 100,000

Total anticipated subscriptions.....\$350,000

As these subscriptions depended mainly upon the result of the vote in Washington county, there is now no doubt of their being made. In this case the construction of the road will be forthwith com-

menced. When these subscriptions are completed, an effort will be made to obtain aid in Philadelphia to insure the early completion of the road.

New York.

Buffalo and Conhocton Railroad.—This road which branches out from the Erie at Corning, will be in operation for about fifty miles in November, and is contracted for opening fifty-three miles further, to Batavia, early the ensuing summer, and thence to Buffalo in November following. Commencing at Corning, it passes up the rich and fertile valley of Conhoctoc, and through the beautiful villages of Bath, Avoca, Dansville, Conesus, Avon Springs, Le Roy, to Batavia, and thence direct to Buffalo. The road is the same gauge as the Erie, and built in the same manner. When completed, it will be, by several miles, the nearest and most direct route to Rochester and Niagara Falls and Buffalo. At Avon it intersects with the Genesee, eight miles to the south, and Rochester, eighteen miles on the north.

At a recent meeting of the stockholders, the following gentlemen were elected Directors of the company for the ensuing year:—John Magee, President, Bath; Constant Cook, Bath; Orville Comstock, Avon; Daniel Curtis, Campbell; Mills P. Lampson, Le Roy; Thomas Brown, Caledonia; Trumbull Cary, Batavia; Wm. T. Miller, Buffalo; Orson Phelps, Buffalo; Thomas J. Dudley, Buffalo; Jas. S. Wadsworth, Genesee; John A. C. Gray, New York; A. B. Dickinson, Hornsby.

Troy and Boston Railroad.—On Saturday an excursion train ran out on the completed part of this road, some six miles from the city of Troy.

New York.

Syracuse and Binghamton Co.—The officers of this company are, Henry Stevens, of Courtland County, President; Col. H. Lewis, Broome, Vice-President; Horace White, Syracuse, Treasurer; A. H. Hovey, Secretary.

Rochester and Syracuse Direct Railway.—The construction of this important road is rapidly advancing. The line is one of the most direct and level in the country. It is perfectly straight for 20 or 30 miles, and the grade does not exceed 10 to 15 feet to the mile. This road passes through Port Byron, Weedsport, Lyons, Clyde and Palmyra, and numerous other thriving villages.

Erie Railroad.—At the election of Directors of the Erie railroad yesterday the old Board was re-elected with the exception of Mr. Theodore Dehon, who goes out, his place being filled by Mr. Gouverneur Morris, of Morrisania. The vote was 24,400 for the ticket elected, excepting Mr. Morris who received 19,000. The Board is now composed of the following gentlemen: Benjamin Loder, Henry Shelden, Daniel S. Miller, Henry Suydam, Jr., William E. Dodge, Shepherd Knapp, Samuel Marsh, Cornelius Smith, Thomas J. Townsend, Homer Ramsdell, William B. Skidmore, Marshall O. Roberts, Thomas W. Gale, Charles M. Leupp, John J. Phelps, Norman White, Gouverneur Morris.

Travel West.

We stated last week, that the Pennsylvania railroad would probably take most of the travel going west, during the winter. It may turn out that we were mistaken in our opinion. It is confidently stated that the Lake shore road from Dunkirk west to Erie will be completed by the 1st of January. In Ohio, the road is nearly graded to Ashtabula, to which place it is stated the rails will be laid during the coming month. Should those sections be completed as soon as anticipated, there will be but 40 miles of stages between Cleveland and Dunkirk.

Pennsylvania.

The Chartiers' Railroad.—This road running from Coal Harbor, on the Ohio river, about three miles below Pittsburgh, to the company's coal pits, about five miles, was lately opened by a grand celebration, in which the President, Engineer Elwood Morris, Esq., formerly of Schuylkill county, and the non-resident Stockholders were tendered a dinner by the citizens of Pittsburgh and Alleghany county, as an evidence of their appreciation of the enterprise just completed. A large excursion train, filled with guests, passed over the road on the 27th ult., the day of the opening of the road, and on its return brought back 20 loaded cars, or 100 tons of coal. "The descent," says the Pittsburgh Post, "was made in the most satisfactory manner, without the slightest accident occurring, and when the party returned to Coal Harbor, three hearty cheers were given to Thomas McE'rath, Esq., President of the Company, and three more to Ellwood Morris, Esq., the Engineer.

The Post makes several other complimentary allusions to Mr. Morris. We are pleased to see him thus rising in public favor, and we are sure nothing could be more gratifying to his numerous friends generally in this county, than to know that his talents, both professional and social, are properly estimated in another community.

Illinois.

Central Railroad.—The council passed an ordinance last night, appropriating the sum of \$10,000, if such sum should be found necessary, for the purpose of endeavoring to prevent the Central road from being diverted from its original route, in direct violation of the spirit and letter of the charter, and authorizing the mayor, associated with a committee, duly appointed for the purpose, to memorialize the President and the Secretary of the Interior, to confer with the Governor of the State, and to use every proper and available means, to prevent the commission of so great a wrong, not only against the city, but against the State at large, if the proposed indirect route is persisted in by the company. The feeling in regard to this matter throughout the whole community is so universal, that the action of the council in the premises, we are confident, will meet with a ready response, at the hands of an intelligent and enterprising constituency.—*Chicago Journal*, 30th ult.

Vermont

Central Railroad Company.—We are authorized to announce, that the mortgage, for \$2,000,000, was executed yesterday, and that Vermont Central bonds, thus secured and certified by the trustees, will be issued as soon as practicable, to the amount required to discharge the indebtedness of the company, and pay for the completion of the road and its equipment. The trustees named in the mortgage are, William Amory, Esq., Charles O. Whitmore, Esq., a director of the Vermont Central, both of Boston, and Hon. John Smith of St. Albans, Vt. President of the Vermont and Canada railroad company.—*Boston Courier*.

Railroad Subscriptions.

At the recent State election, the county of Washington, Pennsylvania, voted to subscribe 200,000, to the Hempfield railroad, in Ohio; at the recent State election there, the county of Muskingum voted \$100,000 to the Cincinnati, Wilmington and Zanesville railroad, and \$100,000 to the Central railroad. The city of Zanesville voted \$25,000 to the Cincinnati, Wilmington and Zanesville railroad. The county of Belmont, Ohio, has also voted \$100,000 to the Ohio Central railroad.

The receipts on the Morris Canal for the week ending on Saturday week were \$4,150 62, against \$2,035 97 for corresponding week last year. Increase 2,114 65. The total increase to the same date over 1850 is \$10,227 91. When it is remembered that 75 days of navigation was lost this year, in consequence of the non-completion of the improvements on the line of the work, the result tells very favorably for the ultimate productiveness of the canal.

Illinois Central Railroad.

Congress granted a large body of land to secure the building of a Central railroad from Chicago to Cairo by as direct a line as may be, and this land was given positively and expressly for no other purpose than the one above indicated. That is, this road was to run through Illinois, and for the sole benefit of Illinois, so far as this portion of the great continuous route is concerned. Still there is an anxiety prevailing to no little extent in the north to run the road on the eastern line of the State, so as to benefit Indiana and Michigan to the neglect of the interests of Illinois. We contend that though the railroad company might make five dollars by running the road in this direction to where one could be made by running it through the centre of the state as near as practicable, yet to derive authority to pursue such a course would require a foul construction of the law and a palpable, if not dishonest, indifference to the rights of the community whose interests were to be subserved.—*Cairo Sun*.

North Carolina.

Wilmington and Manchester Railroad.—The directors of this company met at Marion Court House on the 18th ult. The directory expressed their entire satisfaction with the management of the President in the sale of the bonds of the company. It was agreed to accept the proposition of the State of North Carolina, to subscribe 2000 shares of the stock of the Wilmington and Raleigh railroad, for stock in the Manchester company.—Contracts were made for all the iron of the road, payable in the bonds of the company; also for 8 locomotives on the same terms. Five miles of the railroad are laid with iron, and it is calculated that eleven miles will be laid by the 1st of November. A locomotive, freight car, and passenger car are now on the road. The iron will be received and laid on this end of the road, by the first of March next. Steam pile drivers have been ordered, for operations on Eagle's Island and other parts of the road. From what we learn, we are confident that the affairs of this road are exceedingly well managed by all concerned, and every thing is in the "full tide of successful experiment."—*Wilmington Commercial*.

Bytown and Prescott Railroad.

The ceremony of breaking ground on this road took place on the 9th inst. amidst a large concourse of people assembled to witness the event.

The great object of this work is to connect the Ottawa river with the St. Lawrence, at Prescott, opposite Ogdensburg, the terminus of the Northern railroad. The length of the line will be about 54 miles. The cost of construction is estimated by the Engineer, Mr. Shanly, at \$780,000. The route is generally very favorable, as may be inferred from its estimated cost.

The road strikes the Ottawa at Bytown, which is 130 miles from its junction with the St. Lawrence, and will furnish the appropriate outlet for the trade and business connected with the former river, which is one of the most magnificent water courses in this country. The territory watered by this river is one of the sources from which the N. York market is supplied with lumber, which exists there in inexhaustible supplies. The immediate valley bordering this river, as well as that of the St. Lawrence, is extremely fertile, capable of sustaining a dense population.

The present outlet for this country is by way of Montreal, which during the season of navigation is not only very circuitous, but for four or five months in the year is closed by ice. By means of the northern road it will at all times be opened to our own markets, and derive all the advantages from such a connection. The country traversed is of a very fine description, and will furnish a large amount of local traffic, while the importance of the connection made by the road is hardly excelled by any similar work in this country.

Memphis and Charleston Railroad.

The contractors on the line from this city to La Grange commenced operations day before yesterday, near the city line. According to the terms of the contract, the contractors are bound to finish 5 miles of the grading per month, as far as the old bed of the Memphis and LaGrange road extends.—Quite a large amount of cross pieces are already delivered along the line of the road. We understand that contracts have been made for locomotives, passenger and freight cars, and that the iron has probably, ere this time, been bought. The prospect of having the road in a state of completion some fifty miles in the interior by this time next year, is, from these indications, very auspicious.—*Memphis Inquirer*, Oct. 9.

Southern Enterprise.

We see by the Montgomery (Ala.) Atlas, that there is now in operation in Montgomery, an establishment of iron works, which gives daily employment to one hundred and fifty persons. The establishment was started about a year and a half ago, under the control of Messrs. Gindrat & Co., and since that time has turned out over eighty steam engines. One of these, which is said to exhibit a high order of beauty and mechanical skill, is to be sent to Macon for exhibition at the Fair.

Ohio.

The Ohio State Journal says, that the railroad from Springfield to connect with the Columbus and Xenia road at London, has been located and let. The road is nineteen miles in length, but has three curves, and very slight grades. The road is to be completed in the course of next year.

Memphis and Charleston Railroad.

Jas. F. Cooper, Esq., has been appointed Chief Engineer of this road, in place of Col. C. F. M. Garnett, resigned. The Memphis Eagle says Mr. Cooper will at once proceed to the preparation of the work for the operations of the contractors as far as La Grange.

Illinois.

Peoria and Oquawka Railroad.—We learn from the Monmouth Atlas, of the 9th inst., that the Oquawka and Peoria railroad, is under contract, and that it will be built immediately. The citizens of Burlington, Iowa, and Farmington, Illinois, are holding great jubilees on the occasion.

Southern Railroad Convention.

The citizens of Dundson county, Tennessee, have appointed 50 delegates to represent them in the great Southern Railroad Convention to be held at New Orleans on the 1st of January next.

Awards in the Locomotive Race.

We find in the Lowell *Vox Populi* the following award of premiums to the recent trial of speed and strength at Wilmington. In awarding the medals the committee say they have in all cases made the award to the persons or corporations contributing:

To John Howe, Jr., Agent of the Brandon Works, a silver medal, for Mowry's car coupling.

To the Addison Gilmore, from the Western railroad, a gold medal, for the best time made.

To the Nathan Hale, Boston and Worcester railroad, a silver medal, for the second best time made.

To the Dedham, from the Boston and Providence railroad, for the peculiar arrangement of the engine and tender, and the importance of which we have alluded to, and for the drawing apparatus, which increases the adhesion, with increased draft on inclined planes, a silver medal.

To the Milo, freight engine, from the Boston and Lowell railroad, for the best performance, according to the prescribed rules, a gold medal.

To the St. Clair, freight engine, for the second best performance, a silver medal.

American Railroad Journal.

Saturday, October 25, 1851.

Bellefontaine and Indiana Railroad.

We learn from good authority that, within a few weeks from this time, the graduation and masonry on the first division of this road, from Galion to Marion, a distance of 20½ miles, will be entirely ready for the rails. The cross-ties are rapidly being delivered, and the energetic contractors, Messrs. J. and S. Chamberlain, are prepared, as soon as the iron can be delivered at the eastern terminus, to lay down the track at the rate of half a mile a day. Nothing, therefore, is likely to prevent an early opening of the eastern end of this important line, unless a delay should occur in the delivery of the iron.

The next division, in the order in which the road is to be opened, is that comprised between Bellefontaine and Loramie Creek, passing through the flourishing town of Sidney, a distance of 32½ miles, on which, with the exception of two or three short jobs, the graduation and masonry are very nearly finished. The whole of this division will be ready for the rails at the earliest period next spring.—From Marion to Bellefontaine, and from Loramie Creek to the Indiana line, on which nearly all the work is very light, the various jobs have been progressing during the season, but not with the same energy as on the other parts, which are to be first opened.

A glance at any map exhibiting the great railroad lines of Ohio, will show at once why the company decided to open the road in the order mentioned.

As soon as the line is finished from Marion to Galion, a junction is made with the Cleveland, Columbus and Cincinnati railroad, running to Cleveland, and bringing the immense cattle region of the State into immediate railroad connection with the lake. In like manner, as soon as the line is finished from Loramie Creek, or from Sidney, to Bellefontaine, a junction is effected with the Mad River and Lake Erie railroad, affording a railroad outlet to the lake for the rich and abundant productions of the Upper Miami Valley, thus bringing at once into profitable use considerable portions of the road, whilst the remainder is in progress of construction.

But it is not the intention of the company to rest a moment on any link or links on their great line, but to prosecute the whole to completion, to the extent of their ability, at the earliest practicable period. The public are looking for a complete chain at the close of 1852 from New York to Terre Haute, and we trust that nothing may happen to prevent the accomplishment of this great desideratum.

Indiana.

New Albany and Salem Railroad.—We learn that L. and H. Kent, recently contractors on the Erie railroad, have closed a contract to grub and grade 26 miles of the New Albany and Salem railroad, from Michigan City, westward.

This portion of the above road is being constructed by the Michigan Central road, for the purpose of securing to themselves an extension around the lakes to Chicago. The right to do this is denied by the Michigan Southern road, but the Central company, it seems, are determined to push ahead, relying upon their rights under the New Albany

charter, or trusting to obtain a healing act from the Indiana Legislature, should any question arise invalidating their claims.

Stock and Money Market.

There has been a very decided improvement in the money market since our last report. Money is daily becoming more abundant, and there is a strong confidence felt in all quarters, that it will shortly become easy for all commercial purposes. The exportation of gold appears to have very nearly subsided, while the supply continues to increase.

The stock market shows a very decided advance in prices. This, perhaps, is the best evidence that money is becoming more abundant. The large increase of receipts over the past year tends strongly to strengthen confidence in this kind of property. Should the market continue to show a still further improvement, railroad companies may soon venture to offer their securities with the expectation of obtaining a reasonable price for them.

The stock market was thrown into a great confusion the present week, by the failure of the house of Jacob Little & Co., which has long been supposed to be invulnerable against all attack, and to be possessed of a sort of unerring instinct, which was sure to guide it right in all its stock operations.—It has been "bear" or "bull," as interest dictated, and was regarded as likely to be more successful, and safer, from this very want of consistency, which permitted it at all times to take the winning side. Stock speculators who are consistent "bulls or bears," generally fall a sacrifice to this consistency; for violent fluctuations that are always occurring, sooner or later, overwhelm them. This house was not hampered with any such inconvenient maxims—but could blow hot one day and cold the next, and always on the right side. It had the reputation of making immense sums during the recent stock panic, and was regarded up to the moment of its failure as very rich. It is said to have lost very large sums in *bulling* the Delaware and Hudson, and in recent attempts to *bear* the Erie, the Norwich and Worcester, and other stocks. No failure in this city could have created such surprise as this, but it will probably have very little permanent effect upon the stock or money market. The house was one of the oldest in Wall Street, and, we believe, never failed before.

This gambling in stocks is looked upon as a very respectable business, but if flour merchants, for instance, should resort to similar measures to control the price of that article that stock jobbers do in their operations, they would be indicted, and punished as nuisances. Think of a man spending his whole life in attempts to depreciate the value of a property held by his neighbor. This is one side of the picture. The object of the opposing parties is to palm off a stock for more than it is worth. A case came under our observation a short time since which was illustrative of the business of stock jobbing, perfectly. A certain broker in Wall Street, introduced a lot of bonds into the market, and by dint of dextrous management, sold them at a good price. After he had disposed of them, knowing them to be perfectly safe, he made up his mind to repurchase them at the lowest figure possible. With this object, he went to work to discredit them in the market, and succeeded in poisoning every source to which persons would apply for reference. He succeeded so well in his efforts that the holders were unable to get rid of their purchase at any price, and the result was they were glad to accept an offer (made for the benefit of the

operator) of just one-half of the amount they paid. This case contains the substance of the whole operations of Wall Street in a nut shell. Yet the community sustains some hundreds of this class of persons, who live at the rate of from \$2,000 to \$30,000 a year. Taken together, stock speculators are the greatest batch of nuisances to be found in the community. Their whole life is spent in mischief. They produce nothing. The immense sums necessary to the support of this numerous and luxurious class, is drawn entirely from outsiders, who are enticed into their meshes upon the same principle that a countryman is drawn into a mock auction shop. Stock jobbing, by which we mean "operating for a rise or a fall," is not a whit more respectable than selling at mock auction.—The numbers engaged in it, and the magnitude of the transactions, give the business an air of dignity and respectability which glosses over its real character. In all gambling, the great majority must, in the end, lose, as nothing is produced, while all must be supported. One man in ten thousand, more unscrupulous and dextrous than the rest, may succeed in getting and holding on to something; but all the others must be losers.

A short time since, the city papers announced with the greatest *naivete*, that a "highly respectable and popular house had been compelled to suspend payment, from heavy losses incurred by the general and rapid appreciation of railroad and other stocks. The public will receive the announcement with deep regret, etc." We have a high opinion of the intelligence of the public, but out of our larger cities, we do not believe that there is one person in fifty, to whom the above announcement was not a puzzler. "Failed in consequence of the rise of property! What can this mean?" would be the general inquiry. "A curious cause for failure." The house had been giving out its agreements that certain property should *not* rise in value, and, as an equivalent, took back agreements of others that it *should*.—The property *did* rise in value, and the party making the agreement could not pay the penalty, and so "announced" that they had stopped. Such is a faint picture of stock operators in Wall Street.

We give in another column, an advertisement of the sale of the bonds of the Northern Indiana railroad company, for the purpose of completing their road. As the stock bids fair to prove a profitable investment for capital, there can be no question as to the perfect security of the bonds offered. The road, as is well known traverses one of the finest portions of the western country. The local traffic alone, will afford a lucrative business. We cannot commend to capitalists any better security than the one offered.

The road is now in most efficient hands, and has been pushed with extraordinary energy and success. Of the early completion there is not a doubt. It will unite with the Rock Island road near the south shore of south Michigan and form with the latter a direct line of railroad from the southern part of Lake Erie to the Mississippi river, and ultimately to the Missouri.

Worcester and Nashua Railroad.—The income of the Worcester and Nashua railroad for August and September this year, compares as follows with the same months of 1850:

	August.	Sept.	Total.
1851.....	\$15,241 75	16,777 00	31,918 75
1850.....	12,909 98	14,930 11	27,840 09
Increase in 1851.....	\$4,078 66		

Erie Canal.—The amount received for tolls on all the New York State canals during the 2d week in September, is \$118,229 70
Same period in 1850..... 107,339 01

Decrease in 1851.....\$10,890 69

The aggregate amount received for tolls from the commencement of navigation to the 14th October inclusive, is \$2,629,525 38
Same period in 1850..... 2,395,940 13

Increase in 1851.....\$233,585 25

The Evening Journal gives the annexed statement of the quantity of flour, wheat, corn and barley, left at tide water during the 3d week in October in the years 1850 and 1851, as follows:

	Flour.	Wheat.	Corn.	Barley
	bbls.	bush.	bush.	bush.
1850.....	143,446	196,200	20,231	189,784
1851.....	137,186	150,022	197,844	175,067

Dec.... 6,260 46,178 Inc. 177,613 de.14,717

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 22d Oct., inclusive, during the years 1850 and 1851, is as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1850.....	2,031,407	1,857,494	3,029,032	1,149,208
1851.....	2,546,287	2,254,306	6,854,763	823,594

Inc..... 514,880 396,812 3,825,731 dec.325,614

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 22d Oct., inclusive, during the years 1849 and 1851, is as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1849.....	2,120,706	1,634,427	4,617,672	755,358
1851.....	2,546,287	2,254,306	6,854,763	823,594

Increase. 425,581 619,879 2,237,091 68,236

By reducing the wheat to flour, the quantity of the latter left at tide water this year, compared with the corresponding period of last year, shows an increase of 594,242 bbls. of flour.

Ogdensburg Railroad.—The earnings of the Ogdensburg railroad for the month of September were as follows:

Freight going east.....	\$13,341 06
" west.....	6,136 22
Company property.....	561 50

Total freight..... 20,038 78

Passengers..... 13,498 78

Miscellaneous..... 930 39

Total.....\$34,467 95

The earnings of August were about \$28,000, and the above exhibits a gain of nearly \$7,000 over that month.

Michigan Central Railroad.—The earnings of the Michigan Central railroad for September, 1851, were \$148,117 23
For September, 1850..... 117,078 00

Increase—30 per cent.....\$31,039 23

This is a very good increase on the large earnings of last year.

Trade of Buffalo.—The following is a comparative statement of seven of the leading articles received at this port since the opening of navigation to October 1st, for three years.

	1849.	1850.	1851.
Wheat, bushels.....	3,415,381	1,446,414	3,178,087
Corn.....	2,644,130	1,958,542	4,879,543
Oats.....			914,843
Flour, bbls.....	771,291	495,843	882,801
Pork.....	46,382	34,868	30,653
Beef.....	12,101	15,211	15,224
Whiskey.....	28,480	21,320	46,995

Trade of Oswego.—Shipment of four articles from the opening of navigation to October 1st, for three seasons:

	1849.	1850.	1851.
Flour, bbls.....	389,324	477,039	575,300
Wheat, bush.....	475,610	432,663	863,065
Corn.....	357,824	366,134	1,003,654
Lumber, ft.....	40,630,885	60,395,351	71,651,048

Galena and Chicago Railroad.—The earnings of this road are steadily increasing. The following shows the amount received during the month of September:

Freights.....	\$9,095 64
Passengers and mails.....	8,107 81
	17,203 45

AURORA BRANCH.

Freights.....	\$1,046 97
Passengers.....	752 22
	1,799 19

ST. CHARLES BRANCH.

Freights.....	\$258 38
Passengers.....	182 24
	440 62

Total earnings.....\$19,443 26

Earnings September, 1850:

Freights.....	\$7,666 96
Passengers and mails.....	6,392 96
	14,058 96

Increase.....\$5,385 30

Railway Share & Stock List;

CORRECTED WEEKLY FOR THE
AMERICAN RAILROAD JOURNAL.

NEW YORK OCTOBER 25, 1851.

GOVERNMENT AND STATE SECURITIES.

U. S. 5's, 1853.....	101½
U. S. 6's, 1856.....	104½
U. S. 6's, 1862.....	109½
U. S. 6's, 1862—coupon.....	114½
U. S. 6's, 1867.....	115½
U. S. 6's, 1868.....	116½
U. S. 6's, 1868—coupon.....	122½
Land Warrants.....	140a145
Arkansas 6's.....	52a53
Alabama 5's.....	91a92
Indiana 5's.....	79
Illinois 6's, 1870.....	65a68
Kentucky 6's, 1871.....	104a106
Massachusetts sterling 5's.....	105a106
Massachusetts 5's, 1859.....	100½
Maine 6's, 1855.....	103
Maryland 6's.....	102½
Michigan.....	—
Mississippi.....	—
New York 6's, 1855.....	103½
Ohio 6's, 1860.....	107½
Pennsylvania 5's.....	91

RAILROAD BONDS.

Atlantic and St. Lawrence, 6 per cent.....	85
Baltimore and Ohio, 1867.....	94½
Boston and Providence 6's, 1855.....	101
Boston and Worcester 6's, 1855, convertible.....	107½
Bost., Concord and Mont. 6's, 1860, mortgage.....	87½
Cheshire 6's, 1860.....	91½
Connecticut River 6's, convertible.....	89
Erie 7's, 1859.....	96
Erie 7's, 1868.....	108½
Erie income 7's.....	93½
Hudson River 7's, 1853.....	101½
Michigan Central, convertible, 8's, 1856.....	104½
New York and New Haven.....	100½
Norwich and Worcester, mortgage, 1860.....	80a85
Old Colony, 1854.....	97½
Ogdensburg 7's, 1859.....	90
Portsmouth and Concord.....	80a85
Passumpsic 6's, 1859.....	94½
Rutland 7's, 1863.....	92
Reading mortgage, 1860.....	80
" " 1870.....	75
Sullivan, mortgage 6's, 1855.....	75
Vermont Central 6's, 1852.....	93
" " 6's, 1856.....	77
Vermont and Massachusetts 6's, 1855.....	85

RAILROAD STOCKS.

[CORRECTED FOR WEDNESDAY OF EACH WEEK.]

	Oct. 15.	Oct. 22.
Albany and Schenectady.....	89½	93
Atlantic and St. Lawrence.....	60a65	—
Androscoggin and Kennebec.....	30a35	—
Boston and Maine.....	104½	103½
Boston and Lowell.....	109	109
Boston and Worcester.....	102	102
Boston and Providence.....	84½	86
Bost., Concord and Montreal.....	36	—
Baltimore and Ohio.....	71½	—
Baltimore and Susquehanna.....	36	—
Cheshire.....	46	47
Cleveland and Columbus.....	—	—
Columbus and Xenia.....	—	—
Camden and Amboy.....	—	—
Connecticut River.....	60	—
Delaware and Hudson (canal).....	—	108½
Eastern.....	95	95½
Erie.....	77	83
Fall River.....	92½	94
Fitchburgh.....	108½	109
Georgia.....	—	—
Georgia Central.....	—	—
Harlem.....	68	69½
Hartford and New Haven.....	124	—
Housatonic (preferred).....	—	—
Hudson River.....	73	73½
Kennebec and Portland.....	50a55	—
Little Miami.....	—	—
Long Island.....	15	14½
Mad River.....	90	—
Madison and Indianapolis.....	90	93
Michigan Central.....	105	106½
Montgomery and West Point.....	—	—
Michigan Southern.....	—	—
Manchester and Lawrence.....	70	80
Morris (canal).....	14½	15½
New York and New Haven.....	109	109½
New Jersey.....	—	—
Northern.....	67	68
Nashua and Lowell.....	107½	—
New Bedford and Taunton.....	108	—
Norwich and Worcester.....	52	46½
Norfolk County.....	8	9½
Ogdensburg.....	31½	32
Old Colony.....	65	65
Passumpsic.....	72½	72
Pennsylvania.....	—	—
Pittsfield and North Adams.....	95	—
Philadelphia, Wilmington & Balt.....	26	26
Petersburg.....	—	—
Richmond and Fredericksburg.....	—	—
Richmond and Petersburg.....	56	56½
Reading.....	105½	107½
Rochester and Syracuse.....	41	42½
Rutland.....	40½	44
Stonington.....	—	—
South Carolina.....	—	—
Syracuse and Utica.....	123½	—
Sullivan.....	15a20	—
Taunton Branch.....	108	110
Troy and Greenbush.....	90	—
Tonawanda.....	—	—
Utica and Schenectady.....	127½	127½
Vermont and Canada.....	97	99½
Vermont Central.....	26	27
Vermont and Massachusetts.....	25	25
Virginia Central.....	—	—
Western.....	103½	104
Wilmington and Raleigh.....	—	26
York and Cumberland (Pa.).....	20	—

Ohio and Pennsylvania Railroad.

A locomotive has been run to a point in the valley of Clark's Run, about 35 miles from Pittsburgh. The Pittsburgh Gazette says "the whole of the heavy work on the slopes of the Big Beaver, including the high bridge over Wallace's Run, is now passed regularly by the construction train. The great through cut at the summit, seventy-four feet deep, is now ready for the track, which is to be laid through it next week. In about a month from the present time, the road is to be opened to Palestine in Ohio, forty-eight miles from Pittsburgh. The business of the road in use to New Brighton continues to be highly gratifying to all its friends."

Canada.

St. Lawrence and Atlantic Railroad.—This road was opened for traffic to Richmond, on the St. Francis river, on the 15th instant, with the observance of ceremonies usual on such occasions. At half past eight o'clock, a.m., the president and directors, together with many distinguished guests, assembled on board the Ste. Helene, at the Jacques Cartier wharf, whence they proceeded to Longueuil. There the party were disposed of in four large cars, attached to a new locomotive called the St. Lawrence, and left Longueuil at 9:10, a.m. The following is a memorandum of the time to the different stations, and their distances from Longueuil:

	Miles.	Time.
St. Hilaire.....	17	9:40
St. Hyacinthe.....	30	10:27
Upton Tank.....	40	11:00
Upton Station.....	43	11:05
Wood near Acton.....	48	11:20
Acton Station.....	49	11:32
Durham Station.....	57	12:00
Durham Tank.....	64	12:22
St. Francis Bridge.....	68	12:45
Richmond.....	71	12:55

Within three miles of the beautiful village of St. Hyacinthe, the road gives into the thick woods, and pierces them for a distance of 35 miles without a clearing, and without a single dwelling house, except occasionally a workman's shanty.

Near the Upton station, the line crosses first the Black river, and then the White river, by bridges of the most solid construction. The bridge over the St. Francis is a beautiful and most substantial piece of workmanship. With a train of 70 tons, the deflection of the bridge was less than half an inch, scarcely in fact perceptible.

At the Richmond station, a distance of three miles from the bridge, the party were greeted by a great crowd of people from the surrounding townships, who had congregated to meet them.

In the temporary station house reared here, a most substantial collation was spread upon two tables running its extreme length. After the dinner was disposed of, the chairman proposed "the Queen," which was drunk with enthusiasm.

The next toast was "the Governor General," which was well received. The chairman then gave "the Provincial Administration," for which the Hon. Mr. Lafontaine returned thanks, concluding by proposing the health of Mr. Galt, president of the road, which was warmly responded to by the company, and appropriately acknowledged by that gentleman.

"The Sister Colonies" was then drunk. To which Mr. Fairbanks, of Halifax, responded.

"The Sister Company in Maine" was next proposed. Mr. Galt said that it was now six years since the enterprise they were celebrating was first thought of, some of them years of success, others of them years of gloom, but now he had not a shadow of a doubt that next year, the communication would be open from Montreal to Portland; 91 miles were now in operation, 31 more would be opened in the spring, and 35 more far advanced, leaving 60 to complete, and that distance would be, unless great difficulties came in the way. The next time they met, they would meet in Portland. He then complimented the other roads, and was glad to see so many representatives from them present. There could be no jealousy among them, as he believed there would be trade enough for all.

"The Railroads of Canada" was responded to by the Hon. John Molson, who reciprocated the friendly sentiments of Mr. Galt.

"The Mayor, Corporation and Citizens of Mon-

treil," was proposed by Mr. Young, the vice president, and was replied to by the mayor, who felt gratified that the city had taken so large an interest in the road. Mr. Leeming then gave the "Vice President and Directors of the Company," to which Mr. Young, being loudly called for, replied in becoming terms, humorously remarking, that they were now fairly "out of the woods," and nothing more would occur to prevent the road being opened to Sherbrooke in June, and to Portland by the close of next year.

The company then broke up and returned to Montreal.

Southern Railroad.

A strong effort is being made to extend the Southern railroad from Brandon, Mississippi, to Montgomery, Alabama, via Uniontown and Selma.—The distance to be built is about 200 miles, over one of the richest and most fertile sections of the south. In a few months, the above will be the only link wanting to a continuous line of railroad from the Lower Mississippi to the cities of Charleston and Savannah. That this link should have remained so long untouched, when its construction would add so much to the value of southern railroads, to the convenience of travel, and of the inhabitants along the line, is quite unaccountable. An efficient agent, W. S. Burr, Esq., of Selma, is now in the field acting for the company, and it is confidently believed that the effort now making to secure the construction of this work will be successful.

For the purpose of showing the effect of the extension of the Southern railroad from Jackson to Brandon, a distance of only 13½ miles, the cashier of the road, J. Roach, Esq., at the request of Mr. Burr, furnished a brief statement of its operations for a few years past. In this statement he says:—"The Brandon road, 13½ miles (from Jackson to Brandon), was opened for traffic on the 28th February, 1850; and it was predicted that it would draw of a large amount of the trade of Jackson, which heretofore had been the natural depot for Brandon. A comparison of the years 1850 and 1851 shows that so far from the trade of Jackson having declined, the quantity of every article has greatly increased, while the traffic to Brandon exceeds that of any other two depots on the road except Jackson. This is a case in point. Another fact can be given—about the 1st January, 1851, the Raymond railroad, worked by horses, running from our depot at Bolton's to Raymond, the county seat of Hinds, a distance of 7 miles, was put in operation. An examination of the quantity of freight sent to Bolton's depot in 1850 and 1851, will show a very large increase in favor of the latter year. During seven months only of the time has the Raymond road been in operation, and its facilities of transportation are not such as to develop the full effects of transit by steam."

The following table shows the number of passengers and number of bales of cotton for several years ending on the 1st of August:

	1848.	1849.	1850.	1851.
Number of bales.	51,797	59,682	29,878	55,880
No. of passengers.	20,533	26,261	35,098	41,488
No. of passengers reduced to the equivalent of passengers carried 1 mile.	604,873	730,086	949,191	1,085,000

The receipts of cotton for 1850 were small, owing to the shortness of the crop. It will be seen that the increase in passengers has been very large. The receipts of the road for the past year were

\$160,000, from 30 to 40,600 greater than the average of previous years.

Below we give the movement of some of the leading articles passing over for four years ending August, 1851.

	1848.	1849.	1850.	1851.
Iron, lbs. . .	344,451	1,387,997	1,835,701	908,698
Sugar, do. .	721,810	811,717	737,755	870,900
Sugar, bbls. .	3,350	2,923	3,214	5,065
Flour, do. .	8,197	10,436	10,657	20,945
Meat, lbs. .	1,811,628	1,687,588	1,949,558	3,466,011
Salt, sacks. .	8,285	10,462	8,690	10,723
Boxes and bales merchandise..	17,467	14,180	21,079	27,409
Packages of do.....	13,081	17,462	24,614	26,959

We hope that the feeling which is everywhere manifesting itself in favor of railroads in this state, will warm into life a project that promises a lucrative return upon its cost, and one that would confer an incalculable benefit upon the people of Central Mississippi and Alabama.

Michigan, Oct. 15th, 1851.

H. V. Poor, Esq.,

Dear Sir—Your correspondent H. B. W. in his communication to you of the 20th ult., gives distances from Buffalo west, which cannot be correct. He says the distance to Detroit by lake is 327 miles. Now the distance from Buffalo to Monroe, which is on the west shore of Lake Erie, is 232 miles, and from Monroe to Chicago by Michigan Southern railroad, 240 miles, making a distance of 472 miles from Buffalo to Chicago, on the Michigan Southern road.

The distance by the Canada and Michigan Central will be as follows:—From Niagara river to Detroit 227 miles, from Detroit to Chicago by Michigan Central 281 miles, making a distance of 508 miles, or a difference in distance in favor of the lake and Michigan Southern railroad of 36 miles.

Respectfully, yours,
W.

Ohio.

Cincinnati, Wilmington and Zanesville Railroad Company.—The object of this company is to build a direct line of railroad from Zanesville to the Little Miami railroad at Marion, and ultimately to Cincinnati. The road will probably pass through Somerset, in Perry county, Lancaster, in Franklin county, Circleville, in Pickaway county, Washington, in Fayette county, and Wilmington, in Clinton county. The distance from Zanesville to Marion is 126 miles; from Marion to Cincinnati 34, making the distance from Zanesville to Cincinnati 160 miles.

The estimated cost of the road is \$1,800,000.—The following counties have subscribed to the work, viz:—

Clinton.....	\$200,000
Fayette.....	100,000
Pickaway.....	200,000
Fairfield.....	250,000
Muskingum.....	100,000

Making.....\$850,000
county subscription.

In addition, nearly \$500,000 have been obtained in private subscriptions. Sufficient means having been secured to warrant the commencement of the work, it is the intention of the company, we learn, to advertise the road for contract by the first of January next. The friends of this road claim that it will form a part of the shortest line through Ohio. The following is their statement of distances by this route:

COMPARATIVE LENGTH OF VARIOUS ROUTES BETWEEN PHILADELPHIA AND CINCINNATI.

1st.—By way of Penn. and Ohio Railroad.		
Cincinnati to Springfield.	84	Miles
Springfield to Loudonville	110	"
Loudonville to Pittsburg.	150	"
Pittsburg to Philadelphia.	353	"
	697	Miles
2d.—By way of Marieta and Belpre Road.		
Cincinnati to Marietta...	188	Miles
Marietta to Wheeling...	80	"
Wheeling to Philadelphia via Hempfield railroad.	400	"
	668	"
3d.—By way of Columbus and Wheeling.		
Cincinnati to Columbus...	119	Miles
Columbus to Zanesville...	58	"
Zanesville to Wheeling...	82	"
Wheeling to Philadelphia	400	"
	659	"
4th.—By way of Steubenville and Pittsburg.		
Cincinnati to Columbus...	119	Miles
Columbus to Steubenville.	155	"
Steubenville to Pittsburg.	40	"
Pittsburg to Philadelphia.	353	"
	667	"
5th.—By way of Wilmington and Pittsburg.		
Cincinnati to Zanesville.	157	Miles
Zanesville to Coshocton.	30	"
Coshocton to Steubenville.	81	"
Steubenville to Pittsburg.	40	"
Pittsburg to Philadelphia.	353	"
	661	"
6th.—By way of Wilmington and Pittsburg, via Hohn's Run.		
Cincinnati to Zanesville.	157	Miles
Zanesville to Coshocton.	30	"
Coshocton to Pittsburg, via C. & P. R.R.	126	"
Pittsburg to Philadelphia.	353	"
	666	"
7th.—By way of Wilmington, Newcomerstown and Pittsburg.		
Cincinnati to Zanesville.	157	Miles
Zanesville to Newcomerstown (estimated).	38	"
Newcomerstown to Pittsburg.	105	"
Pittsburg to Philadelphia.	353	"
	653	"
8th.—By way of Wilmington and Wheelings		
Cincinnati to Zanesville.	157	Miles
Zanesville to Wheeling.	82	"
Wheeling to Philadelphia.	400	"
	639	"

As the subscriptions to the stock of this Co. are of the very best description, we have no doubt of the speedy construction of the road.

New-York.

Rochester and Syracuse Railroad.—The various railroads in this State which have, for any length of time, been in operation, have, with few exceptions, increased their receipts, compared with former years, as each succeeding statement has shown. This is truly gratifying, as a large amount of capital is invested in them, and holders of stock will reap, at the end of each six months, a fair interest on their investments.

The receipts of the Rochester and Syracuse railroad for the month of September, 1851, were.....\$114,458 85
Do. September, 1850..... 92,158 50

Increase.....\$22,300 35
under a reduction of fare of 33 1/3 per cent.

The present cost of this road is about \$4,300,000, upon which it pays semi-annually a dividend of five per cent. Should its receipts from August 1st, 1851, to Feb. 1st, 1852, average but \$100,000 per month, and its expenses and disbursements amount to that of the six months previous, which was \$194,264 86, it will make a surplus profit, after paying a dividend on the 1st of February of 5 per cent, of \$190,735 14.—*Albany Journal.*

For the American Railroad Journal.

Enlargement of the Erie Canal.

Without presuming in any manner to meddle with the political considerations which the question of the enlargement of the canal may have assumed, we wish to call the attention of our people to the subject of our western connections, for the purpose of pointing out the dangers which threaten alike the commercial interest of this city and the prosperity of the whole State, and to show the absolute necessity of our improving, to the utmost extent, all our means of communication with those sections from which we have drawn the trade, which has been the source of our present wealth and greatness. We have so long enjoyed a monopoly of western and southwestern trade, that we have almost entirely overlooked the cause of our prosperity, and we regard with entire indifference the efforts now making by our former rivals, to recover the trade they once possessed, and to turn again to themselves the mighty stream which now flows to New York.

Previous to the construction of the Erie canal, the Cities of Philadelphia and Baltimore were in complete possession of the trade of the west. It will now strike our readers as a remarkable fact, that previous to the opening of this work, the wheat of western and central New York was sent down the Susquehanna river, as the only practicable route to a market. At that time, the most direct and feasible route from this city to the western States was over the Pennsylvania and Maryland roads. So long as the goods continued to be forwarded over ordinary roads by wagons, the two former cities occupied positions vastly superior to New York, in reference to the general trade of the country, and consequently were in possession of a greater part of it, and would have maintained their advantage to the present day, had not the former slow, tedious and expensive mode of transportation been superseded by others more speedy and economical.

The city of New York, therefore, occupied a subordinate position to that of Philadelphia till the opening of the Erie canal. The opening of this great work at once turned the current of trade in our favor, which had flowed to that city. Its influence upon us was instantly felt; New York received a new impulse, and soon left her former rivals far behind in the race for commercial supremacy. The ordinary road, however direct, was found to be utterly unable to compete with water carriage. As railroads had not then come into use, both Philadelphia and Baltimore saw that the only mode by which they could recover their lost ground, was by the construction of works similar to the Erie canal. Such works were commenced upon a most liberal scale, but natural obstacles forbade a continuous water line from either of them to the Ohio. After expending vast sums, all idea of pushing the Chesapeake and Ohio canal beyond Cumberland was abandoned. In the Pennsylvania work, an important link had to be supplied by a railroad, with numerous inclined planes, rendering the cost of transportation too great to bring it into rivalry with the New York work, which, in spite of all the efforts of other States, controlled by far the largest portion of western trade.

This city has reached its present growth, and has become the commercial emporium of this continent, and the State its great superiority over all her sister States, in numbers and wealth, by means of the Erie canal. Up to the commencement of the present year, railroads may be said to have had but little influence upon our progress. The Erie

railroad, which was opened on the 14th of May last, was the first road in the United States opening a direct communication between the western waters and the seaboard. The Central line, from Albany to Buffalo, was virtually prohibited, by the imposition of the canal tolls, from carrying freight. Our commercial intercourse with the interior has been kept up entirely by means of the canal, which, as we have already said, has been the great instrument of our growth.

But a few years since, canals were regarded as the most perfect artificial means for the transit of our internal commerce. Modern science has given us a new medium in the RAILROAD, which has already, in most cases, superseded canals for almost every purpose of transit. No new canal projects are thought of. Many have been abandoned; and the work of construction is prosecuted only on a few lines, in hope of saving a portion of the immense sums already expended. If, therefore, the railroad, in the contest with canals, is to be the successful competitor, the monopoly enjoyed by New York is at an end. All our great Atlantic cities are to start anew in the race, and that one will bear off the palm which is most easily accessible by railroad (all other things being equal) from the greatest extent of territory. All are thrown back again to their original positions, and that one will win the race which can draw the greatest advantage from this new agent. Before railroads came into use, the routes of commerce followed as far as possible our leading water courses. With them, we are enabled to pay but very little regard to the natural configuration of the country.

Our enterprising neighbors at the east, were the first to turn this fact to account. As soon as they were able to form an accurate idea of the capacity of railroads for business, they made a bold push to turn to themselves the western trade, which all regarded as the great source of wealth. The lofty mountain ridge between Boston and the Hudson, was regarded as no barrier to their project. The result fully proved the sagacity of the leading minds to which Massachusetts owes so much. If they did not secure the prize for which they struck, it has been because New York resorted to a similar policy in self defence; and from the superiority of her location, has been enabled, as far as Boston is concerned, to maintain her position. They have found their reward in the local business of their roads, which in nearly every case has exceeded the amount anticipated from all sources. The railroads of Massachusetts have done but little more than develop her own resources, but they have done this to a remarkable degree.

We have the least to fear from the rival against whom we were first called upon to act. We have the advantage of distance, as far as every important portion of the country is concerned. With equal facilities for communicating with the interior, we can always maintain this advantage. It is in another quarter that our danger lies. The same fact that gives us the advantage over Boston, tends to give Philadelphia and Baltimore an equal advantage over New York. These two cities are now pushing their respective lines of railroad toward the Ohio river with extraordinary vigor and energy. That river will be reached in a little more than a year by both of them. These works have not yet progressed sufficiently far for us to feel their influence, and for this reason we have been scarcely conscious of the efforts making by our rivals to open their western connections, and we have no appreciation whatever of the entire confidence felt

by them in their ability to take from us our trade, when their works shall be completed. Let us look at the reasons upon which this confidence is based, and endeavor to ascertain what we have to fear from the completion of these rival works.

Upon comparing the several lines of railroad from New York, Philadelphia and Baltimore with each other, we may safely estimate the cost of transportation over each will be measured by the length of their respective lines. Let us take, then, some common point in the west—Columbus, Ohio, for instance—and see the relation that the cities named severally bear to that point.

Distance from New York to Columbus, Ohio, via the New York and Erie Railroad.

New York to Dunkirk.....469 miles.
Dunkirk to Cleveland, Ohio.....145 "
Cleveland to Columbus.....135 "

749 miles.

Distance from Philadelphia to Cleveland, via Hempfield route.

Philadelphia to Greensburg.....325 miles.
Greensburg to Wheeling.....80 "
Wheeling to Cleveland.....150 "

555 miles.

Distance from Baltimore to Columbus, by the Baltimore and Ohio Railroad.

Baltimore to Wheeling.....379 miles.
Wheeling to Columbus.....150 "

529 miles.

Showing the distance in favor of the Pennsylvania route to be 194 miles, and 220 in favor of the Baltimore route, and a saving of 104 to the traveller coming to New York, by taking the Pennsylvania route, and 24 miles in favor of the Baltimore route (the distance from this city to Philadelphia being 90 miles, and 188 to Baltimore). If, therefore, as we said before, railroads are to supersede canals as instruments for the transit of merchandise, what is there to prevent the cities last named from becoming the depots of western trade, and drawing from us a large portion of the trade which we now receive by the Erie canal? and still further, what is to prevent the travel between the east and the west from leaving our own roads, and taking the more direct and cheaper routes by way of Philadelphia and Baltimore?

We have assumed the fact, that the comparative cost of transportation from the several cities of N. York, Philadelphia and Baltimore, to Columbus, will be to each, in proportion to the distance of the several cities from the point named. Assuming, further, a rate of three cents per ton per mile, we have the following result:

From New York to Columbus, 749 miles,
at 3 cents per mile.....\$22 47
From Philadelphia to Columbus, 555 miles,
at 3 cents per mile.....16 65
From Baltimore to Columbus, 529 miles, at
3 cents per mile.....15 87

Making a difference of \$5 81 in favor of Philadelphia, and \$6 60 in favor of Baltimore. These cities have therefore every advantage over New York, in reference to western trade, except in the superiority of our harbor, and its easy access from the ocean—advantages by no means equal to the superiority of Baltimore and Philadelphia in other respects. If we rely, therefore, upon our railroads for the continuance of our business, and expect to maintain our present superiority by means of them alone, we are certainly leaning upon a support that must fail us. We submit this question to every candid man, whether there is any way of avoiding the conclusions to which we have come. They are

all based upon mathematical calculations, in which there can be no mistake.

Are we then, asks the reader, in danger of having our immense trade taken from us, and must New York again take a secondary rank among American cities? If railroads are to take the place of canals, there can certainly be no doubt that we are in imminent danger. Our intercourse with the west must to a great extent be through Philadelphia and Baltimore, and we ask whether in such case a large portion of the trade which now comes to us would not be retained in those cities. Would it incur the additional expense of coming to New York from 100 to 200 miles further, when the places we have named could offer equally favorable inducements?

There is but one answer to this. The canal has made us what we are, and it must continue to sustain us. This fact is demonstrable. As it is, we must suffer a great deal in the loss of those smaller and lighter articles of trade, in which cost of transportation bears but a small ratio to their value, and in those cases where a speedy transit is desirable. We must make up our mind to this. But if we will, we can still retain the great bulk of western trade. We can retain the great staples, by reason of the greater cheapness of transportation over our works. If we can do this, from the superiority of our position, and the excellence of our harbor, we retain our trade and maintain our superiority. The difference of a week in the transit of corn, flour, beef and pork from Ohio to the sea coast is but a trifling consideration. It amounts to the interest in the value of these articles for that length of time. But the difference of cost by railroad and canal so much greater than the paltry sum named, that with the prudent management of the Erie canal, it must continue to be for all time, as it has been, the great route of commerce between the east and the west, unless improvements are made in railroad locomotion beyond what we have now any conception.

To be continued.

The Hamilton Spectator states that the Ogdensburg route offers advantages to Canadian shippers and merchants which are not approached by any other line or means of conveyance. Heretofore all heavy goods, at least, have been shipped by the Erie Canal, and the steamers or sailing vessels on the lakes, and the ordinary time between New York and Kingston, Toronto, or Hamilton has been from three weeks to a month, never less than a fortnight. Now five days between N. York and Hamilton is all the time required for the transportation of the heaviest kind of freight. The idea that the expense of transshipment and of forwarding by railroad, must be heavier than by canal, is entirely erroneous. The charges are quite as low by railroad as by canal. Fifty cents a cwt. is the toll charged by all the canal forwarders on merchandise transported from New York to Hamilton, while the railroad agents have undertaken, and are fully prepared to forward it at the same rate.

The advantages offered by this new route can scarcely be overrated. A saving of from two to three weeks is effected; less risk is consequently incurred; and buyers in the seaport markets can remain at home that length of time longer during the most busy season of the year, and yet have their purchases home almost as soon as they can themselves return, and thus avoid all risks of breaks in the coals, and of having their goods frozen in,

as has so frequently been the case with late purchases heretofore.

The Spectator says that the New York merchants will participate even more largely in this improvement than Boston; and though an impression has gone abroad since the late jubilee at the latter city, that on account of its facilities for making speedy delivery, would divert a great portion of the Canadian trade, yet it is now rendered evident that New York can compete with Boston in this respect, and that Canadian purchasers will have no occasion to change their market.

St. Lawrence Canal.

The following is a comparative statement of upward and downward produce via St. Lawrence canal, of tolls for the years 1850 and 1851, from the opening of the navigation, to 30th September, inclusive:

	1851.	1850.
Total tons of produce.....	138,211½	89,323½
" number of vessels.....	4,573	3,654
" tonnage of ".....	335,677	278,652
" number of passengers.....	17,491	16,433
1851—Total amount of tolls		
and other dues.....	£15,477	18 9
1850—do. do. do. do.	12,393	19 8

The quantity of railroad iron which passed up the canal the present year was 21,269 tons, against 10,497 tons for the year 1849.

Notice to Contractors.

Atlantic and St. Lawrence Railroad.

THE Sixth and last Division of the Atlantic and St. Lawrence railroad will be placed under contract on the 10th day of November next, and proposals will be received until that date by the subscribers, at Sargeant's Tavern in the town of Northumberland, N. H.

Plans and profiles will be in readiness for examination at the Engineer's Office in Northumberland, on and after the 1st of November.

This Division extends from the Connecticut River in the town of Stratford, N. H., to the boundary line of Canada, a distance of about forty miles.

No Spirituous Liquors will be allowed on the work, and bids of contractors who have heretofore failed to pay their laborers, on this, or any other work, will not be considered.

Cash payments will be made monthly, reserving ten per cent. until the final completion of the contract.

JOHN M. WOOD & CO.

October 14th, 1851.

Railroad Iron.

THE undersigned offer for sale 1000 tons Railroad Iron, (about 56 lbs. to the yard,) now at Brooklyn.

CHOUTEAU, MERLE & SANFORD,
Oct. 1, 1851. 51 New st.

To Stone Masons.

THE NEW ALBANY AND SALEM RAILROAD Company have about 10,000 c. yards of Abutment Masonry to let at private contract, to be completed by the 1st of July, 1852.

To contractors who can produce testimonials of character for ability as STONE MASONS, fair, remunerating prices will be given.

Early applicants, by securing the work now offered, will gain advantages over competitors for the erection of an additional 15,000 yards, to be let out early next spring, in bridging the streams between Bedford and Michigan City, via Bloomington, Gosport, Crawfordsville and Lafayette, (the most productive and healthy region in Indiana,) by the knowledge they will have acquired of the resources of the country.

Application may be made in person, or by letter addressed to the undersigned, at New Albany, Indiana.

S. B. WILSON, Engineer.
Engineer's Office, New Albany, }
Sept. 29th, 1851. }

Railroad Iron.

THE undersigned are prepared to enter into contracts now at specific prices, to deliver Railroad Iron during the coming Winter and Spring, free on board at the shipping ports in Wales, or at ports in the United States.

CHOUTEAU, MERLE & SANFORD,
Sept. 30, 1851. No. 51 New st.

Notice to Bridge Builders.

PROPOSALS will be received at the Engineer's Office at Charlottesville, Va., on the 14th of November, for the construction of a bridge over Mechum's river, on the Virginia Central Railroad. The length of the Bridge will be 350 feet, in three spans. Height of Bridge above the river 70 feet. Bids will be received on Howe's plan and Town's lattice. The work to be finished by the first of July, 1852, but the timber to be procured at once. Plans and specifications will be ready to be exhibited on the 28th inst.

T. GOLDEN RUGGLES,
Civil Engineer Va. Central R. R.

Charlottesville, Oct. 11, 1851.

N. B.—Good timber may be procured in the vicinity of the line of the road, which will be in operation to a point 3 miles from the bridge.

SIX HUNDRED THOUSAND DOLLARS NORTHERN INDIANA RAILROAD 7 PER CENT MORTGAGE BONDS.

The Northern Indiana railroad company offer for sale \$600,000 of their 7 per cent. mortgage bonds with interest coupons annexed.

They are in sums of \$1,000 each, payable August the 1st, 1861, with interest at 7 per cent. semi-annually on the 1st of February and 1st of August, payable at the Mechanics' Bank in this city, where the principal is also payable, and are secured by a mortgage to Shepherd Knapp, Esq., of New York, in trust for the bondholders.

They are issued under acts of the Legislature of Indiana, authorising their issue and the mortgage as above, to secure the same. The amount of bonds to be thus issued under the mortgage, is limited to One Million of dollars, \$400,000 of which have been disposed of, and \$600,000 are now offered for sale.

The mortgage covers the whole road of the company in Indiana, and is the first and only lien thereon.

This embraces the entire line from its connection at the State line of Michigan with the Michigan Southern road (of which it is an extension) through Elkhart, Mishawaka, South Bend, and Laporte, to the boundary of Illinois, about 100 miles: a line to and from Michigan city of about 25 miles, connecting with the same, and a line of 10 miles from Elkhart to Goshen—making in all about 135 miles of road.

The company hold also, by lease and contract, a line from the western boundary of Indiana to Chicago, of about 13 miles.

By an existing contract between this company and the Michigan Southern company, a continuous line of railroads is formed from the head of Lake Erie, at Monroe and Toledo, in a very direct course through Southern Michigan and Northern Indiana to Chicago—a distance from Monroe of 246 miles, and from Toledo of 243—all to be under one superintendence and management, and for all practical purposes forming one joint interest.

At Chicago this line of road connects with the "Chicago and Rock Island road," to be extended to the Mississippi river, at Rock Island, 180 miles long, and which is under contract.

Also, with the Chicago and Galena railroad, about 84 miles of which is now about completed and in use, the entire line of which, it is expected will be completed to the Mississippi river in all next year.

Also, with the Illinois Central railroad, to run from Cairo, at the mouth of the Ohio river, to Chicago.

At Toledo it unites with the great chain of railroads along the shore of Lake Erie to Cleveland, Dunkirk and Buffalo. This whole south shore line will probably be completed in the course of the next season, and parts of it will be opened for use the present year.

The whole line of roads of this company is under contract; the grading and bridging on 60 miles are completed, and the rails laid on 50 miles of it. The iron has been purchased for the whole road from the boundary of Michigan to Chicago, and most of it is delivered on the line ready for use. The road is finished 30 miles to South Bend, to which point the cars are now running from Monroe and Toledo, and the work of laying down the rails is in active progress upon the residue of the line. The main line from the East to Laporte (some 56 miles) will be opened next month, and the whole road from Lake Erie to Chicago, in March next, when the journey from Lake Erie to Chicago, may easily be made in 8 hours.

The means for the construction and equipment of the Northern Indiana road are provided by stock and bonds.

Nearly one million of dollars are subscribed to the stock, about \$850,000 of which is taken in New York and the Eastern States, the remainder along the line of the road. An average of 50 per cent. has been paid on these subscriptions, and the residue is being regularly paid at the call of the company.

For providing the remaining means required to complete the work, the company have issued their Mortgage Bonds to the amount of one million of dollars in all, as above stated, proceeds of most of which are wanted to pay for iron rails, machinery, &c.

The mortgage empowers the trustee, in case of failure to pay either interest or principal, to take possession of the road, with its equipments, and receive its earnings, for to sell the same, on due notice, and apply the proceeds in payment.

That this road will prove one of great usefulness and profit will at once be seen by reference to a map of its line and connections, being an essential link in the great chain of railways from the city of New York to the Mississippi river along the southern extremity of the two great Lakes, traversing as it does one of the most productive agricultural regions in the United States, while its cost per mile will be less than one-half the usual cost of railroads of the same class in the Eastern States. As a local road alone, giving an outlet to the productive region it traverses, it is confidently believed that it will pay a large profit upon its cost without reference to its connections.

The proof of this is found in the earnings of the Michigan Southern railroad for the past five months which, until its connections are formed is to be regarded as a local road, and is of about equal length with the Northern Indiana road, and traverses a country not more productive, viz:—

For May, 1851, \$24,427	For August, 1851, 24,196
For June, do.... 22,511	For September, do, 35,217
For July, do.... 20,603	

Total..... \$126,954
It will be thus seen that the security offered is of the highest character.

Sealed proposals will be received for any amount not less than \$1,000, until the 12th day of November next, at 3 o'clock P. M.

Proposals may be addressed to WINSLOW, LANIER & CO., No. 52 Wall-street, or E. C. LITCHFIELD, Treasurer of the Company, No. 47 Beaver-st., indorsed "Proposals for Northern Indiana Railroad Bonds."

Twenty-five per cent. of the purchase money will be required to be paid immediately upon acceptance of the bids; and the remainder in equal payments on the 25th of November and the 10th of December next. Any purchaser will be at liberty to pay in full at once, and interest upon the bonds will run from date of payment.

Three hundred thousand dollars (one-half the amount now offered) will be disposed of absolutely and without reserve, to the highest bidders.

The company reserve the right to withdraw the remainder, if the offers are not satisfactory.

All necessary information in relation to the bonds together with maps, may be obtained by the calling on Winslow Lader & Co., or E. C. Litchfield, at either of which places copies of the bonds and mortgage may be had.

GEORGE BLISS JOHN STRYKER.
EDWIN C. LITCHFIELD, CALVIN BURR,
HUGH WHITE, Committee of the Directory,
New York, Oct. 20, 1851.

STATE OF NEW YORK.

SECRETARY'S OFFICE. ALBANY, August 27, 1851.—To the Sheriff of the County of New York. Sir:—Notice is hereby given that at the General Election, to be held in this State, on the Tuesday succeeding the first Monday of November next, the following officers are to be elected to wit:

A Judge of the Court of Appeals, in place of Samuel A. Foot.

A Secretary of the State, in place of Christopher Morgan.

A Comptroller, in place of Philo. C. Fuller.

A State Treasurer, in place of Alvah Hunt.

An Attorney General in the place of Levi S. Chatfield.

A State Engineer and Surveyor, in the place of Hezekiah C. Seymour.

A Canal Commissioner, in the place of Charles Cook.

An Inspector of State Prisons, in the place of Alexander H. Wells.

All whose times of service will expire on the last day of December next.

Also a Justice of the Supreme Court, for the First Judicial District, in the place of James G. King, whose term of service will expire on the last day of December next.

Also a Senator for the Third, Fourth, Fifth and Sixth Senate Districts, in the place of Richard S. Williams, Clarkson Crolius, James W. Beekman, and Edwin D. Morgan, whose term of service will expire on the last day of December next.

County officers to be also elected for said County. Sixteen Members of Assembly.

A Register, in place of Cornelius V. Anderson.

A Recorder, in the place of Frederick A. Tallmadge.

Two Judges of the Superior Court, in the place of Thomas J. Oakly and John L. Mason.

A Judge of the Court of Common Pleas, in the place of Daniel P. Ingraham.

A Surrogate, in the place of Alexander W. Bradford.

A Commissioner of Streets and Lamps, in the place of Jacob L. Dodge.

Two Governors of the Alms House, in the place of Simeon Draper and Francis R. Tilton.

All whose term of service will expire on the last day of December next.

Also, there is to be elected a Justice for each of the six Judicial Districts, into which the city of New York is districted, pursuant to Chap. 614, Laws of 1851.

Yours respectfully,

CHRISTOPHER MORGAN.

Secretary of the State.

SHERIFF'S OFFICE, AUGUST 25, 1851.—I hereby certify that the above is a correct copy of the notice of the general election, to be held on the Tuesday succeeding the first Monday of November next, received this day from the Hon. Christopher Morgan, Secretary of the State.

THOMAS CARNLEY,

Sheriff of the City and County of New York.

N.B.—All the public newspapers within this county will please publish this notice once in each week until the election, and send in their bills for advertising the same as soon as the election is over so that they may be laid before the Board of Supervisors, and passed for payment.

RAILROAD SPRINGS.**Fuller's India-rubber Springs.**

THESE are now made in our own Factory, of the best materials. Each spring is guaranteed to perform the required work. Purchasers guaranteed against adverse claims.

Car Builders will save great expense by calling at the office of the Company.

23 Courtlandt St., New York.

To Railroad Companies.

THE undersigned has discovered and patented an imperishable, cheap, and sufficiently elastic substance, to be introduced between the sill and rail, so that the stone sill can be used in place of the wooden sill: entirely overcoming that rigidity where the rail is laid directly on stone. Address

J. B. GRAY, Philadelphia.

July 10, 1851.

4m

Bridges & Brother, DEALERS IN RAILROAD AND CAR FINDINGS,

64 Courtlandt street, New York.

Having established a general Depot for the sale of articles used in the construction of Railroads, Locomotive Engines and Railroad Cars, we would invite your attention to our establishment. We have already in store a good assortment of CAR FINDINGS and other articles used in the trade, and feel justified in saying, that should you desire anything in our line, we can supply on terms perfectly satisfactory, and in the event of your desiring to order, you may feel assured that your terms will be as good as though you were here to make your own purchases.

Among our goods may be found Railroad Car Wheels, Axles, Jaws and Boxes, Nuts and Washers, Bolts, Brass Seat Hooks and Rivets, Window and Blind Springs, Lifters and Catchers, Door Locks, Knobs and Butts, Ventilators and Rings, Car Lamps, Coach and Wood Screws, Jack and Bed Screws and Babbitt's Metal; also Plushes, Damask, Enameled Head Linings, Cotton Duck for Top Covering in width sufficient without seams, Curled Hair and all other articles appertaining to cars.

Also a new and valuable CAR DOOR LOCK, well adapted to the Sliding Door. This is decidedly the best yet introduced.

LOCOMOTIVE ENGINE LANTERNS, the best article made in the country. Whistles, Gauge and Oil Cocks, Hemp Packing, American, Russian and Italian. We are also agents for Lightner's Patent Journal Box for Car Axles, that invaluable invention, for the economical use and preservation of Car Journals.

Coach VARNISH and Japan of the best quality.

We would also offer our services for the purchase as well as for the sale of goods on commission.—Both members of our firm have had the experience of many years in the manufacture of Railroad Cars, and our Senior was a member of the well known house of DAVENPORT & BRIDGES, Car Manufacturers, Cambridgeport, Mass. With our knowledge of matters pertaining to Railroads, we feel quite confident in giving satisfaction to both buyer and seller, and hope that through assiduity and attention to any business entrusted to our care we shall merit a continuance of confidence and patronage.

BRIDGES & BROTHER.

July 22, 1851.

Lightner's Patent Axle Boxes.

THE Undersigned are Agents for, and offer for sale, *Lightner's Patent Axle Boxes*, for Railroad Cars and Tenders, which have, by thorough experience, been demonstrated to be one of the most valuable improvements ever introduced in Locomotion. The saving effected in oil alone, will in a few months pay the first cost of these boxes, independent of other advantages. They are now in use upon the following, among other roads, viz:

Boston and Worcester, Boston and Providence, Boston and Fitchburgh, Nashua and Lowell, Providence and Worcester, Northern, N.H., Cheshire, Manchester and Lawrence, Concord, N.H., Concord and Claremont, Ogdensburg, (Northern, N.Y.) Stonington, New London Willimantic and Palmer, New Jersey Central, New Hampshire Central, Worcester and Nashua, Fitchburg and Worcester, Connecticut and Passumpsic, Lowell and Lawrence, Salem and Lowell, Wilton Branch, Newburyport.

Below will be found the certificates of a number of gentlemen, whose opinions will be good authority in every part of the country.

Office Boston and Prov. R. R.,
Boston, Dec. 28, 1849.

MR. JOHN LIGHTNER,

Sir,—It affords me pleasure to say, that after two years' trial of your boxes, I am fully and entirely satisfied of their superiority over any other pattern we have used. This superiority consists in economy of oil and freedom from "heating." I have tried every pattern of box in use, of any note, and do not hesitate to say, that you have devised one which in every respect combines greater advantages than any other within my knowledge; these advantages are so manifest, that I am fitting up all

our cars with your boxes, as fast as practicable.

Annexed, is a statement of an experiment with your boxes, the result of which may be of use to your interests.

Ten passenger cars, running 72 wheels, fitted up with Lightner's boxes used $41\frac{1}{2}$ pints of Patent Oil, at 50 cts. per gallon, ran 43,099 miles, equal to 5.18 pints per wheel for 43,099 miles. Speed, 30 to 40 miles per hour.

Very respectfully yours,

W. RAYMOND LEE, Supt.

I have examined the above statement of Mr. Lee, and fully concur with him in his opinion of the superiority of Lightner's box.

GEORGE S. GRIGGS,

Supt. Machine Shop B. & P. R. R.

Boston, July 26, 1849.

This is to certify that J. Lightner's axle boxes for railroad cars and locomotive tenders, have been in use on the Boston and Worcester railroad one year, and I unhesitatingly pronounce it, in my opinion, the best and most economical one in use, requiring less oil, of easy application, not susceptible of derangement, as in most kinds in use. When requiring repairs or renewal, the same may be done in one-fourth of the time usually occupied for that purpose. The box requires oiling not oftener than once a month—is kept quite free from dust, and consequently wears much longer than those generally in use.

D. N. PICKERING,

Supt. Motive Power, B. & W. R. R.

Office of Boston Locomotive Works,

December 12th, 1849.

The Boston Locomotive Company have been using J. Lightner's patent axle boxes under the tenders of their engines for several months, and find them more highly spoken of by the railroad companies that have used them in regard to economy in the use of oil, their durability and their ease of adjustment, than any other boxes which they have used. We therefore do not hesitate to recommend them to all railroad companies.

DANIEL F. CHILD,

Treas. Boston Locomotive Works.

Taunton Locomotive Works,

Taunton, July 7, 1849.

MR. H. F. ALEXANDER,

Dear Sir,—Your favor of yesterday came to hand in which you ask what success we have met with, in using Mr. Lightner's patent box for cars, engines, &c.

We have put it in use on the Boston and Providence railroad, New Bedford and Taunton Branch railroad, Central railroad, N. J., Norfolk County, Rutland and Burlington, and as yet we have not had one complaint from them; and from what we have used of it, and witnessed, we do not hesitate to say that it is superior to anything in use for that purpose. It is simple in its construction, and easy of access, and the reservoir is held close to the shaft, and the oil and journal is perfectly secure from dust; they will run from four to six weeks without replenishing the oil. The brass in the box is changed very much easier than by any other plan that we have seen.

Very resp. yours,

W. V. FAIRBANKS, Agent.

Office Providence & Worcester R. R. Co.,

Providence, Dec. 17th, 1850.

H. F. ALEXANDER, Esq.,

Sir,—The "Lightner patent boxes" for cars and locomotives have been in use under a portion of the passenger cars and engines of this company for upwards of two years, and have given very great satisfaction.

Though combining many excellent qualities, their great superiority consists in the economy of oil.

The result of experiments upon this road shows the consumption of oil by the use of this box, to be not more than one sixth part the quantity consumed by the use of the common box.

With the common box, eight passenger cars, 64 wheels, running 90 miles per day, consumed in 12 months 520 gallons of oil, being an average of 8 $\frac{1}{2}$ gallon per wheel per annum.

With the Lightner box the same cars running the same number of miles per day, during the same space of time consumed 73 $\frac{1}{2}$ gallons of oil, being an average of 1 $\frac{1}{2}$ gallon per wheel per annum.

So manifest are its advantages over any other box used by this company, it is intended to place it under all our cars as soon as practicable.

Besides the saving of oil, as they afford complete security from dust, we think them more durable than any other box in use.

Another advantage resulting from the use of this box is, cars run more easier than with the common box. The saving in fuel which it would effect, would of itself, we think be a sufficient inducement to use this box in preference to any other known to us.

Very respectfully,

ISAAC H. SOUTHWICK, Supt.

JOHN B. WINSLOW,

Supt. Machine Shop, P. & W. R. R.

Cambridgeport, April 5th, 1851.

H. F. ALEXANDER, Esq.

Sir,—This may certify that I have been engaged in the manufacture of railway cars since 1834, and have built for the different railroad companies cars of all descriptions to the amount of three millions of dollars, and have used on the above cars all kinds of journal boxes, and find that none give better satisfaction than the "Lightner patent box," both on account of the saving of oil and the arrangement for taking out and re-placing the composition by means of the sliding key, and other conveniences which no other box possesses.

Yours respectfully,

CHARLES DAVENPORT.

Worcester, March 17th, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—This is to certify that I have been for some years past engaged in building cars, and that I have tried most, if not all of the patent boxes, and have found Lightner's patent superior to all others as far as the saving of oil is concerned, also the ease with which they are fitted and exchanged in case they get out of order.

For the last three years, I have put them under all of the cars I have built, and in every instance they have given the most entire satisfaction.

Yours truly,

OSGOOD BRADLEY.

Office Union Works, So. Boston,

May 23d, 1851.

This certifies that I have applied Mr. J. Lightner's patent axle boxes to my locomotives and tenders for the past two years. I consider them superior to all others,—economical in their use, and possessing many important advantages not found in any other boxes.

SETH WILMARTH.

Office 15, R. R. Exchange, Boston,

June 1, 1851.

This is to certify, that we have known the success of Lightner's patent journal boxes upon various roads in New England the past three years, and have been led to examine their peculiar construction.—We are well satisfied of their merits, and have adopted them upon our small gravel cars, and take pleasure, as we ever have done, in recommending their use upon all roads where we are employed in the construction.

GILMORE & CARPENTER,

Contractors.

Amoskeag Manufacturing Co. Machine Shop,

Manchester, May 31, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—We are using the Lightner box on all the engines and tenders we build, and we are satisfied that it is the best box in use, and recommend the same to all those who purchase engines at our works.

Yours respectfully,

O. W. BAYLEY, Agt.

This is to certify that the Fitchburg railroad company having become satisfied of the superiority of J. Lightner's patent Axle Boxes for Railway Cars and Locomotive Tenders adopted the same

and are bringing them into general use upon their road.

One year's experience with the above improvement, has fully convinced me that there has never been anything offered to the public for that purpose which possess such intrinsic value; in fact, this is an improvement which seems to overcome all the difficulties found in all the various kinds now in use. It possesses very many advantages over all others: Some of which are [first] the first cost is much less than that of most boxes in use. [Secondly] 75 per cent is saved in oil; one gill applied to each Journal once a month, or one quart to an eight wheel car, is all these boxes require per month [Thirdly] no dust can gain access to the Journal, which is constantly lubricated with clean oil; hence the saving in repairs of Journals and composition bearings, is a matter of importance. [Fourthly], its construction is truly simple—not complicated, having nothing liable to become loose by constant and severe service. [Fifthly] for convenience there is nothing which approaches this improvement.—The composition bearings may be removed from the Journals of an eight wheel car, by one man, and returned, or duplicates, in twenty minutes, while under the car: the same would require two men, at least half a day with other boxes in use.—The trucks and wheels using these boxes, are free from oil and dirt, usually seen upon all railroad cars, at great expense to the corporation.

NATH'L JACKSON.

Supt. Car Building and Repairs, F.R.R. Co.

Boston, March 9, 1849.

I hereby certify, that I have examined a box for Car Journals, invented by Mr. Lightner of Roxbury, Mass., and I have thought so well of it that I have adopted it on our railroad, I have known of its success on other roads.

S. M. FELTON,

Supt. F. R. R.

Office of the Central R. R., N. J., }
Elizabethtown, May 1849. }

H. F. ALEXANDER, Esq.,

Dear Sir:—Your favor, [wishing to be informed how we liked Lightner's patent axle boxes for R.R. Journals,] has been duly received; in answer we would say, we have used the boxes on Locomotive tenders one year, more or less, and on our cars some six months. I consider them the best boxes in every respect, I have ever used, or even seen used on any other roads—for safety, durability and the economy pertaining to all the details connected with the boxes and Journals of R. R. Car wheels; and we shall adopt them upon this road.

Yours Respectfully,

JOHN O. STEARNS.

Supt. Central Railroad Co., N. J.

Manchester, N. H., Nov. }
1st, 1850. }

H. F. Alexander, Sir,

I have used "Lightner's Boxes" under all the Cars of the Manchester and Lawrence railroad, and feel no hesitation in saying that I think them to be the best boxes now in use.

Yours, &c.,

THEODORE ATKINSON, Agent.

Cheshire R. R. Office, Keene, }
March 5th, 1851. }

Mr. H. F. Alexander,

Sir,—Lightner's Patent Boxes have been used on the Cheshire R. R. about a year, and have given the highest degree of satisfaction.

All the Passenger Cars now in use, and a considerable number of Merchandize Cars are furnished with them, and they will take the place of the Common Boxes on all the cars as fast as circumstances will permit.

Very Resp't.

L. TILTON,

Supt. Cheshire R. R.

Boston and Worcester Railroad, }
Boston, April 1st, 1851. }

H. F. Alexander, Esq.,

Dear Sir,—Lightner's Patent oil saving box for railroad cars, has been adopted by this corporation; we are taking out the common and substituting the

Lightner's at the rate of fifty boxes per month; it will soon take the place of all others, as it is decidedly preferable to any heretofore used by this corporation.

G. TWITCHELL, Supt.

Statement of amount of oil used on 32 8-wheel freight cars, on the Boston and Providence Railroad (with Lightner's Boxes) from March 10, 1849, to February 27, 1851, and upon 12 8-wheeled passenger cars from September 8, 1849, to February 27, 1851.

FREIGHT CARS.

Amount Oil.	No. months.	Amount Oil.	No. months.
1.—21 pts.	10	17.—23½ pts.	14
2.—19 "	6	18.—23½ "	11
3.—25 "	13	19.—36 "	21
4.—18 "	7	20.—22 "	10
5.—22 "	12	21.—38½ "	24
6.—24 "	13	22.—29 "	23
7.—20 "	11	23.—35½ "	23
8.—21 "	11	24.—37½ "	23
9.—23½ "	10	25.—51 "	23
10.—21 "	9	26.—31½ "	24
11.—20 "	9	27.—28½ "	23
12.—21½ "	11	28.—36 "	23
13.—19 "	8	29.—50½ "	24
14.—25½ "	17	30.—50 "	23
15.—20½ "	10	31.—41 "	23
16.—31 "	18	32.—39½ "	23

Total, 925½ pts. 510

PASSENGER CARS.

1.—19½ pts.	18	7.—30 pts.	18
2.—25½ "	18	8.—25½ "	18
3.—33½ "	16	9.—29 "	18
4.—19 "	15	10.—46½ "	17
5.—15 "	15	11.—9 "	9
6.—22 "	18	12.—65½ "	17

Total, 340 pts. 197

Averaging 1 4-5 pints of oil for freight, and 1 7-10 for passenger cars per month only!

All orders and enquiries promptly attended to.

BRIDGES & BROTHER,

No. 64 Courtlandt st., New York.

July 25, 1851.

Trautwine on R. R. Curves.

By JOHN C. TRAUTWINE, Civil Engineer,
Philadelphia, Pa.

JUST published, accompanied by a Table of Natural Sines and Tangents to single minutes, by means of which all the necessary calculations may be performed in the field.

This little volume is intended as a field-book for assistants; and will be found extremely useful, as it contains full instructions, (with wood cuts) for laying out, and adjusting curves; with Tables of Angles, Ordinates, etc., for Curves varying from 13 miles, down to 146 feet Radius.

A portable Table of Natural Sines and Tangents to minutes, has for a long time been a desideratum among Engineers, independently of its use in laying out curves.

The volume is neatly got up in duodecimo; and handsomely bound in pocket-book form.

Sold by Wm. Hamilton, Actuary of the Franklin Institute, Philadelphia. Price \$1.

Also in press, and will be issued in a few weeks, "Trautwine's Method of Calculating Excavation and Embankment."

By this method, which is entirely new, (being now made known for the first time) the cubic contents are ascertained with great ease, and rapidly, by means of diagrams, and tables of level cuttings. Thin octavo; neatly half bound, \$1. For sale by Wm. Hamilton.

June 28, 1851.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff St.

CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by POWERS & WEIGHTMAN, manufacturing Chemists, Philadelphia.

Jan. 20, 1849.

To Chief Engineers, Directors of Railroads, Canals, etc.

A Civil Engineer and Surveyor, who has been professionally engaged under the British Government, East India Company, etc., is desirous of obtaining employment as an Assistant. No objection to the South or West. Address for one month to C. E. & S., American Railroad Journal office.

August 16, 1851.

To Engineers.

A NEW WORK on the Marine Boilers of the United States, prepared from authentic drawings, and illustrated by 70 engravings, among which are those of the fastest and best steamers in the country, has just been published by B. H. Bartol, Engineer, and is for sale at the store of

D. APPLETON & CO.,

Broadway.

September 1, 1851.

Pneumatic process for making Foundations for Bridges, Piers, etc.

THE Attention of Engineers, Contractors, and Bridge Builders, etc., is directed to this method of forming secure foundations. Hollow cylindrical piles from 8 inches to 10 feet in diameter may be sunk through sand, mud, clay, etc., to any required depth, and filled with concrete or masonry.

The efficacy and economy of the process has been demonstrated in the construction of numerous permanent works, at a much less cost than the use of any other method. (See evidence in Parliamentary enquiry, Railroad Journal, April 19, 1851.)

Contracts made, or licenses granted for the use of the invention in any part of the United States, by

CHARLES PONTEZ,

34 Liberty street, N. Y.

LOWMOOR IRON.

THE LOWMOOR IRON COMPANY having appointed Wm. BAILEY LANG their sole agent in America and Canada, he is now prepared to receive and execute all orders for Railway Tire Bars, bent, welded, and blocked Railway Tires, Axles, Piston Rods, and Boiler Plates. Also, plain, angle, rivet and every other description of Lowmoor Iron.

All communications respecting the above are requested to be sent to Wm. Bailey Lang, at his Steel Warehouse, No. 9 Liberty Square, Boston, or to the Lowmoor Iron Works, Bradford, Yorkshire, England.

30th Sept., 1851.

RAILROAD SPRINGS.

Fuller's Patent India-rubber Springs.

PRICE reduced to 50 cents per pound. The owners of this Patent now manufacture the Springs in their own Factory, and guarantee that each spring shall perform its required duty.

Purchasers guaranteed against adverse claims. They may have full confidence in the working qualities of the springs.

The suits brought against Ray & Co., will soon be brought to issue, and we await the result with satisfaction, having full confidence in the pure administration of the Laws.

The long advertisements put forth by Ray & Co. about prior invention of the spring are worthless; he has not proved prior invention, and cannot sustain his patent in a Court of Law.

For the owners of Fuller's Patent,

G. M. KNEVITT,

23 Courtlandt st., New York.

October 7, 1851.

Railroad Iron.

THE undersigned, Agents for British Manufacturers, continue to sell Railroad Iron of the best quality, and of any weight or pattern required; deliverable at any part of the United States or Canada.

They have now on hand, ready for delivery at New York:

2,000 tons of an approved pattern, weighing about 60 lbs. to the yard.

WM. F. WELD & CO.,

42 Central Wharf, Boston.

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HENRY CAREY BAIRD,

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Now being published in Twelve Parts, price 25 cents each, the **PRACTICAL MODEL CALCULATOR**, for the Engineer, Machinist, Manufacturer of Engine work, Naval Architect, Miner and Millwright.—By Oliver Byrne, Compiler and Editor of the Dictionary of Machines, Mechanics, Engine Work and Engineering, and Author of various Mathematical and Mechanical works—illustrated by numerous Engravings; forming, when completed, one large volume, octavo, of nearly 600 pages.

It will contain such calculations as are met with and required in the Mechanical Arts, and establish models or standards to guide practical men. The tables that are introduced, many of which are new, will greatly economise labor, and render the everyday calculations of the *practical man* comprehensive and easy. From every single calculation given in this work other calculations are readily modeled, so that each may be considered the head of a numerous family of practical results.

The examples selected will be found appropriate, and in all cases taken from the actual practice of the present time. Every rule has been tested by the unerring results of mathematical research, and confirmed by experiment, when such was necessary.

The Practical Model Calculator, will be found to fill a vacancy in the library of the practical working man long considered a requirement. It will be found to excel all other works of a similar nature, from the great extent of its range, the exemplary nature of its well selected examples, and from the easy, simple and systematic manner in which the model calculations are established.

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American Miller and Millwright's Assistant, By W. C. Hughes. 12mo., illustrated.	\$1 00
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Painter, Gilder, and Varnishers' Companion. New edition, 12mo., cloth.	75
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Steam for the Million. 8vo., paper.	37

THE Fourth Annual Exhibition of AMERICAN MANUFACTURES, by the MARYLAND INSTITUTE for the Promotion of the Mechanic Arts, will be opened in Baltimore on the 20th October, 1851.

The Exhibition will be held in the **SPLENDID NEW HALL** of the Institute, (fronting on Baltimore street) now being rapidly completed. Their edifice is centrally situated, chaste in its architecture, solid in its construction, and is by far the largest and most complete building in the United States, devoted to the Mechanic Arts. It may be added that this building is 355 feet long by 60 in breadth, with an average height of 68 feet, containing some twelve apartments, the largest of which is 255 feet by 60, and that the cost will be over \$70,000.

To this Exhibition, the Managers ask the attention of all engaged in industrial pursuits throughout the country, and cordially invite them to contribute specimens of their best productions for public inspection, and to compete for the prizes offered by the Institute. These prizes consist of **GOLD and SILVER MEDALS, DIPLOMAS, etc.**, which were last year distributed as follows:—*Gold Medals, 16; Silver ditto, 90; Diplomas, 60;* besides 85 articles of Jewelry, etc., to ladies. *Fair play will be scrupulously observed towards all, and every facility of Steam power, shafting, fixture, labor, &c., &c., will be amply provided free of expense.* The machinery will be under a special superintendent, and a fine display of it is looked for. The last exhibition of the Institute was visited by more than 40,000 persons, and with their vastly improved accommodations and alterations, this number will be doubled at the coming display, embracing many Virginians, Pennsylvanians, and other strangers from the South and West.

Joshua Vansant, President.

Ed. Needles, } Vice Presidents.

F. A. Fisher, }

Samuel Sands, Rec. Sec'y.

Wm. Prescott Smith, Cor. Sec.

F. J. Clare, Treasurer.

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(The last nine in *Italics* are the Committee on Exhibition.)

The Hall will be opened for the reception of goods on **MONDAY, 13th October**; on the next Monday, 20th, at 7 P. M., the Exhibition will be formally opened to the public, and will positively close on **Wednesday, 19th November**. Articles for competition must be in the Hall by **Thursday night, Oct. 16, unless delayed in shipment after starting in ample time.**

Those who intend depositing, will give the Committee or the Agent, notice as early as possible, stating the nature of the goods, and probable amount of room required, to exhibit them to advantage.

Circulars, containing a view of the new Hall and the full regulations of the Committee, with special information, if required, may be had promptly, by addressing the undersigned, or the Institute's Agent, J. S. Selby, Baltimore, post-paid.

ADAM DENMEAD,

Chairman Com. on Exhibition for 1851.

SUPERIOR BLACK WRITING & COPYING INK.

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87 Nassau st., Sun Building, New York city.

Net prices to the trade—

Quarts, per dozen,	\$1 50	6 oz. per dozen,	\$0 50
Pints, " "	1 00	4 " " "	0 37
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On draught per Gallon, 20 cents.

This is the best Ink manufactured. It flows freely, is a good copying ink, and will not mould, corrode, precipitate or decay. Orders for export, or home consumption, carefully and promptly attended to by

21st

THEODORE LENT.

To Railroad Companies, etc.



The undersigned has at last succeeded in constructing and securing by letters patent, a **Spring Pad-lock** which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

I also invite attention to an improved **PATENT SPRING LOCK**, for **SLIDING Doors to Freight and Baggage Cars**, now in use upon the Pennsylvania Central, Greenville and Columbia, S.C., Reading, Pa., and other Railroads.

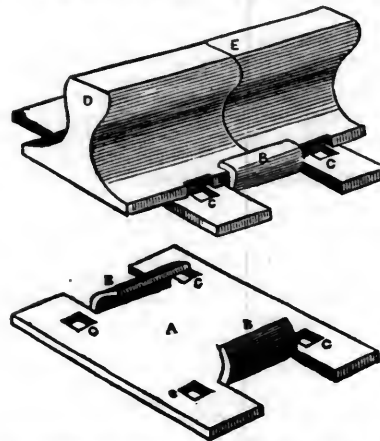
Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH,

46 South 8th St. Philadelphia.

May 9, 1851.

The American Railroad Chair Manufacturing Co.



ARE prepared to make **WROUGHT IRON RAIL ROAD CHAIRS**, of various sizes, at short notice.

By use of the **WROUGHT IRON CHAIR**, the necessity of the wedge is entirely done away—the lips of the chair being set, by means of a sledge or hammer, close and firmly to the flange of the rail.

The less thickness of metal necessary in the Wrought Iron Chair gives much greater power and force to the spikes when driven—and consequently a much less liability to the spreading of the rails by reason of the spikes drawing or becoming bent.

The less weight necessary in the Wrought Iron Chair, will enable us to furnish them at a cost much below that of **CAST IRON CHAIRS**.

DESCRIPTION OF THE ABOVE CUTS.

Figure 1 is a perspective view of the rail secured in the chair, and fig. 2 is a perspective view of the chair itself. D, E, are sections of two rails placed together, and secured at the joint on the chair by the jaws B, B. The chair is bolted down by spikes C, C. In fig. 2, the chair is represented as made of a single block or plate A of wrought iron.

The chair is set in its proper place on the track, spiked down, and the ends of the two rails brought together within the jaws as represented in fig. 1.

For further information address,

N. C. TROWBRIDGE, Secretary,
Poughkeepsie, N. Y.

June 1, 1851.

Railroad Commission Agency.

THE Subscriber offers his services to Railroad Co's and Car Makers for the purchase of equipment and furniture of roads and depots and all articles and materials required in the construction of cars, with cast or approved credit. No effort will be spared to select the best articles at the lowest market price.

He is sole Agent for the manufacture of the **ENAMELED CAR LININGS**, now in universal use. The best Artists are employed in designing new styles, and he will make to order pieces with appropriate designs for every part of the car, in all colors, or with silver grounds and bronzed or velvet figures.

He is also Agent for Page's Car Window Sash Fasteners, which is preferred by all who have used it to any other.

CHARLES STODDER,

75 Kilby st., Boston.

June 20, 1851.

3m.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 136 NASSAU ST., NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.
SECOND QUARTO SERIES, VOL. VII., No. 44! SATURDAY, NOVEMBER 1, 1851. [WHOLE No. 811, VOL. XXIV.

PUBLISHED BY J. H. SCHULTZ & Co., 136 NASSAU ST.

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American Railroad Journal.

Saturday, November 1, 1851.

Canada.

Quebec and Richmond R. R.—We have received a copy of a report of a survey of the route of this proposed road, by A. C. Morton, Esq. The instructions to Mr. Morton contemplated the crossing of the St. Lawrence, either at Pt. Platon or St. Nicholas, the former 35 and the latter 8½ miles above Quebec, and the building of a portion of the road on the north bank of the river. After leaving Richmond, the country is favorable to a railroad, and it is only when the river is approached, that serious difficulties are met with. They were so serious in the Pt. Platon route, as to lead to its abandonment, and the report is based upon a survey of the former.

By this route the whole distance from Richmond to Quebec is 101½ miles. The cost of construction is estimated at \$2,072,200. In descending from the table lands a great deal of heavy work is required. The total amount of earth excavation on the line is stated at 2,234,000 yards, and 209,000 yards of rock excavation. A maximum grade of 70 feet to the mile is necessary in ascending from the river. The unfavorable character of this route, and the

objection to two distinct lines of railroad, made necessary by crossing the river, determined the company to institute further surveys, with the view of ascertaining the practicability of a route entirely on the south side of the St. Lawrence, and entering the valley of that river opposite Quebec. This survey was conducted under the direction of R. T. Bailey, Esq. The line surveyed by Mr. Bailey, leaves the line already described, at Black river, 18 miles from Point Levi opposite Quebec, and 79 miles from Richmond, and crossing the Richelieu and the Etchemin rivers, reaches through the depression caused by the latter stream, the level of the St. Lawrence. The distance saved by this route over the one surveyed by Mr. Morton, is 4½ miles. The maximum grade is only 50 feet, against 70 on the other, and the difference in cost is £48,012 in favor of the route last surveyed. Another inducement to the adoption of this route, is the fact, that in case the Halifax and Quebec road should be built, of which there is a strong probability, a convenient connection could be formed, and the Quebec and Richmond road would become a part of the great trunk line through the Provinces. Influenced by these considerations, the directors of the company adopted the modification of the route as surveyed by Mr. Bailey, and urge upon the citizens, and the corporation of Quebec, the immediate commencement of the work of construction.

The amount of means provided for the road is £25,000 of private subscriptions, and £100,000 of expected subscription by the corporation of Quebec. We also learn that the company have an offer of a private subscription from the *States* of £62,500, making an aggregate of £187,500. The government guarantee will be available for one half the cost of the road, so that if the above subscriptions can be relied upon, the company are in good condition to commence work.

The road is an exceedingly important one to Quebec, as that city occupies an isolated position, and is shut out, for nearly six months each year, from all intercourse with the commercial world.—The fact that Quebec is to be the political capital of the Canadas for the ensuing four years, will give great strength to this enterprise. We have no idea that the government of Canada, and the city of Quebec, will be content to remain without a road, which would connect that important city with the railroad system of Canada and the United

States. The commercial importance of the road will hardly exceed that derived from the pleasure travel which will be attracted over it to Quebec and the vicinity, and in return to the White Mountains via the Atlantic and St. Lawrence railroad.

Toronto and Lake Huron Railroad.—The ceremony of commencing work on this road took place on the 15th inst. The ceremony of turning the sod was performed by the Countess of Elgin, who, with a silver spade, of the ordinary size, took up a piece of earth and deposited it in a barrow, which His Excellency wheeled to a distance. The spade was presented to her by Mr. DeWitt, the Chief Engineer.

Great Western Railroad.—To enable the Great Western Canadian railroad company to carry out the project of building a road to commence at the Suspension Bridge, at Niagara Falls, and to terminate at Windsor, on the Detroit river, opposite to Detroit, it was voted by the Central line of roads of this State, a short time since, to subscribe for the stock to the amount of \$500,000, to be divided as follows:

Albany and Schenectady company.....	\$25,000
Utica and Schenectady company.....	200,000
Syracuse and Utica company.....	75,000
Rochester and Syracuse company.....	125,000
Niagara Falls company—who connect with Canada.....	75,000

Total \$500,000

The directors of the Utica and Schenectady company have issued circulars, calling upon its stockholders for permission to make the subscription.

The Great Western road will be 227 miles in length, and is estimated to cost \$5,000,000. The Provincial government guarantees the payment of the interest on the bonds of the company, at 6 per cent annual interest, for one half the cost of the road.

The capital authorised by law is.....\$6,000,000
Estimated cost of construction..... 5,000,000

Municipal subscriptions raised in Canada.....	\$550,000
Private do. do.....	300,000
Contractors stock.....	800,000
American subscriptions.....	1,000,000

Total stock.....\$2,650,000
Provincial 6 per cent guarantee bonds.. 2,650,000

\$5,300,000

The distances by the different routes from New

York city through our State to Michigan city, at the head of Lake Michigan, a point common to the routes on both sides of Lake Erie, is as follows:

By way of Detroit, the proposed route, Albany, Niagara, and the Gt. West- tern road.....	899 miles.
By way of the Erie railroad, Dunkirk and Toledo.....	925 "
By way of Albany, Buffalo and Toledo.....	952 "
Estimate of gross annual receipts.....	\$850,000
Estimate of cost of operating the road	\$350,000
Six per cent on \$2,500,000 bonds. 150,000	
Twelve per cent on \$2,500,000 stock	300,000
	<hr/> 800,000

Leaving a surplus of..... \$50,000

Buffalo and Brantford Railroad.—The object of this road is to connect Buffalo with the Gt. Western railroad of Canada at Brantford, 75 miles from Fort Erie, opposite the former place. We learn that the grading and bridging of the whole line has been contracted for by Mr. A. DeGraff, of Dayton Ohio, who is to prepare the roadbed for the iron. for \$400,000. The road is of easy construction—the maximum grade being only 30 feet to the mile.

The Railway to Richmond.—We are glad to learn that hope is reviving as to the commencement of this much desired work. It is now stated that parties in Portland are willing, and have even authorised Mr. Morton to take stock to the amount of £62,500. We wait with anxiety for our city council taking definite action in this important enterprise.—*Quebec Gazette.*

Patent Law.

Opinion of Judge Kane, delivered before the United States District Court, Pennsylvania, in the Case of Detmold vs. Reeves, on a Motion for an Injunction, September, 1851.

This is an application for a special injunction to restrain the defendants from further violating the complainant's patent.

The complainant, Mr. Detmold, is the assignee, and as such, the patentee in this country of an invention made by Mr. Faber du Faur, and patented by him in 1840 and 1841, in Bavaria and Wurtemberg. The American patent was issued in 1842, but it was amended and re-issued in 1845.—It is for "a new and useful invention for generating and applying heat;" and its immediate subject is a new mode of collecting, conducting, and using the combustible gases that ordinarily escape from the tunnel head of the blast furnace. The defendants are extensively engaged in the manufacture of iron, and it is charged that they are availing themselves of a part of the patented invention.

The interests which are involved in the controversy are very large, and may be seriously affected by the action of the court on the present motion. The argument, therefore, has had the widest range—embracing the originality of the patented invention, its practically useful character, its identity in principle with the apparatus employed by the defendants, the right of the inventor and his assignee to protection under the Patent Laws, the regularity of the proceedings of re-issue, and their legal effect, as well as the policy of postponing the summary relief, which it is the province of equity to administer, until after an adjudication of the merits by a court of law. But of these questions, which were argued by the learned counsel on both sides with characteristic ability, there is only one, after all, which, on a careful review of the whole ground, I deem it necessary to decide.

The claim of the complainant, as it has been expounded by his counsel in the present case, is for "a new method of economizing fuel, by using the waste combustible gases of the upper portion of the blast furnace, by drawing them off below the upper level of the charge, and conducting them through convenient passages to other fire-places or structures, there to be burned as fuel." It does not assert an exclusive right to the use of gases from the tunnel head, nor to the employment of pipes or tubes for conducting gases; and very properly, for both of these were long ago familiar to the arts; its

essential characteristic is, that the gases are to be withdrawn "below the upper level of the charge."

Can such a claim be legitimately deduced from the terms of the patent before me? This is the controlling question of the cause.

The descriptive language of the specification does not designate, as the place of taking off the gases, a point "below the level of the charges;" an expression that would apply equally well to any and every such point; but one, "at or near that point of the furnace, where the limestone employed as a flux is completely calcined, and the reduction or deoxygenation has not yet commenced;" and this point, it adds, "will generally be at about one-third of the height of the whole furnace below the tunnel head, or two-thirds above the bottom stone."

It is true, that the formal claim at the close of the instrument speaks of drawing off the gases at "one or more points below the top of the fuel;" and if the expressions *fuel* and *charges* can be regarded as convertible, this would certainly countenance the exposition of the complainants counsel. But it does not stand alone; and it cannot be interpreted fairly without giving effect to the words that follow it: "substantially as set forth in the above specification." There is then an important qualification of the broad language of the claim;—one that limits and defines it by a reference to the description that has gone before; and when the two parts are taken together, as they must be, they do not import the withdrawal of the gases from below the top of the charges generally, at any and all points whatsoever; but specially from at or near that point below the top of them, at which the flux has been calcined, and the deoxygenation is about to begin.

The explanatory or practical reference, which is added in the specification, to a point one-third below the top of the furnace, makes this even more plain. For the indication of a point, ascertainable by simple measurement, as the one that will in most cases conform to the structural arrangement to the rule deduced from scientific principle, is almost a declaration in terms, that the patentee had in view a *particular* point, and did not mean to apply his claim to all points below the charges alike.

So far, then, as the motion for an injunction asserts as its basis, that the defendants are using a device which has been specifically described and claimed in the patent, it cannot be sustained; since it is conceded that the defendants do not take out the gases "at or near the point at which the calcination is perfected, while the deoxygenation has not yet begun;" nor at or "about one-third of the height of the tunnel," measured from the top. But the question still remains, whether the defendants are not violating the patent substantially; deriving from it information essentially connected with its subject matter; and only so far varying their structure in form and proportion as to elude its terms.

There is no doubt, that he who has discovered some new element or property of matter, may secure to himself the ownership of his discovery, so soon as he has been able to illustrate it practically, and to demonstrate its value. His patent, in such a case, will be commensurate with the principle which it announces to the world, and may be as broad as the mental conception itself. But then the mental conception must have been susceptible of embodiment, and must have been in fact embodied in some mechanical device or some process of art. The abstract must have been resolved into the concrete. The patent must be for a thing, not for an idea merely.

This limitation, it may be said, denies to some of the more important products of mind, what it concedes to others of lower grade. But it is not the less true on that account. Men may be enriched or made happy by physical as well as by moral or political truths, which, nevertheless, go without reward for their authors. He who devised the art of multiplication could not restrain others from using it after him, without paying him for a license: The miner who first found out that the deeper veins were the richer in metal, could not compel his neighbor to continue digging near the surface.

The more comprehensive truths of all philosophy, whatever specific name we give to it, cannot be specially appropriated by any one. They are

almost elements of our being. We have not reasoned them out perhaps, and may even be unconscious of their action; yet they are about us, and within us, entering into and influencing our habitual thoughts and pursuits, and modes of life, contributing to our safety and happiness; and they belong to us as effectively as any of the gifts of Heaven. If we could reach the laws of nature, they would be, like water and the air, the common property of mankind; and those theories of the learned, which we dignify with this title, partake, just so far as they are true, of the same universally diffused ownership. It is their application to practical use, which brings them within the domain of individuals; and it is the novelty of such an application, that constitutes to it the proper subject of a patent.

But the contract of the public is not with him who has discovered, but him who also makes his discovery usefully known. If he has discovered much, and discloses little—if there has been revealed to him one of the *arcana* of nature, and he communicates to the world only some one or more of its derivative and secondary truths, he patents no more than he has proclaimed. He will not be allowed afterwards, when the extent of his right shall be the subject of controversy, either by expanding into a general expression what was limited before in a particular form, or by tracing out for us the line that leads back from consequences to their remoter cause, to initiate us inferentially into the radical history of his invention, and then argue that he had described it by implication from the first, and so claimed ownership of it in his patent.

If, as it had been contended with great apparent force, M. Faber du Faur was really the discoverer of the true theory of the Blast Furnace, so as to determine from it the point at which the carbonic oxide, having performed its chemical function, might be withdrawn without sensible injury; if he knew that the gases, when taken from openings nearer the boshes, were capable of more intense combustion, but that their withdrawal so low down impoverished the action of the furnace, and that when used at the tunnel head, after they had performed successively the offices of deoxygenating the mineral, calcining the flux, and vaporizing the water of the charges, they were less available as fuel in consequence of their increased impurity;—and, if knowing this, he had taught the iron master how to choose the best place for withdrawing the gases, having reference to the dimensions of his furnace, and the different sorts of fuel and mineral and flux employed in it, and with reference also, perhaps, to the purpose for which the flame of the gases was to be applied after they had been withdrawn; no one can doubt that he would have conferred a signal benefit upon the arts of the world. And if he had, besides this, devised some form of structure, some material arrangement, by which his discovery might be applied to use, I would be most reluctant to say, that his patent, properly drawn out, should be limited to the mere mechanical illustration, and could not cover effectually the whole ground of his discovery.

But M. Faber du Faur and his assignee, Mr. Detmold, have not done this. They have announced no new principle of science, no natural law. They indicate to us the place at which the gases should be taken out, first, by reference to a scientific problem, which they leave unsolved, and next, by a proximate reference to mechanical measurement. There is not, so far as my inquiries have gone, anything less definitely settled among the skillful in these matters, than the point at which the calcination of the flux is completed, and the deoxygenation of mineral begins. Some deny altogether that any one point can ever satisfy both of the conditions, for they assert that the reduction always begins before the calcination is perfected; and all concur that the point, if there be one, must vary with the form and proportions of the furnace, and the chemical elements of the ore, the flux, and the fuel, and that it is, moreover, affected sensibly by atmospheric changes.

This indication is too vague, therefore, and under the varying circumstances, to which it must be applied in practice, too erroneous also, to vindicate for the patented discovery the broader or generic character.

The other indication, which refers to a propor-

tionate distance from the tunnel head, "one-third or thereabouts," is merely specific.

The interpretation, therefore, which I am constrained to give to the part of Mr. Detmold's patent, which is involved in the present discussion, limits his claim to the formal arrangement, without an assertion of right to any dominant principle. The defendants have perhaps derived instruction from his descriptions, and may even to some extent have modelled their furnace, with its appendages, upon a theory which they suggested. But it does not appear to me that they are intruding or have infringed his patent.

The motion for injunction must be dismissed.

Messrs. Harding, Campbell, Hazlehurst, and Cadwalader, for the motion. Messrs. Sheppard, Gerhard, Meredith, Williams, and Mallery contra.

Ohio and Pennsylvania Railroad. AN EXCURSION.

Yesterday we had the pleasure of making an excursion on the Ohio and Pennsylvania railroad to a point about ten miles west of Brighton. We left the Federal street station in the regular morning train, in a car especially provided for the excursionists, amounting to about forty gentlemen, the officers of the road, members of the press, and invited guests. On our arrival at Brighton, our car was fastened to the fine locomotive Canton, and we started on our tour of exploration. The first object of interest which attracted our attention, was the fine railroad bridge across the Beaver.—Here the train stopped, and the company got out to examine the structure. It is 750 feet long, erected on piers of stone, of as fine workmanship as we ever saw. The wood work is also of the best description, giving one an idea of great solidity and durability. The height of the bridge is 50 feet from the water to the track.

From this point the road begins the ascent to the summit, at the rate of 40 feet to the mile, and keeps near the Beaver river until we come to Wallace's run, which is crossed by a trestle bridge, 80 feet high, the trestles resting on stone piers. The whole height of the bridge from the bottom of the run to the track, is 130 feet. This bridge is built on a curve in the road, and is also curved to suit its position. The wood work of this bridge, as well as that across the Beaver, was built by Messrs. A. & I. Patterson, of Allegheny, and reflects great credit upon those enterprising contractors.

Between the Beaver river and Wallace's run, the scenery is very fine, occasional glimpses being caught of the river, and of the bold and striking scenery along its banks.

From Wallace's run the road leaves the Beaver river, and winds among the hills, steadily ascending, until it reaches the summit, 8 miles from Brighton, having obtained an elevation of 300 feet. At this point, there is a deep cut, about half a mile long, and at its deepest point, 72 feet in depth, nearly the whole of it a rock formation. This work took about two years, and cost \$48,000.—This heavy work delayed the road for some time, and some croakers thought it would not be finished for many months to come. Their prognostications have failed, for we can testify that we passed through it in a railroad car, drawn by the whistling locomotive, amid the shouts of the people assembled on the banks, 70 feet above us, and the roaring of artillery. The great work is done. The locomotive has passed the summit of the hills which divided the valley of the Ohio river from the table lands of Ohio, and thus has overcome the chief obstruction between Pittsburg and St. Louis.

In the middle of the deep cut the train stopped, and the company got out to examine the stupendous work which had been performed, and there was but one expression, that of surprise and gratification at the great feat which had been accomplished.

From the summit we proceeded about 2 miles further, where we overtook the tracklayers, having come with the train about 38 miles from Pittsburg. At this point are some embankments 50 feet high, which we were informed were the last of the heavy work—beyond this point the grading being comparatively light.

The grading and bridging is about finished the whole distance to Massillon, a distance of 110

miles from Pittsburg. Four gangs, comprising four hundred men, are now engaged in laying the track between Brighton and Alliance, and it is confidently expected that the track laying will be finished to Alliance by the 15th of December, and to Massillon by the first of January, when we shall see a stream of travel through Pittsburg such as has never been witnessed before.

Having spent some time in looking at the work, we re-entered the cars, and started on our return, with the locomotive Salem, which had come out on purpose to take us back. When we arrived at the Merrick House we found a fine dinner awaiting us, of which the company partook with appetites sharpened by the ride. After the cloth was removed, speeches were made, and toasts drank suitable to the occasion. We took no notes, and only say that all were excellent and in good taste, and that nothing occurred to mar the harmony and good fellowship of the occasion. Among the speakers were Gen. Robinson, the able and enterprising President of the road; S. W. Roberts, Esq., the experienced and most efficient Chief Engineer; Hon. A. W. Loomis; Hon. Judge McClure; Wilson McCandless, Esq.; and Morgan Robertson, Esq. Mr. Roberts gave a very interesting account of the progress and prospects of the road, which was received with rounds of applause.

At four o'clock we took our seats in the car, and at ten minutes past four started for Pittsburg, arriving at the Federal Street station at 6 minutes before 5, making the trip of 28 miles, from Brighton to Pittsburg in exactly 44 minutes, including 4 minutes lost in making two stoppages. From Rochester to Sewickly, 13 miles, the time was 17 minutes. For several miles the train ran a mile a minute. The locomotive used was the Salem, one of Norris' engines. Notwithstanding this high speed, the cars ran so quietly, that one could read the finest print with ease.—*Pittsburg Gazette, of the 24th inst.*

Ohio and Indiana Railroad and its Connections.

J. R. Strunghan, Esq., the Chief Engineer of this road, has just paid us a visit on business of the road, who furnishes us with the following facts:

The Central road of Pennsylvania is progressing with quiet, but unceasing energy. In a few months the traveller can go from Pittsburg to Philadelphia by railroad with the exception of thirty miles staging. The Portage road being used while the mountain division of the new road is being completed.

The Ohio and Pennsylvania road from Pittsburg to Crestline, will be completed to Massillon in January next, and to Wooster early in March, while the remaining distance is now in rapid progress. The eastern portion for twenty-seven miles is now in use and carries about four thousand passengers per week, and the track-layers are at work in Stark and Columbiana counties.

At Crestline, twelve miles east of Bucyrus, a point on the Cleveland and Columbus railroad, about three miles north of Galion, the Ohio and Pennsylvania road terminates, and then begins the Ohio and Indiana road, which runs to Fort Wayne, 131½ miles long.

This is the third link in the great chain of railroads direct from Philadelphia to the Upper Mississippi, and is the only legitimate extension of the eastern road at Crestline, as the Bellefontaine and Indianapolis road comes to Galion, and does not connect; thus giving the Fort Wayne road the sole advantage of this connection, although the Ohio and Pennsylvania company has located its road three miles farther south than a direct line, which they could have preferred, in order to accommodate the Bellefontaine company.

An election of Directors was held at Lima on the 10th inst., and resulted in the election of W. Meriman, President, and F. Adams, of Crawford, Henry Peters, of Wyandot, L. Bliss and T. K. Jacobs, of Allen, and Judge Hanna and P. Hoagland, of Fort Wayne. These are all safe men, and will build the road as fast as due economy will permit.

The line is already located as far west as Van Wert, Ohio, and the Engineers are actively engaged in extending the survey to Fort Wayne, Indiana, and the whole road will be in a condition to let to contract in three or four weeks.— *Ft. Wayne Times*

Pneumatic Pile Driving.

We copy the following from the transactions of the English Association of Civil Engineers, in reference to a new mode of constructing foundations for piers or bridges. The paper was read by Mr. John Hughes. The bridge was across the Medway, at Rochester:—

The bridge was described, as being designed to consist of three large openings, a central one of 170 feet in width, and two others, each of 140 feet in width, spanned by cast iron segmental girders, and of a passage to admit masted vessels to the upper parts of the river, across which a moveable bridge would be placed. Each of the river piers occupied an area of 1,118 square feet, and rested upon a series of cast iron cylinder piles, 7 feet in diameter, placed 9 feet apart longitudinally, and 10 feet transversely, so that there were fourteen under each pier. The cylinder piles in the abutments were 6 feet in diameter, of which the "Strood" abutment required thirty, and the "Rochester" abutment twelve. Each pile was composed of two, three, or more cylinders, 9 feet in length, bolted together through stout flanges; the bottom length had its lower edge bevelled, so as to facilitate the cutting through the ground. The bed of the river was originally presumed to consist of soft clay, sand, and gravel, overlaying the chalk, and accordingly the application of Dr. Potts' pneumatic method for forcing the cylinder piles into the ground, which had been successfully carried out in similar positions, was contemplated; but after a few trials, the ground was found to consist of a compact mass of Kentish rag-stone, so that the mere atmospheric action upon the piles, induced by a partial vacuum, would be ineffective in such a situation. It was therefore decided, that the pneumatic process should be reversed, so as to give each pile the character of a diving-bell; for which purpose one of the cylinders, 7 feet in diameter, and 9 feet in length, had a wrought iron cover securely bolted to it, through which two cast iron chambers, "D" shaped in plan, with a sectional area of about 6 square feet, appropriately called "air locks," projected 2 feet 6 inches above the top of the cylinder, and 3 feet 9 inches below the cover. The top of each "air lock" was provided with a circular opening, 2 feet in diameter, with a flap working on a horizontal hinge, and an iron door, 2 feet by 3 feet 4 inches, with vertical hinges below the cover; each "air lock" was also furnished with two sets of cocks, the one for forming a communication between the cylinders and the chamber, the other between the chamber and the atmosphere. Compressed air was supplied to the cylinder pile by a double-barrelled pump, 12 inches in diameter, and 18 inches stroke, driven by a 6 horse power non-condensing steam engine. At first, the expelled water was made to pass into the river, from beneath the lower edge of the pile; but when the stratum became so compact as to oppose a high degree of resistance to the passage of the air, an outlet was formed through the side of the uppermost cylinder, by the introduction of a pipe, having the form of a syphon, the long leg of which reached to the bottom of the pile, and was subject to the pressure of the condensed air on the surface of the water within, whilst the short leg, leading into the river, had the effect of relieving the amount of compression, provided a vacuum was once obtained in the body of the syphon. Such an effect was readily produced by connecting the summit with the exhaust side of the air pumps, by a pipe which could be opened or closed at pleasure. To insure the downward motion of the pile, and to give it a weight which should be at all times superior to the upward pressure, two stout-trussed timber beams were laid on the top of the cylinder, in a direction suitable for bringing the adjacent piles into action as counterbalance weights, by four chains passing over cast iron sheaves.

Two light wrought iron cranes were fixed inside the cylinder, the jibs of which swept over the space between the air locks and windlasses, inside and outside, for the purpose of hoisting the loaded buckets and lowering the empty ones.

The method followed in working the apparatus was found to be so simple in detail as to be perfectly intelligible to all the workmen employed.—The pumps being set in motion, the flap of one of

the air locks and the door of the other were closed; a few strokes compressed the air within the pile sufficiently to seal the joints, and whilst the pumping was in progress, the men passed through the air locks to their respective stations. When the water was shallow, the pile descended, by scarcely sensible degrees, as fast as the excavation by hand permitted; but when the water was deep, the excavation was carried down full 14 inches below the edge of the pile, which then descended, at once, through the whole space, as soon as the pressure was eased off.

A Remedy for Railroad Dust.

The greatest drawback upon the comfort and pleasure of railroad travelling is the dust nuisance. Upon most roads, though upon some much more than others, the dust, in dry weather, that is for about nine tenths of the time, pours into the cars in suffocating clouds covering the passengers with a coating of filth from head to foot. Where it prevails it destroys all the pleasure of travelling, and especially the important part of it derived from observing the surrounding country. It is very injurious to the health also, being inhaled unavoidably into the lungs, where it remains and lays the foundation for consumption, and serious pulmonary complaints. In England the railroads are never dusty, owing to the constant moisture of the climate. The railroad tracks are generally overgrown with grass. In this country the nuisance is so intolerable in the summer season as to drive many travellers from the railroad to the steamboat, whenever there is the power of choosing between them.

There are two methods of putting an end to this nuisance. One is to cover the track with coarse gravel carefully sifted, or with stone broken into small pieces. The New York company have covered several miles of their track with oyster shells, which is found to answer the purpose very well. The expense of this improvement is only about \$500 per mile. The cost of a layer of gravel sufficient to lay dust, would not exceed \$1,000 per mile, and would be repaid abundantly by the additional travel attracted to the road in almost every case. Many persons would travel on railroads in summer much more frequently than they now do, if they could be tolerably secure against being suffocated with dust.

The other remedy referred to, is to arrange or construct the passenger cars in such a way as to exclude dust. We believe that this much needed improvement has at last been devised. A gentleman of this city, a few days since, rode over the Vermont Central railroad, in a car furnished with a new invention expressly designed to exclude the dust. A better opportunity could not have been had to test the merits of the invention. There had been a drought of long continuance, the weather was hot, and the road was extremely dusty. But the success of the trial was complete.

The contrivance is as simple as it has proved effectual for the designed end. The air is forced into an opening in the top of the car through boxes into which a strong current is driven by the rapid motion. These boxes, while they admit the air freely, completely exclude the dust and cinders by means of a strainer or very fine net work of wire. The windows of the car are fastened and not expected to be opened. The air admitted from above passes out through the blinds arranged for the purpose in the side cars. In this way a constant and pleasant ventilation is kept up, and there is no poking out of heads to get knocked off or badly jammed.

Our informant, who was in the car as an ordinary and disinterested passenger, tells us that this simple and inexpensive invention was perfectly successful. While the passengers in the other cars were sweltering with heat, and begrimed with dust from head to foot, his car was agreeably cool, and entirely free from dust and cinders the whole way; so much so that a brush was quite unnecessary at the end of his journey on that road; but when he changed to a connecting road and a common car, he became almost suffocated with dust, and blinded with the cinders. The cinders are almost as great a nuisance as the dust.

This account of this valuable invention is fully confirmed by others, and being doubtless correct,

cannot be too strongly commended. The press throughout the country ought to urge upon railroad companies the importance of immediately adopting an improvement by which an incalculable addition can be made to the comfort and pleasure of the travelling public, at a very trivial expense.

Virginia Internal Improvement Convention.

We give below a portion of the address issued by the committee appointed by the Internal Improvement Convention, recently held at Richmond. It contains a great amount of interesting matter, and is important as indicating the state of the public mind in Virginia. We believe that the best results will grow out of this movement.

ADDRESS.

The committee appointed to report to the convention the most efficient means of achieving its important objects, have performed that duty, so far as the materials existed for a proper statistical exposition of the value of the trade of Virginia, as well as the facilities completed, or in progress, for its transportation to the exporting cities of the State.

The commercial prosperity of Virginia is based upon the employment of the Chesapeake ports; and no project for acquiring the materials or the means of exportation, can be successful, which does not contemplate their employment.

The country tributary to the Chesapeake, possesses advantages not surpassed by any other on the Atlantic. Nature has been so bounteous, that the difficulty has been, not so much to discover a good site for a city, but to discriminate between the numerous excellent locations presented, Norfolk, Richmond, Petersburg, Fredericksburg and Alexandria, have all been established to receive and conduct the trade of Virginia.

From the individuality of these local interests, it has been heretofore impossible to adopt any system of improvement calculated to promote the exclusive right of any one of the cities referred to—Apprehensive that the limited trade legitimate to each, might be diverted to some rival, impediments have been thrown in the way of great lines of communication with the interior of our own and other States, calculated, perhaps, to vary the local direction of some particular trade, but destined in the end, to compensate each of these cities, by its dividend of a trade far surpassing in magnitude and value, any particular loss. The evils of rivalry will, however, be no longer felt, each of these cities having received a line of internal communication, many of which are now converging to a common point of union; interests heretofore supposed antagonistic, are now harmonised in the completion of a plan common to them all, and weapons brightened by the conflict of a generous rivalry, are now wielded in the achievement of a common triumph. It is thus that the construction of the South Side railroad, and of the James River Canal, make the prosecution of the Virginia and Tennessee railroad, alike important to Lynchburg—to whose public spirit is so largely due the conception and execution of that great project—to Richmond and to Petersburg. The extension of the great Central railroad to the Ohio, no longer a subject of exclusive interest to Richmond, appeals to the support of Alexandria. The completion of the Dock Connections will connect Norfolk with the James River and Kanawha Canal, and interest that city in its extension to the Ohio. The Richmond and Danville railroad is upon the same principle, a work from which Petersburg and Richmond may derive common benefits.

Convinced, therefore, that their interest and duty alike, demand a cordial alliance, the cities of Virginia will hereafter bestow upon the extent of the great lines of improvement here indicated, their earnest and combined co-operation.

Since, however, the partial completion of these great improvements has already bestowed upon the cities of Virginia a large accumulation of trade, it becomes necessary to encourage the establishment of a Commercial Marine, of soil ships and steamers, to convey abroad our own trade, and exchange for it the productions of other nations. The ex-

port and import trade of Virginia is now taxed with transport coastwise for exportation from northern cities; it is burthened with the charges of northern merchants; whilst the whole commercial profits resulting from freights, exchanges, as well as from the importation and supply of the goods received on exchange, result exclusively to northern capital and northern enterprise.

We state the fact in no spirit of sectional prejudice, but as a consequence of our own supineness. We think it time that a trade so circuitous, and a tribute so unworthy, should cease. We should now export from, and import into the Chesapeake cities of Virginia, by vessels owned and manned by Southern men. No State can expect to preserve its prosperity which does not provide for its citizens the varied pursuits in which industry and enterprise shall receive an adequate reward.

In estimating the present value of the Chesapeake trade so far as materials are at hand for a correct estimate, we will find that the James river and Kanawha canal, its principle tributary, contributed during the last year, \$6,123,865 49, the products of the interior; whilst it carried into the interior, merchandise and other articles, valued at \$9,727,224 29.

The business of the Central railroad has doubled within the past year, its downward tonnage amounting to 25,000 tons, and its upward transportation is perhaps one-half of that amount. The Richmond and Danville, the Richmond and Petersburg, and Richmond and Fredericksburg railroads, contribute considerable additions to the aggregate of trade upon the James river.

Amongst other important items of an export trade, we may mention that the total inspections of Virginia tobacco amount to 50,000,000 hogsheds of which the larger portion is shipped to Europe; whilst the remainder, with a large amount not inspected, is manufactured in the interior for consumption at home and abroad.

The flouring mills at Richmond, manufactured last year, 1,178,100 bushels, and are expected this year to manufacture 1,587,100 bushels. This flour is shipped to Rio, through northern houses, in vessels whose return cargoes consist chiefly of coffee. This coffee is in turn, sent back, in northern vessels, to Virginia, for consumption—the freights, commissions, and commercial profits of both the export and import trade, being a direct loss to the State of Virginia, to which this trade rightfully belonged.

During the present year, however, some of the most enterprising merchants of Richmond have shipped nine cargoes of flour directly to Rio, the vessels return to this port with hides, coffee, and other products of south America. We are more-over informed that a larger amount of goods will be imported this year to Richmond than has been imported in any one year for a series of years; and that the direct import would have been far larger but for want of ships in this trade, which compelled our merchants to ship through the northern ports.

During the year ending July the 1st, 1851, the foreign trade of James River gave employment to a number of foreign and American vessels. From a statement furnished from the Custom House in Richmond, it will be seen that the tonnage employed in the direct foreign trade between Europe and the waters of the James river amounts to nearly 30,000 tons. This amount itself is amply sufficient to give employment to two steamers of 1500 tons burden.

If it were in our power to present the commercial statistics of the cities of Norfolk, derived from the Roanoke river, the Dismal Swamp canal, and other resources,—the rapidly increasing trade of Alexandria, derived from the Chesapeake and Ohio canal, and from the country adjacent to her,—of Petersburg and Fredericksburg we do not doubt but that an amount of Chesapeake trade could be demonstrated adequate to sustain at once, by the energetic and united patronage of our merchants, a direct trade with Europe and South America. The material for this trade already exists. Any doubt, however, which may be entertained of the present amount of Virginia commerce becomes unimportant, in view of the immense accessions to follow the completion of the improvements referred to. "Whilst we pause to make the figures the

fact is upon us." A succinct statement of the works of artificial improvement now in progress and actually completed, will serve to embody the facilities upon which we may rely, and to develop the capacity of transportation upon which the future trade of Virginia must principally depend. We think, therefore, it sufficiently appears that looking alone at the present trade of our cities, we have ample encouragement to commence at once upon this undertaking, with the fair prospect of trade enough to ensure handsome profits to capitalists who may embark therein.

But, when we glance upon the future trade which these cities must enjoy, we are still more encouraged. We will first inquire in regard to the number of miles of railroads and canals now constructed. Your Committee have been furnished with the following very valuable statistics by the Second Auditor:

Statement of the Railroads in Virginia completed and in progress.		length.	Completed.
Baltimore and Ohio railroad.....	251	90	
Richmond and Danville railroad.....	147	35	
Richmond and Petersburg railroad.....	22	23	
Clover Hill railroad.....	15	15	
South Side railroad.....	122	10	
Manassas Gap railroad.....	60	60	
Petersburg and Roanoke railroad.....	60	60	
Seaboard and Roanoke.....	77	77	
Appomattox railroad.....	9	9	
Winchester and Potomac railroad.....	32	23	
Virginia Central railroad (including Blue Ridge railroad.....)	138	98	
Virginia and Tennessee railroad.....	205	10	
Orange and Alexandria railroad (including branch to Warrenton, ten miles).....	100	10	
Richmond, Fredericksburg and Potomac railroad.....	76	76	
Greenville and Roanoke railroad.....	21	21	
North-western railroad.....	120	120	
Miles.....	1,455	565	
Chesapeake and Ohio canal.....	185	185	
James River and Kanawha canal.....	200	200	
Dismal Swamp canal.....	23	23	
Fred's valley plank road.....	40	1	
Staunton to James river.....	40	..	
Boydton to Petersburg.....	75	..	
Junction Valley.....	65	..	

It thus appears that there is now completed in Virginia 565 miles of railroad, and 418 miles of canals, and that there are now in course of construction, 890 miles of railroad, and 220 miles of plank road. We have, then the gratifying result, that there are nearly 2,000 miles of railroad and canal construction or in progress of construction, in our State. The appropriations for these works are already made, and the money has been almost entirely raised at home, without the necessity of incurring a foreign debt.

But this view becomes still more encouraging, when we recollect that these improvements will be finished, at farthest, within the next four years.—As each mile is finished, an increase will be given to the trade of our cities; and when the Virginia and Tennessee railroad, the Richmond and Danville railroad, and the Seaboard and Roanoke railroad are finished, they will be at once connected with a net work of railroads through North Carolina, South Carolina and Georgia, on the one hand, and Tennessee, Ohio, Kentucky, Alabama, Mississippi and Louisiana on the other. It is certainly a source of pride to know that we have quietly effected so much. Speculation would be at fault in estimating the trade that must follow the completion of these works. The rapid increase of our cities will be one certain effect, while the appreciation of real estate, and the profits of every industrial pursuit, will be increased. At the same time the heart of the patriot will rejoice that this acquisition of strength, wealth, population and power, must result in restoring the south to her former position in the Union, and may render that Union, as bequeathed to us by our forefathers, more stable and firm—its obligations everywhere observed, and everywhere sustained and beloved, for the benefits conferred upon its citizens.

Georgia has now 1,000 miles of railroad—South Carolina is extending her iron arms in every di-

rection, and in two or three years, every part of the State will be provided with railroad facilities. N. Carolina has giant schemes on foot, which she is prosecuting with a giant's strength. Tennessee will soon extend the Virginia railroad, and the railroad extending from Charleston and Savannah to Chattanooga, to Memphis, on the Mississippi.—Alabama, Mississippi and Louisiana are seeking connections with these roads, and soon we shall see the south more highly improved by railroad facilities than the north, owing to the level nature of the country, and the cheapness of labor and materials in the south. Charleston alone is moving with far seeing sagacity for this increased trade. We feel pride and pleasure in her means, and we heartily hope she may prosper in her former enterprise to establish direct trade by means of ships and steamers owned by southerners. We believe there is space enough, and a back country sufficiently ample, if we are true to ourselves, to secure the prosperity of all our southern towns; and their prosperity, so far from causing us to fall, will but add to our own prosperity. But how can the people of Virginia hope to contend with Charleston in a generous competition for this trade, unless equal facilities are provided in our harbors for shipping directly to Europe. If we pause in this contest, the trade will have been fixed in the direction of Charleston, and we may strive in vain to regain what is strictly our own.

To illustrate the advantages to be anticipated, we may refer to the enlightened and enterprising commonwealth of Massachusetts. The large expenditures made for the construction of railroads, and the results of that system have there vindicated the wisdom which dictated it.

In that State, the length of railroads in 1840, was 433 miles—it is now 1,033. The value of property in the several counties of the State has increased from \$299,878,329 in 1840, to \$590,531,881 in 1850—an increase in the value of property during ten years, of \$290,653,552, or about one hundred per cent.

In Boston, which is the centre of the whole system of Massachusetts railroads, the following result is obtained:

	Population.	Wealth.
1840.....	171,992	\$120,114,574
1850.....	269,874	266,646,484

Showing an increase of 60 per cent in population, and 140 in wealth.

There may be persons, however, incredulous that the trade of Virginia now exported from northern, western and southern cities, can be directed to the ports of the Chesapeake. It will not be doubted, that the greater portion of the products of the valley, and western Virginia, are destined for consumption in the northern States, or in Europe.—These products would adopt the most direct line of transit between production and consumption, but for the natural obstacles which intervene and condemn them to the tedious, tortuous and perilous navigation of the rivers and coast. The direct line of transit would pass through the Chesapeake ports of eastern Virginia.

So long as the route of the water-borne produce of western Virginia was cheaper than any artificial line of direct transit, any attempt to divert that trade might have been hopeless. The opinion that no railroad could succeed, unless it connected populous points, by a short line, has been reversed by experience. Considering the railroad and locomotive as almost a revolution for the south, we may be pardoned for referring to the causes which are now producing, through their agency, such important social, commercial and political results. Time has become an essential element in the value of merchandise and staple productions. No producing region, and no mercantile community, can adopt a slow and circuitous delivery, in competition with others producing and vending the same articles, with greater facilities of transportation than themselves. Travel and postal communication now tolerate no delay or impediment. It is impossible to present any formula to show how far shortening the time of transit is equivalent to a positive reduction of freight. The telegraph and express lines, everywhere well sustained, prove the estimated value of time to be very great; though it varies, of course, with the fear of competition,

with the value of the commercial subjects, and with the relative importance of individual transactions. But we see from the opening of the artificial lines of Boston, New York and Philadelphia, that the commercial patronage of the interior is immediately transferred to the most rapid and direct lines of outlet and intercommunication. It is thus that the great cities of the north have severally penetrated the interior with artificial lines, until they have taken from the open and untaxed current of the Mississippi, the commerce produced upon it borders. These great artificial outlets have been competing among themselves for the commerce of the interior, until they now offer, not only superior certainty, and reduced time of delivery, but they offer upon many articles cheaper freights than the river and coast routes referred to. We copy from the New Orleans Crescent a notice of the reversing of the natural current of trade, resulting from the construction of the great artificial lines referred to:

"For years past, cotton has gone up the Ohio river from Tennessee, through the Pennsylvania and New York canals, to the factories in the interior of these States, and often the cities of Philadelphia and New York. We recollect last September of one shipment of upwards of 700 bales shipped from Louisville, via the Ohio and New York canals to New York city. The freights were less than by the way of New Orleans, and the difference in exchange and insurance was near two per cent in favor of the northern route."

"The amount of cotton that passed up the Ohio last year is estimated, by one familiar with the trade, at sixty thousand bales. This season, nearly all the boats from the Tennessee and Cumberland rivers, bound up the Ohio river, are freighted more or less with cotton. The packets between Memphis and Louisville and Cincinnati, of which there are several lines, take cotton up the rivers nearly every trip.

"The quantity of tobacco that takes its course up the river from the lower Ohio, for the eastern markets, by northern routes, is rapidly increasing. That raised in Ohio and Kentucky above Cincinnati—and among the latter, the celebrated Mason county tobacco—nearly all goes by the way of the canals to the eastern markets. By a statement recently published, the difference in the cost of transportation from Louisville to New York, is four or five dollars per hoghead in favor of the northern route, while the article escapes the sweat which it undergoes on shipboard while passing through our latitudes.

"Grain is now carried from Wabash to New York by the canals, at the same cost of freight as is charged by the way of New Orleans; but by the northern route they incur no waste, nor risk of damage by heating, and save the whole cost of sacking, for it is carried in bulk, and the same number of measured bushels are delivered in New York as are received on boat from the shipper. The lard, pork and flour, from the same region are taking the same direction. Last autumn the rich region of Ohio, Indiana, and Illinois, were flooded with the local bank notes of the Eastern States, advanced by the New York houses, on produce to be shipped by them, by the way of the canals, in the spring.

"These moneyed facilities enable the packer, miller, and speculator, to hold on to their produce with the opening of navigation in the spring, and they are no longer obliged, as formerly, to hurry off their shipments during the winter by the way of New Orleans, in order to realize funds by drafts on their shipments. The banking facilities at the east are doing as much to draw trade from us as the canals and railways, which eastern capital are constructing.

"All the lead from the upper Mississippi now goes east by the way of Milwaukee. But the most recent and astonishing change in the course of the northwestern trade, is to behold, as a friend told us, the number of steamers that now descend the Upper Mississippi, loaded to the guards with produce, as far as the mouth of the Illinois river, and then turn up that stream with their cargoes, to be shipped to New York, via Chicago.

"The Illinois canal has not only swept the whole produce along the line of the Illinois river to the east, but is drawing the product from the Upper Mississippi through the same channel; thus de-

privyng not only New Orleans, but St. Louis, of a rich portion of their trade."

To this we may add the fact that cargoes of corn have been recently shipped from Iowa, down the Mississippi, along the Illinois canal, by way of the lakes, to the city of New York.

The cause of this astonishing result may be explained.

Artificial lines afford not only the most speedy means of transportation, but the unity and system of their administration gives them great advantages over the efforts of individual enterprise. They have a basis of travel and mail monopoly which enables them to discriminate in favor of any specific article of commerce, the factorage and final results of which may be sufficient in general to indemnify them for the abatement of freights, whilst the revenue of the improvement is sustained by an increased charge upon business not subject to competition, or by the large amount of trade which they command. These exclusive resources, rapidity, certainty and safety of transportation, with the power of discrimination have enabled these great lines to wrest from the Mississippi so much of its produce.

To establish the capacity of artificial to compete with natural lines, we publish the following tabular statement, showing the contest between New York and New Orleans for the trade of the Mississippi:—

New York and New Orleans in Western Trade.

	N. Y. population.	Canal trade.
1840.....	2,429,721	66,303,896
1850.....	3,098,813	156,397,729

An increase of 25 per cent. in population, and 150 per cent. in trade, by canals, in ten years.

Produce of West received by N. Y. canals:

1842.....	\$22,752,013
1850.....	55,474,937

An increase of 145 per cent.

Produce of West received at New Orleans:

1842.....	\$43,716,045
1850.....	96,897,873

Or an increase of 120 per cent.; or a comparative increase by New York of 25 per cent. over New Orleans in western produce in five years. In the three years 1848, 1849 and 1850, the receipts at New Orleans by river were 2,312,121 bbls. flour; at New York, 8,636,207 bbls. pork; New Orleans, 1,536,817; New York, 211,018 bbls. beef; 200,901 bbls. New Orleans; New York, 264,052 bbls. wheat; New Orleans, 852,497 bushels; New York, 8,798,759. Corn, New Orleans, 9,758,750 bushels; New York, 11,178,228 bushels. Bacon, New Orleans, 135 million pounds; New York, 26 millions. Lard, New Orleans, 293 million pounds; New York, 21 millions. Butter, New Orleans, 8 million pounds; New York, 97 millions, &c.

We have adverted to these well-established facts, and explained the rationale of their operations, to show that the trade of the northern cities is derived by artificial ways from the great producing valleys of the west. If this be the case—if the productions prefer the lakes, railways and canals of the north to the river and gulf outlet—why should not the products of western Virginia, which almost circumnavigate their own State, which pursue a distant, indirect and unsafe line of transit, replete with every danger of river, cape and coast, prefer the direct communications through Virginia, and more congenial destiny of encouraging our own ports? There is no reason. Their anxiety to complete these artificial outlets proves its practicability. All the vast aggregate of trade, now existing in Western Virginia, destined for Atlantic exportation, may be safely added to that which we have already demonstrated as subject to be employed in this great enterprise. We may safely say that if all the existing commerce of Virginia, for exportation, could be collected in her own Atlantic ports, it would not fall short of twenty millions of dollars, nor would her consumption of merchandise be less. Besides this, the very organization of commercial facilities would guarantee an immense accession of mineral and agricultural productions.

We may properly add to those resources which are directly derived from Virginia alone, the products of the States connected with her, by the lines of improvement now under construction. Tennessee

and Kentucky, and North Carolina, will naturally find their most direct outlet through the Virginia and Tennessee, the Southside and Seaboard railroads, now under continuous and connected construction to the interior of the states referred to. The prosecution of the canal and Central railroad, or the construction of a branch road into the Ohio valley, will add much from those quarters; and but a few years will elapse before the perfected facilities will bring this great commerce to the legitimate ports of exportation. We will not enlarge upon the commercial results of extending these lines into the interior of the South-western States, and the national and international intercourse which will pour through Virginia, invigorating her local improvements, freighting her vessels, and filling her ocean steamers. It will be plain, upon investigation, that no cities south of Virginia have the commercial advantages of our own—none have the varied products, the local patronage, the rapid communication with the transatlantic cities. Enterprise is now doing all it can to shorten the line of ocean transit. In this the cities of Virginia can not compete with Boston or New York for the transatlantic intercourse of the Northwestern States—but the mail and merchandise transportation, with the travel between the great southwest and the cities of Europe, belong legitimately to the Virginia ports on the Chesapeake, and will be certainly secured.

The committee respectfully recommend the adoption of the following resolutions;

Resolved, as the opinion of this committee, That lines of mail or other steamers, or other vessels, from Hampton roads to some port or ports of Europe, ought to be established; and Virginia, North Carolina, Tennessee and Kentucky, and such other Southern States as are disposed to aid in the enterprise, should be appealed to, and an appeal should also be made to Congress to bestow upon such line the same mail facilities which are extended to the North lines; and the bars which now obstruct the navigation of James river, should be removed.

Resolved, That committees be appointed to memorialise Congress and the Legislature of Virginia, and to prepare an address to the public upon the subject aforesaid, and the great importance to the people of Virginia, and the South generally, that they should conduct their own trade directly on their own bottoms, and with their own men and means.

Resolved, That lines of packet ships, screw-propellers, or mail steamers, ought to be established between the exporting cities of Virginia, and the West Indies and South America.

Resolved, also, That the people of Virginia be requested to hold meetings in their several counties, cities and towns to effect the objects of the foregoing resolution: and that to this end it may be recommended to them to adopt some organization by the appointment of standing and corresponding committees, or otherwise as them shall seem best.

Resolved, That the merchants of our Atlantic cities ought to import directly to our Virginian port the production of foreign countries used and consumed in this and the adjoining States; and that it be recommended to the merchants of the interior, and the people at large, to aid in this noble enterprise.

Atlantic and Gulf Railroad, Florida.

It is said that sufficient stock is taken to secure the completion of the work. The harbor of St. Mary's is to be taken on one side, and we believe that of Tampa on the other.

Tampa Bay is one of the most beautiful of harbors, and it is impossible to conceive one more safe, for it is literally a harbor within a harbor.—There are some 24 feet of water, over the bar at Egmond, and thence running some 20 miles up the bay; there is a depth of from 4 to 5½ fathoms, in many places approaching close to the shore, furnishing fine sites for navy or ship yards; and to the head of Old Tampa we have 16 feet of water, at the lowest tides, carried up to fine high bluffs, giving at ordinary tides from 18 to 20 feet, as shown by the survey of Lieut. Sims, U. S. N., in '43, '44. The country is one of the healthiest in the South, and is the natural shipping point of the fine counties of Marion and Hernando; lying im-

mediately north, there is a fine tract of country known as the Coast Hammock, intersected by numberless small streams, which fall into the Gulf, and lying between the Suwannee and Clearwater harbor; the coast here runs nearly north and south, consequently the proposed road would, from the latitude of the Cedar Keys, run nearly parallel; this country is now nearly inaccessible, being totally devoid of harbors, and having a shoal, rocky, coast; the road, therefore, would be the outlet for its productions, and it will become one of the finest sugar-producing countries in the Union.

At Tampa there is always ample depth of water, and a fine beating channel, and steamers and shipping can take their departure at any hour of the day or night.

Great Western Railway of Canada.

Construct a good traffic line cheaply and work it economically; the result is prosperity.

The Americans are a vast deal more successful in their railway undertakings as commercial enterprises, than we are. They make a thin traffic pay, while we are generally sunk in poverty on a rich traffic. The secret of American success is cheapness of construction, which is due, not only to their commercial heads, but to a considerate and merciful Government.

The Great Western railway of Canada is about to be made, and if it pay as well as its near neighbors, to which it forms a connecting link, its Shareholders have to look forward to something like a 14 per cent. per annum dividend, an amount of dividend which handsomely remunerates a man for his trouble and enterprise in diverting his capital to railway purposes, as well as pays him the ordinary rate of interest for his outlay.

The Great Western railway of Canada is for the most part a trunk line of 228 miles running from the city of Hamilton at the head of Lake Ontario to Port Windsor, opposite Detroit at the head of Lake Erie; from Hamilton to the Falls of Niagara there is an extension line, and to Port Sarnia at the foot of Lake Huron there is a branch. The whole is about 278 miles in length, and including the provision of plant and every necessary for the efficient working of the traffic, is to cost under a million and a half, or less than £5,000 a mile. Under £10 per mile per week profit from traffic would be equal to 10 per cent. dividend. The promoters show in their estimates a larger dividend than 10 per cent.

It is a fact that the line is extremely level, straight, and designed to be cheaply constructed. It is also the fact that the Michigan railway, extending 227 miles westward from Detroit a line which is the western continuation of the Great Western railway of Canada, now pays about 14 per cent. per annum on its outlay. And another fact worthy of being remembered is, that the average dividend of eight other railway companies whose lines lie on the eastern side of the Great Western railway of Canada is about 14 per cent. Forming the connecting link between such well-to-do lines, and having a level country to traverse, the Great Western railway of Canada might reasonably be regarded as a very hopeful project. With it are connected some highly respectable gentlemen both in England and America.—*Herapath's English Railway Journal.*

On the Conduction of Electricity through Water.

BY MR. F. C. BAKEWELL.

This paper gave the results of some experiments on the conduction of electricity by water, made with a view to prove that an electric current may be transmitted for a considerable distance through unprotected wires immersed in water. The experiments were conducted on Saturday, June 28th, in one of the Hampstead ponds. A thin copper wire (No. 20.) 320 feet long, was stretched across the pond, and two copper plates, 10 inches square, to which wires were soldered, were immersed to serve as conducting plates for the return current. A Smee's battery of two pair of plates was used; and when the connexion was made with a galvanometer on the opposite bank, a steady deflexion of 30° was maintained, and a strong blue mark was produced by a steel electrode on paper moistened with a solution of prussiate of potass in deluted muri-

atic acid. In this experiment the conducting plates were placed close to the wire and on opposite sides of it, so that the return current passed diagonally across the exposed wire. The water in this case appeared to act as a conductor and as a non-conductor at the same time, in proportion to the surfaces exposed to its influence. In the next experiment the wire was doubled, and a current of electricity from the same battery was transmitted through the wires, both being immersed in the water. In this case the deflection of the needle was more powerful, and it continued steady at 45°. From these experiments, which Mr. Bakewell stated were a confirmation of those undertaken by Mr. Bain and Lieut. Wright with a different object in 1841, he inferred that the exposure of a large surface, as the electric telegraph wires from post to post, presented greater opportunity for the dispersion of electricity in moist atmospheres than the points of connexion with the posts.—*London Architect.*

Northwestern Virginia Railroad.

The Parkersburg Gazette supplies the following interesting information:—

We learn that the first engineering party, under the direction of Wm. H. Small, Esq., was a few days since, at the "Oil Springs" on Hughes river, 23½ miles from Parkersburg, having followed very nearly the course of the Staunton and Parkersburg Turnpike. The railroad distance does not exceed that of the turnpike more than three-fourths of a mile, and the ground is very favorable. This party is proceeding up the North Fork of Hughes river.

The second party, under the direction of George Hoffman, Esq., is tracing a route up Worthington Creek and its laurel fork, and thence by waters of Stillwell creek to the N. W. turnpike, about 12 miles from Parkersburg; thence south of the turnpike to the north fork of Hughes river, intersecting the route of the first party at the mouth of Silver run.

A third party, under the direction of J. C. C. Hoskyns, Esq., has recently started from the west fork of the Monongahela, near Clarkburg, and will prosecute its surveys towards the Middle Island and Hughes river waters.

The Chief Engineer, accompanied by the President, is now engaged in a reconnaissance of the more southern routes from Three Fork west.—There are, it seems, a variety of practicable routes, differing but little in length and facilities for construction; but as the road, in addition to the accommodation it will afford to the country through which it passes, is destined to form a link in the "straight line road" from Baltimore to St. Louis and elsewhere, it is incumbent on the company to select such a route, as, while it is adapted to the wants and interests of our own community, will tend in the greatest degree to secure to the route of which it forms a part, a preference over other routes between the east and west.

Indiana.

Central Railroad.—The managers of this enterprise have been prosecuting it with great vigor of late. We have gathered the following facts in relation to the condition of affairs, which speak encouragingly for the early completion of this important line of railway:

Contracts are now completed from this city to Cambridge city for the gravelling, grading, culverting, and the principal part of the bridging. Some of the contractors between this city and Greenfield have commenced the work.—Between Greenfield and Cambridge city all the work is under way and part of the grading is completed. From Centerville to the State line all the work is under contract, including the bridge across the Whitewater river at Richmond. All of this work mentioned is to be finished by the first of October, 1852. The timber for the superstructure between Indianapolis and Cambridge city is all contracted for, to be delivered on the road at estimate prices, and to be paid for in stock and lands belonging to the company.

This road connects at the State line, beyond Richmond, with the Dayton and Western railway. This work is being prosecuted vigorously, and will be in operation in one year; and so much of the

Indiana central road will be completed in the same time as to allow the running of trains from Dayton to Centerville in a year from this time.

It is the intention of the company to apply the real estate they have to the construction of that part of the road between Centerville and Cambridge city. It will soon be put under contract. The contracts thus far have been let to responsible men, and on terms highly favorable to the company.—*Indiana State Journal.*

Alabama.

Mobile and Montgomery Railroad.—The Mobile Advertiser in an article on the subject remarks:

"A direct line from here to Montgomery must be built—will be built; the only question is, as to time. The immense interests involved will force this result. In addition to the wants of commerce, such a line must be completed to supply the demands of travel—it being a link necessary to complete the railroad connections from New Orleans to Maine. Whether this connection will be effected by the road chartered from Mobile Bay to Columbus, or by a more direct route, is to be yet determined. That a road will be built we do not for a moment doubt, and the sooner the better. Montgomery should direct her energies to a union with Mobile; her attention diverted to any other point will only be a waste of time. There must be union of object and effort between the citizens of the two cities."

New York.

The Valley Railroad.—A meeting was held at Cuba, Allegany county, on the 6th ult., to consider the subject of the extension of the Valley railroad through that town, which is thirty-six miles south of Portage, the present terminus. Resolutions were adopted declaring the enterprise to be one of great importance to the people of Allegany, and to the contiguous counties that the line of the road to Pittsburg will intersect.—The route has been surveyed and found to be not only practicable, but the best that could be constructed. In view of the construction of the road to Cuba, it is believed that Rochester will become a "New York to all north of the spurs of the Allegheny Mountains in Pennsylvania, and to southern New York as far as Elmira." Gen. C. T. Chamberlain, M. B. Chamberlain and J. O. Spencer, Esqs., were appointed a committee to correspond with the directors of the road, and take such action as may be advisable. We shall publish the proceedings to-morrow.

Railroad from St. Petersburg to Warsaw.

In our paper of the 18th ult. we gave a description of this great work which is just completed, connecting the two great cities of the Russian Empire. The following is a more particular account of the opening ceremonies:—

His Majesty accompanied by the Empress, the principal members of the Imperial family, several foreign Princes, and attended by the high officials of State and a numerous suite, quitted St. Petersburg at six o'clock on Sunday, and arrived at Moscow at half past six o'clock the same night.

At the terminus they were received by the civic authorities, the regiment of the Guards, and a splendid staff at the head of which the Emperor went into the city, amid the firing of guns and the acclamations of the people. Early the next morning the Imperial party, accompanied by their guests and suite, went in State to the Cathedral, where a solemn thanksgiving was offered. The Czar afterwards held a grand levee, and in the afternoon reviewed the Life Guards.

The Emperor has addressed the following rescript to the chief directors of roads, highways and public works, General Count Kleinmichel:—

"Count Petro Andrejewitsch.—When the construction of the Petersburg and Moscow railway was decided upon, eight years ago, I confided to you the carrying out of the undertaking projected by me, under the conviction that the zeal which you had always displayed in my service was a guaranty for the result. With heartfelt pleasure I now see my wishes realized; and although the work is not yet completed, it is nevertheless so far advanced that as a first trial a large division of the Guards was transported by it, and I, with my whole

family, have accomplished the journey from Petersburg to Moscow.

"On this occasion I have seen with the highest satisfaction the immense—in short the astonishingly stupendous works, which combine all the essentials of perfect taste and suitability. It is impossible for me to refrain from acknowledging that it is by your laudible and extraordinary zeal and energy alone, that the important Government scheme, which will confer the most essential and important benefits upon the country, has been carried out with such great rapidity. While I thus do full justice to your active and untiring energy, it is at the same time highly agreeable to myself to express again my sincere and cordial acknowledgements for your laudable services. Experience of your zeal assures me that the Petersburg and Moscow line will be completed by the 13th of November next, and thus throw open to the public a more rapid, and at the same time easier, mode of communication within the empire.

"I remain, your sincere well-wisher,

"NICHOLAS."

Liabilities of Railroad Companies.

In the Common Pleas Court at Portsmouth, John P. Lyman has received a verdict against the Eastern railroad corporation for damages to sheet iron which was injured by rain while on its way of transportation. It was decided that the company was answerable for damages, whether caused by negligence or not, and the controversy turned upon the amount of damage. The plaintiff claimed \$60—the defendant had offered \$30—the jury gave \$55.

North Carolina Railroad.

We are authorised to state that the contract for the completion of the first division of this road, extending from a point near Goldsboro' to a point six miles and a half beyond Raleigh, has been taken by a company of this place, at the engineer's estimates, and that the work will be prosecuted with all convenient despatch. It is expected that it will be complete in two years.

We are glad that this contract has been taken by residents of this section; we suggested this in our paper last May, and still entertain the idea expressed then, that it will prove a profitable investment.—*Wilmington Herald.*

Sacket's Harbor and Saratoga Railroad.

Hon. C. E. Clarke, of Great Bend, Jefferson County, New York, has published a pamphlet on the expediency of constructing the above railroad. He describes the country through which it passes as abounding in pine and hardwood timber, and admirably adapted for dairy farms, but at present undeveloped, in consequence of the absence of roads.

The proposed terminus is at the finest harbor on the lakes, where ships of the largest size were built and sheltered during the last war with England.—In aid of this road, the government of New York offers 250,000 acres of land, to be selected by the company near their line, at the low rate of five cents per acre—and under the influence of the road, it is supposed they must rise to eight or ten dollars per acre. On the completion of the Hoosic tunnel, this line must connect Boston with the lakes by the shortest route, via Saratoga and Sacket's Harbor, opening a great extent of forest country, and reducing the distance to about 326 miles, making this the shortest route from the Atlantic to Lake Ontario.

The following is an extract from the argument of Mr. Clarke:—

The actual distance from Sacket's Harbor to Boston, by way of Canthage, Saratoga, the Vermont and Massachusetts, and the Fitchburg railroads, is only 310 miles; allowing for curvatures in the road not yet located, the distance would be 326 miles, making a difference in favor of the Sacket's Harbor route—70 miles by water and 74 by railroad—in all 144 miles. This is happily for Boston the shortest route by which the ocean can be reach-

ed from the lakes. The route by the way of Oswego, Syracuse, and Albany, to New York, is about the same distance, but when it is considered that Boston is one day nearer to Europe than New York, it is respectfully suggested that a very great part of the commerce, seeking its way to Europe by the way of railroad, would find its way by the Boston route.

American Railroad Journal.

Saturday, November 1, 1851.

Pneumatic Pile Driving.

We invite attention to an Advertisement in our paper of to-day, for proposals to construct the piers for a railroad bridge over the Great Pee Dee, (for the Wilmington and Manchester railroad company,) upon the plan invented by Dr. Potts, of England. For piles, hollow tubes, made either of wood or cast iron, are used. From these the air is exhausted, and the pressure of the superincumbent atmosphere forces down the pile. The process is a very ingenious one, is based upon strictly scientific principles, and has been found to work admirably in England, where it has been extensively used. We hope to see it introduced into this country. Our ingenious mechanics can find a minute description of the whole process in the scientific journals of the day, and we believe they have nothing more to fear from failure, by its use, than from the ordinary mode of bridge building.

Railroad Convention at Abingdon.

A very large and enthusiastic convention was held at Abingdon, Va., on the 8th ult., by the friends of the great interior central line of railroads between the north and the south, running through central and western Virginia, eastern Tennessee, and through central Alabama, to the Gulf of Mexico. The principal object of the meeting was to raise the sum of \$200,000, the balance required to place the Virginia and Tennessee road under contract. The first 60 miles of this road, commencing at Lynchburg, is pretty nearly finished, and 70 miles more is nearly graded, leaving something like 80 miles not yet contracted for. From the spirit manifested at the convention, we presume this sum will be easily raised. If so, the whole line will be placed immediately under contract.

Great interest attaches to all the links of the line named, from its magnitude as a whole. It must, beyond all dispute, form by far the shortest route between the extreme north and south. The route, too, running for many hundred miles between the lofty ranges of the Alleghenies, will be an exceedingly attractive one to the pleasure tourist, as well as the shortest and most expeditious to the business traveller. Its importance in these respects, as well as in affording an outlet for a very extensive and fertile section of country, now without the means of getting to a market, is fully appreciated by the people along its line, and they are making strenuous efforts, particularly in Tennessee and Alabama, to secure its construction. In Tennessee, the East Tennessee and Georgia road is making rapid progress towards Knoxville. From this place to the Virginia line, nearly the whole distance is under contract, and will be completed, we have no doubt, simultaneously with the Virginia and Tennessee road. The East Tennessee and Virginia company are pushing forward the work on their line with all the despatch justified by the condition of the connecting lines. The completion of these is necessary to bring the former into profitable use, as East Tennessee is destitute of mar-

kets for its products. In the south, these can only be found on the seaboard. In Alabama, the Alabama and Tennessee railroad is being pushed forward with great energy, and is aiming to connect with the Tennessee roads, either at Chattanooga, or at some point in the northern part of Georgia. We here find, upon a line of over 700 miles in extent, the people of the different sections, while laboring for a specific object, working for the good of each other, as well as their own. The convention called together delegates scattered over the whole extent of this great line, and illustrated one of the great benefits of railroads, in promoting an acquaintance between widely separated sections of country, and in extending the means of social intercourse.

Winslow's Compound Rail.

We are glad to learn that this rail is steadily gaining in favor, and rapidly being introduced on our roads. Wherever used, it realises all the advantages claimed for it, that of forming a continuous track. By this means, the weight of the train is always sustained by a long extent of superstructure, instead of a single point, as is the case on the ordinary track, at the joints. It is the concurrent testimony of all companies that have used the compound rail, that the cost of repairs of track is almost entirely saved. The same cause that prevents the destruction of the track, saves a large part of the wear and tear of the machinery used. With the new rail, roads can be operated at much less expense, than with the present form, and trains can run at much higher speed with the same power, and with much greater safety. These facts we believe are fully demonstrated, and we hold it to be incumbent upon every company, consulting economy and safety, to make use of it instead of the old pattern.

Tennessee.

We believe that a successful effort will be made, at the present sitting of the Legislature of Tennessee, to enlist the credit of that State in aid of the numerous roads now in contemplation or in progress, in various parts of it. The works for which the aid of the State is desired, are the East Tennessee railroads, the Nashville and Mississippi River, the Nashville and Louisville, the Nashville and Tennessee River, the Mobile and Ohio, and the Memphis and Charleston railroads. A well devised system of State credit, would secure the construction of a great extent of road, and with perfect safety to the State. If this can be done, there certainly can be no objection to the State becoming indirectly a party to such works. After a road had been prepared for the iron, the State might lend its credit for this article. The iron for nearly every railroad in the United States is purchased by the sale of the company's bonds, which proves that such bonds offer good security, or capitalists would not take them. But railroad bonds, though perfectly safe, cannot be sold except at a large discount, for the reason that but little can be known of these works by capitalists, who demand a large discount by way of insurance. The bonds of the State of Tennessee, on the other hand, are as saleable in the London as the New York market, and will command a premium in either. Upon \$1,000,000, in the present state of the market, it is probable that at least \$200,000 would be saved by using State, instead of road bonds. There is this additional advantage in using the former, as these, by going abroad, tend to relieve the money market, while road bonds must be sold at home, and thus

add to the demand, and increase the rates asked for money.

Pennsylvania.

Lackawanna and Western Railroad.—This road was opened for business a few days since, and is now actively engaged in the transportation of coal to supply the cities and villages of central and western New York. The above will prove a very valuable work, not only to the magnificent Lackawanna coal fields, but to a large portion of this State, in supplying it with a cheap fuel. Through the Erie road and its branches, it can reach every part of western New York at low cost. The large amount of freight which the above road will throw upon the Erie will add materially to the receipts of the latter. The Lackawanna road also opens an outlet to this market for a large tract of fine country. Its proprietors and builders have for a long time cherished a plan of making it a part of a much shorter route to Binghamton or Elmira, than by the present circuitous one pursued by the Erie road. We soon expect to see a move made to push a road from Scranton, the southern terminus of the above, to the Water Gap, to connect with the extension of the Morris and Essex railroad to that place. Should this project be realised, a great saving would be effected in the route to Lake Erie.

New York.

Rome and Watertown Railroad.—The superintendent of the Rome and Watertown railroad states that the earnings of the road for the present month will exceed \$20,000, on a cost of \$1,000,000. At the same rate for the year, the earnings will be \$240,000. Allowing one half for expenses, the net earnings of the road will be \$120,000, or 12 per ct. on its cost. The road is just finished, and the receipts are of course small, compared with what may be expected for the future.

Sodus Point and Southern Railroad.—This road will connect with the Canandaigua and Corning railroad at Hull's Corner, 35 miles from Sodus Point, and 32 from Jefferson. Only 35 miles of new road are therefore necessary to connect Lake Ontario with the Erie railroad, and with the coal fields of Pennsylvania. The distance from Sodus Point, an important place on the lake, to the Blossburg coal fields, is as follows:

From Sodus Point to Jefferson	67 miles.
Thence to Junction	18 "
" Corning	12 "
" Blossburg or Soft Coal	20 "

117 miles.

New Brunswick.

European and North American Railroad.—At a meeting of the stockholders of the European and North American railroad company, held at St. John on the 27th ult., the following gentlemen were elected directors; Hon. J. Robertson, D. J. McLaughlin, President of Commercial Bank, Geo. Botsford, President of Central Bank, Edward Allison, W. J. Ritchie, R. Jardine and C. D. Archibald; and at a meeting of the directors, R. Jardine was chosen president.

Memphis and her Railroad.

We learn that the cars for the Memphis and Charleston railroad will be built at Memphis. Forty cars have already been contracted for.

The road to LaGrange, a distance of between forty and fifty miles, it is believed will be completed by the first of August next, if none of the contractors fail. The iron for this, T rail, 60 lbs. to the yard, will be received it is thought by the middle of next month.

Cop Waste.

Railroads and steamboat companies in want of this article will do well to examine the advertisement of Mr. Hall in another column, as we are assured that the articles he sells are of the best quality.

East Tennessee and Virginia R. R.

We learn that 73 miles of the 128, the length of the above road, have been placed under contract. The payments are to be one-half cash, and one-half in the bonds of the company. The grading is to be completed in 3 years.

Ohio and Mississippi Railroad.

Operations have been commenced upon this road. We learn from the Laurenceburgh Register, that Mr. Timanus, of Cincinnati, has obtained the contract for building a bridge across the Big Miami. One hundred men have been already placed upon the work.

The Field Practice of laying out Curves for Railroads.

BY JOHN C. TRAUTWINE, CIVIL ENGINEER,
PHILADELPHIA:

We have heard so many inquiries from young engineers, for a good work on this subject, that it is with pleasure we notice this little book by Trautwine. It contains all that is required for the field operation of projecting curves; and we can recommend it with confidence as a requisite addition to the outfit of every surveying party engaged in such duties.

We owe our acknowledgements to the author for a detection of an error in a set of tables which, for many years, we have been accustomed to use with every confidence in their absolute accuracy. We refer to Gregory's eighth edition of Hutton's Tables. Hassler's Tables are so full of typographical errors that we never could use them with any confidence, although we possessed at one time a copy corrected in Mr. Hassler's own handwriting. Some of these errors are also pointed out by Trautwine; but a table of logarithms, like Cæsar's wife, "should be above suspicion"—and such until now we had always regarded the eighth edition of Hutton's Tables.—*Mechanic's Magazine.*

RAILROAD BRIDGE OVER THE GENESEE RIVER.

The railroad bridge constructing just above the upper falls, will be when completed, an object of wonder and admiration. I stepped into an engineer's office, and was favored with a view of a draft of the bridge. There are to be three piers built in the bed of the river, each thirty feet high, and three more of less height to carry the bridge to the banks on each side.

Upon these will rest a frame work supported by posts two hundred and four feet above the main piers.—The distance between the piers will be fifty feet, and the whole length of the bridge over the Gulf about five hundred feet, which will be extended at the ends by an addition of five hundred feet of trestle work, making when completed an entire bridge one thousand feet in length.—*Inventors Jour.*

Indiana.

Bellefontaine Depot.—The Main Building at the Bellefontaine Depot is up to the square ready for the roof. It is built of brick, 376 feet long by 60 feet in width, for a double track inside. The office building is 55 by 30 feet, two stories high, projecting into the platform far enough to give a full view of the inside of the whole building from the lower windows. There is to be no track in front of the building. The building is located in the centre of a five acre block of the company in the northeast part of the city, and fronts a street 100 feet wide.—The ground is high. The building presents a fine appearance from the diagonal. We learn that the machine shop, 200 by 100 feet, of brick, will be erected next season, on the west end of the ground, preparatory to building the machinery of the road. This must tend to building up the northeastern part of the city with residences of mechanics, and buildings connected with the road.—*Sentinel.*

Stock and Money Market.

We are able to note a continued improvement in the price of well known stocks. Money, however, is still difficult to be obtained out of the ordinary business channels. There is as yet but little disposition to invest in new securities, and the bonds and stocks of new works are yet a drug in the market. We cannot advise our friends to come here at present for means to carry on their works. The brokers engaged in the negotiation of bonds are full to the overflowing of such as were offered a long time since, and large quantities of fresh securities are constantly being forced upon the market. There is every appearance that the present improvement will be permanent, but capitalists have not sufficient confidence in the future, to invest freely in anything not well known.

Erie Canal.—The amount received for tolls on all the New York State canals during the 3d week in October, is.....\$145,999 93
Same period in 1850.....170,016 36

Decrease in 1851.....\$24,016 43

The aggregate amount received for tolls from the commencement of navigation to the 22d October inclusive, is.....\$2,775,525 31
Same period in 1850.....2,565,956 49

Increase in 1851.....\$209,568 82

Railway Share & Stock List;

CORRECTED WEEKLY FOR THE
AMERICAN RAILROAD JOURNAL.

NEW YORK NOVEMBER 1, 1851.

GOVERNMENT AND STATE SECURITIES.

U. S. 5's, 1853.....	101½
U. S. 6's, 1856.....	104½
U. S. 6's, 1862.....	109½
U. S. 6's, 1862—coupon.....	114½
U. S. 6's, 1867.....	115½
U. S. 6's, 1868.....	115½
U. S. 6's, 1868—coupon.....	122½
Land Warrants.....	140a145
Arkansas 6's.....	52a53
Alabama 5's.....	91a92
Indiana 5's.....	83
Illinois 6's, 1870.....	65a68
Kentucky 6's, 1871.....	104½a106
Massachusetts sterling 5's.....	105a106
Massachusetts 5's, 1859.....	100½
Maine 6's, 1855.....	103
Maryland 6's.....	102½
Michigan.....	—
Mississippi.....	—
New York 6's, 1855.....	103½
Ohio 6's, 1860.....	107½
Pennsylvania 5's.....	91

RAILROAD BONDS.

Atlantic and St. Lawrence, 6 percent.....	85
Baltimore and Ohio, 1867.....	94½
Boston and Providence 6's, 1855.....	101
Boston and Worcester 6's, 1855, convertible.....	107½
Bost., Concord and Mont. 6's, 1860, mortgage.....	87½
Cheshire 6's, 1860.....	91½
Connecticut River 6's, convertible.....	89
Erie 7's, 1859.....	96
Erie 7's, 1868.....	108½
Erie income 7's.....	93½
Hudson River 7's, 1853.....	101½
Michigan Central, convertible, 8's, 1856.....	104½
New York and New Haven.....	100½
Norwich and Worcester, mortgage, 1860.....	80a85
Old Colony, 1854.....	97½
Ogdensburg 7's, 1859.....	91
Portsmouth and Concord.....	80a85
Passumpsic 6's, 1859.....	94½
Rutland 7's, 1863.....	91
Reading mortgage, 1860.....	78
“ “ 1870.....	75
Sullivan, mortgage 6's, 1855.....	75
Vermont Central 6's, 1852.....	90
“ “ 6's, 1856.....	85
Vermont and Massachusetts 6's, 1855.....	86

RAILROAD STOCKS.

[CORRECTED FOR WEDNESDAY OF EACH WEEK.]

	Oct. 29.	Oct. 22.
Albany and Schenectady.....	89½	93
Atlantic and St. Lawrence.....	60a65	—
Androscoggin and Kennebec.....	30a35	—
Boston and Maine.....	104	103½
Boston and Lowell.....	108	109
Boston and Worcester.....	102	102
Boston and Providence.....	89½	86
Bost., Concord and Montreal.....	36	—
Baltimore and Ohio.....	67½	—
Baltimore and Susquehanna.....	34	—
Cheshire.....	47	47
Cleveland and Columbus.....	—	—
Columbus and Xenia.....	—	—
Camden and Amboy.....	—	—
Connecticut River.....	60	—
Delaware and Hudson (canal).....	109	108½
Eastern.....	95½	95½
Erie.....	84	83
Fall River.....	94½	94
Fitchburgh.....	109½	109
Georgia.....	—	—
Georgia Central.....	—	—
Harlem.....	68	69½
Hartford and New Haven.....	123	—
Housatonic (preferred).....	—	—
Hudson River.....	73	73½
Kennebec and Portland.....	50a55	—
Little Miami.....	—	—
Long Island.....	15	14½
Mad River.....	—	—
Madison and Indianapolis.....	90	93
Michigan Central.....	105	106½
Montgomery and West Point.....	—	—
Michigan Southern.....	—	—
Manchester and Lawrence.....	70	—
Morris (canal).....	14½	15½
New York and New Haven.....	109	109½
New Jersey.....	—	—
Northern.....	67	68
Nashua and Lowell.....	107½	—
New Bedford and Taunton.....	108	—
Norwich and Worcester.....	57	46½
Norfolk County.....	9	9½
Ogdensburg.....	33½	32
Old Colony.....	66	65
Passumpsic.....	70½	72
Pennsylvania.....	—	—
Pittsfield and North Adams.....	95	—
Philadelphia, Wilm'gton & Balt.....	27½	26
Petersburg.....	—	—
Richmond and Fredericksburg.....	—	—
Richmond and Petersburg.....	—	—
Reading.....	56	56½
Rochester and Syracuse.....	105½	107½
Rutland.....	45	42½
Stonington.....	52	44
South Carolina.....	—	—
Syracuse and Utica.....	123½	—
Sullivan.....	15a20	—
Taunton Branch.....	108	110
Troy and Greenbush.....	90	—
Tonawanda.....	—	—
Utica and Schenectady.....	127½	127½
Vermont and Canada.....	97	99½
Vermont Central.....	27	27
Vermont and Massachusetts.....	26	25
Virginia Central.....	—	—
Western.....	103½	104
Wilmington and Raleigh.....	—	26
York and Cumberland (Pa.).....	19½	—

Indiana.

A movement is making to secure the construction of a railroad from Peru on the Wabash canal, to form a connection with the northern Indiana railroad, probably near Goshen. The line of the proposed road traverses one of the best districts in the State, and is much better able to construct the road than that from Indianapolis to Peru, which are soon to be connected by railroad, built almost entirely by the people along its line. A company has been organized for the above purpose, and steps are to be immediately taken to have the route surveyed, with a view to putting it under contract.

Page's Electro Magnetic Engine.

We had the pleasure of being present on Thursday night at an exhibition of Mr. Page's Electro-Magnetic Engine, and from a personal observation, will endeavor to give our readers some idea of its construction and uses. A number of circular helices are placed together so as to form two cylinders. These cylinders are placed in the line of their axes, but far enough apart to be out of the sphere of mutual attraction. They are connected each with a galvanic battery, so that they may be alternately charged and discharged. A bar of iron passes through these two cylinders, and according as each is charged, is drawn within its axis. The cylinders being charged alternately, the effect is to cause the bar to pass from one to the other. The induction and cessation of the electrical currents rapidly follow each other, and as a natural consequence, the bar moves with a corresponding speed. Attached to this bar of iron is a shaft, which turns a crank connected with a large fly-wheel. A band passing over this wheel, and connected with others, would set in motion a great amount of machinery. When we were present, a lever of 11 feet long was made to press upon the circumference of this fly-wheel, and upon the extremity of this lever a hundred pounds weight was placed, causing a pressure on the wheel of more than 1100 pounds. Notwithstanding this, the engine did not seem to be at all impeded in its motion. With some improvements this motive power might be applied with success to mechanical purposes, and should this be the case, it would obviate many of the objections now brought against the use of steam as a motive power. It is not liable to any of the accidents resulting from steam, and is entirely under the control of the operator. An engine moved by this power occupies less room than a steam engine, and is of much simpler construction. It is also more economical, the expense attendant upon the use of fuel being entirely done away with. There may some doubt arise as to the power of this magnetic attraction, but with a well-constructed engine it will be found sufficient for all needful purposes. This invention of Mr. Page's is undoubtedly a great invention, and we see no reason why it should not in time supersede the use of steam, at least as a propelling power.

Michigan Southern and Indiana Northern Railroad.

These roads, in connection with a short line from the Indiana State-line to Chicago, of about 13 miles, forms a continuous road from Toledo to the former place, 243 miles in length. The entire cost of both roads will be about \$4,500,000. The road was opened in September last to South Bend, 130 miles from Lake Erie. The rails have been purchased for the whole road, and are being distributed along the line. It is contemplated to have the track laid from Toledo to Chicago by the first of January, with the exception of 13 miles, from Laporte to Michigan City, (for which distance there is a plank road;) and the whole line completed in March next. We copy from the recent exhibit of the Northern Indiana company the following description of their line in that State, with its connections and branches:—

This embraces the entire main line of road from its connection with the Michigan southern road, through Elkhart, Mishawakie, South Bend and Laporte, to the boundary of Illinois, about 100 miles—a line to and from Michigan city of about 25 miles, uniting with the same, and a line of 10 miles, from Elkhart to Goshen, making in all, about 135 miles.

The company hold also by lease and contract, a line from the western boundary of Indiana to Chicago, of about 13 miles.

Thus by a connection, by an existing contract, with the Michigan southern railroad, this company have a continuous line of railroads from the head of Lake Erie, at Monroe and Toledo, in a very direct course, through southern Michigan and northern Indiana, to the city of Chicago, a distance of 246 miles, and from Toledo, 243.

At Chicago, this line of road connects at the same station with "The Chicago and Rock Island railroad," to extend in nearly a direct west course, through Joliet, Ottawa, La Salle and Peru to the Mississippi, at Rock Island, 180 miles, striking that river in the direction of Iowa city and the Council Bluffs.

The Chicago and Rock Island company has been organized; the required subscriptions made to the stock, and a contract made with responsible contractors for the completion of the entire work, including masonry, grading, iron-rails and track, stations, cars and engines.

At Toledo, this line of roads unites with the great chain of railroads, along the south shore of Lake Erie, through Sandusky, Huron, Norwalk, Cleveland, Painesville, Ashtabula, Erie and Dunkirk to Buffalo. This *south shore* line connects at Sandusky, with the existing railroad to Cincinnati, and with the Mansfield road; at Cleveland with the road to Columbus and Cincinnati, already in successful operation, and with the line to Pittsburgh, to be opened the present season. The whole south shore line will probably be completed in the course of next season, and parts of it will be opened the present year. When opened, the journey from Chicago to New York, *entirely by railroad*, may be performed in 34 hours.

Railroad from Cincinnati to Charleston and Savannah.

The project, which, in 1836, engrossed so much attention and interest throughout the Southern and Western States, that of a railroad from *Charleston to Cincinnati*, seems now likely to be realized at a comparatively early period. The old project of the Charleston and Cincinnati railroad was founded upon general ideas of the wants of our internal commerce; but with the little knowledge which then existed as to the proper route, the limited means at command, and the slight experience which then existed in railroading, a scheme of such magnitude, involving the construction of 800 miles of railroad, most of it through a country but thinly settled, could hardly help falling through.—During the 15 years that have since elapsed, great changes have taken place. Companies having local objects in view merely, have already reached the Tennessee river, and a continuous line of railroad will soon be formed between the cities of Charleston and Savannah, and Knoxville, the chief town of East Tennessee, which is 518 from the former and 502 from the latter city. On the northern end of the line, the road is under contract from Covington to Lexington, 100 miles. From Lexington to Danville, 27 miles. Sufficient means are provided, and this link will soon be placed under contract. From Danville to Knoxville the distance is 18 miles, making the whole length between the points named as follows:—

Cincinnati to Danville, via Lexington,	
Ky.....	128 miles.
Danville to Knoxville.....	180 "
Knoxville to Dalton, Ga.....	110 "
Dalton to Atlanta.....	100 "
Atlanta to Savannah.....	292 "
To Charleston.....	810 "
Cincinnati to Atlanta, as above.....	518 "
Atlanta to Augusta, Geo.....	171 "
Augusta to Charleston.....	137 "

826

No steps are yet taken towards the construction

of the link between Danville to Knoxville; but when we consider the vast utility of a railroad communication between the south and the Ohio river, and that of the whole line, the construction of more than three-quarters is already secured, that of the part untouched, the greater portion can be built by the people on the route, and as the roads either finished or in progress, have the strongest interest in supplying this gap, we cannot believe it will long remain unfilled.

Louisville as well as Cincinnati would be connected with this route; and as both of these cities will shortly be connected with the great lakes and the Mississippi, the early completion of the line from Danville to Knoxville becomes still more important. If the people upon the line of the road could prepare it for the iron, we cannot doubt that the numerous companies interested in having the connection formed would provide the means for the article.

The great pet project of South Carolina seems at last on the eve of accomplishment, though upon a very different line and in a very different manner from that originally contemplated. The realization of this great project, which cannot fail to add very largely to the commercial importance of Charleston, and the prosperity of the whole State, will, it is hoped, have a salutary influence upon the present discontented feelings of her people.

Pittsburg and Rochester Railroad.

A strong interest is felt in Pittsburg in reference to the construction of the above road, which is there regarded a very important work for that city. A late number of the Pittsburg Gazette gives the following description of the route, dividing it into sections, to correspond to its natural features.

1st. *From Pittsburg to the mouth of the Kiskiminetas, 29 miles.*—This section is nearly level, having only the ascent of the river, two feet to a mile. Coal, salt, lime and building-stone, are the chief mineral productions. The adjoining country is fertile and populous, and would throw a large amount of trade and travel upon the road on the north bank of the Kiskiminetas, the road would cross the Pennsylvania canal, from which it would obtain a great accession of travel, and it is calculated that it will at least pay the interest upon its cost when completed to this point.

2nd. *From the Kiskiminetas to the Mahoning, 27 miles.*—This section in its general features, very much resembles the one already described. Coal is not so abundant as in the first section, but there is an abundance here. Both salt and limestone are found in considerable quantities. Iron is found in this section, and any quantity might be manufactured were there adequate demand. The only town of importance is Kittanning, the county seat of Armstrong, containing a population of about 2,000. The abundance and cheapness of coal at this place, the healthiness of the climate, and the fertility of the surrounding country, render it well adapted to become the seat of extensive manufactures. Supposing the road to leave the Alleghany river at the mouth of the Mahoning and to proceed up the latter river, (which route if found practicable is the shortest.) We shall have for the third section,—
The valley of the Mahoning, 20 to 30 miles.—This valley is very rich in iron ore, and heavily timbered. Coal also exists in great abundance. In the range now under consideration, there are several iron furnaces, all of which yield a large return of excellent quality. The soil of the Mahoning valley, a few miles from the river becomes good, and so continues to the head of the stream

The streams is navigable for 50 or 60 miles for rafts and flat boats during freshets, but there is no ascending navigation. Near the Alleghany the country is very much broken, but at a distance of 25 or 30 miles, we reach what might be called table land over which a railroad might be carried without difficulty.

4th. *From Mahoning to Clarion about 30 miles.*—

The features of this section are very different from those of the three first. The country is comparatively level, the soil good, and heavily timbered. All the larger streams are skirted with hemlock and pine; the hemlock is generally found on the lowest ground, the white pine occupying the ascending slopes, towards the tops of which it becomes mingled with oak, maple, beech, hickory, cherry, yellow pine, &c. The smaller streams are skirted with the varieties of timber last mentioned, except the yellow pine, which is only found on elevated and dry land. This is a region of great resources and is rapidly filling up in population.

5th. *From the last named point to Olean an air line of about 75 miles.*—This would probably be confined to the valleys of the Clarion and the west branch of the Alleghany. In its general feature the country through which it passes is very much like the last section. It traverses the very heart of the pine region, and it is impossible to estimate the amount of freight which could be derived from this article alone.

There are said to be extensive deposits of bituminous coal of excellent quality in the upper part of the valley of the Clarion, which will afford an important item of trade to that end of the road, and be of incalculable benefit to the people of western New York, who are altogether destitute of this mineral. It is estimated that the local trade and travel between Pittsburg and Olean, to say nothing of the through travel and traffic, will make this one of the best paying roads in the county.

6th. *From Olean to Rochester.*—It is not necessary to speak particularly of this section, suffice it to say, that the line would pass the greater part of the way down the valley of the Genesee, one of the richest agricultural regions in the world.

The facilities offered for the construction of this route and the advantages it will possess over the present modes of communication between Pittsburg and Rochester render it probable that it will be soon undertaken and successfully carried through.

Indiana.

New Albany and Salem Railroad.—Twenty-six miles of this road, lying between this city and Kankakee river, has been let by Mr. Gonzales, the engineer in charge of the work, to Messrs. L. and H. Kent, of New York. The contractors have their laborers engaged, and will commence operations next week. The contract is to be completed during August next. The remaining four miles this side of the Kankakee will be let in a few days.

The line proves to be much more favorable than was anticipated. Mr. Gonzales was authorized to establish a grade of fifty feet to the mile; but he has succeeded in obtaining a maximum of 42.

The survey of the route has been completed to within twenty-one miles of Lafayette, a distance of seventy miles. The line is said to be a very favorable one. Fifty-six miles of the route is a perfectly straight line, and will be the longest straight line in the world. There are but three miles of curve in the whole seventy.

We understand that Mr. Gonzales, who is prosecuting the work with all practicable despatch,

will shortly proceed to Lafayette and will survey and locate the remaining twenty-one miles. We are informed that that part of the line between Lafayette and the Kankakee will be under contract in about two months. The whole line from Lafayette to Michigan City will probably be ready for the iron during the coming year.—*Michigan City News.*

Buffalo and Brantford Railroad.

The Chicago Tribune furnishes us with the following statement in reference to the Buffalo and Brantford railroad. The capital of the company is \$600,000, 84 per cent has been paid in, and the following officers elected.

James Wadsworth, of Buffalo, President; A. D. Patchin, of Buffalo, Alexander Douglas, Fort Erie, A. Huntington and I. Cockshutt, of Brantford, Directors; William Wallace, Buffalo, Chief Engineer; James Christie, (Bank of British North America,) Brantford, Treasurer; Archibald Gilkison, Esq., Brantford, Secretary and Solicitor.

The distance of the road, will be 75 miles. The estimated cost is \$1,200,000—half of this amount of stock will be issued for and the other half bonds will be sold guaranteed by the Provinces.

The entire road has been put under contract, and work will be commenced next month. The contractor is Mr. A. DeGraff, of Dayton, Ohio. By the terms of the contract, the road is to be completed and the track laid, for the sum of \$400,000—the contractor receiving \$100,000 stock, in part payment for his work. The only considerable expenditure remaining unpaid for, is the purchase of the iron.

Townships along the line of the road are subscribers to the stock in their corporate capacity, under by-laws passed at the request of the taxpayers of the several municipalities.

Council of the town of Brantford.....	\$100,000
Municipality of the township of Brantford.....	50,000
Municipality of the township of Bertie..	40,000
Do. do. Wainfleet	20,000
Do. do. Sherbrook and Moulton.....	20,000
Municipality of township of Camboro...	8,000
	\$238,000

Stock held by stockholders in Canada, at Brantford and along the line.....	50,000
Stock to be issued to contractor.....	100,000
Stock held to be paid out of for right of way, and distributed in Buffalo.....	212,000

There remains then for subscription on the part of the citizens of Buffalo as their share of the stock, the sum of \$200,000, and this ensures the completion of the railroad from Fort Erie to Brantford, within the period of eighteen months.

Springfield X Roads, Pa., Oct. 24th, 1851.

H. V. POOR, Esq.,

Dear Sir—It may be interesting to some of the readers of your Journal to know what is doing in this section in railroad matters. In the connecting link of the great chain from the Atlantic seaboard to the Pacific, the "Franklin Canal Railroad" sustains a very important relation. After a series of obstacles to its progress, (which has been watched with hope and doubt by its friends and opposers,) it seems that it will soon be constructed. The line extends from Erie, Pa., to the State-line of Ohio, a distance of about 26 miles, where it connects with the "Cleveland, Painesville and Ashtabula railroad." The main features of the work are its bridges, the grading being light, no curves of more than 1.30, and most of the distance a straight line. The heaviest grade is 18 feet to the mile. The road seems to owe its origin and success to its able and indefatigable President, the Hon. John Galbraith, and in fact is generally called "Galbraith's Road." The road must be the best stock in the country, as it has no competition, from the fact

that no line can be traced south of it, owing to the peculiar configuration of the country, consequently the whole travel must pass through it.

The bridging, as I have stated, is a great item, and from the model of one, and the plans of the others, the Engineer, Alex. C. Twining, deserves much praise for originality of design, combined with economy of strength and beauty. The ravines bridged are from 800 to 1,400 feet wide, and two of them over 100 feet deep. The bridges are composed of bents 20 feet apart, and set one above the other to the top, and a combination of lattice. It is intended the cars shall pass over the road next summer, and if success attends its construction equal to its efficient management, you may have the pleasure of a trip next August. The organization of the road consists of Hon. John Galbraith, President; Wm. S. Lane, Treasurer; W. Galbraith, Secretary; Alex. C. Twining, Chief Engineer.

Railroad Injunction.

The Peru and Indianapolis railroad company have joined the Newcastle and Logansport railroad company from crossing the track of the former. The following are the sections in the charter of the Peru company relied upon in support of its right to prohibit any other company from crossing its track:—

Sec. 19. That when said corporation shall have procured the right of way, as hereinbefore provided, they shall be seized, in fee simple, of the right of such land, and they shall have the sole use and occupancy of the same, but not to interfere with the right of way of any railroad company heretofore incorporated; and no person, body politic or corporate, shall in any way interfere with, molest, disturb or injure any of the rights or privileges hereby granted, or that would be calculated to detract from or affect the profits of said corporation.

Sec. 31. The corporation may, by contract, admit the intersection with said road of any other railroad, turnpike or other road, or any collateral road.

The above seems to be conclusive against the Logansport company. The Legislature of the State will not probably interfere in the matter, as it is for the interest of a large portion of her people, and nearly all her railroads, that the routes from Cincinnati to Chicago should pass through Indianapolis. The Peru company, it appears, has a vested right in its track, which cannot be interfered with.

We cannot see any reason for the Newcastle and Logansport road, and it is undoubtedly for the interests of all parties that the injunction should stand. Logansport is but 18 miles from Peru, and a side cut can at a very trifling expense, be taken to that town. By building a short road from Newcastle to Noblesville, a very direct route would, in connection with the Peru road, be formed between Cincinnati and Logansport. The latter company, as we are informed, are willing that their track should be crossed at that point.

Improvement of the Navigation of the Mississippi River.

A convention was held at Burlington, Iowa, on the 15th, to concert measures for the improvement of the navigation of the Upper Mississippi. The chief obstructions, are the falls or rapids as they are termed, which occur in a number of places. The convention has been regarded with great interest by all the inhabitants residing in the vicinity of the river, or interested in its navigation. The encroachment of New York upon the trade of the Upper Mississippi valley, has aroused the people of New Orleans and St. Louis to the necessity of

taking some effectual steps to defeat the designs of their ambitious rival. We look for the proceedings of the convention with much interest as they will undoubtedly contain many valuable statistics in relation to the conference of the Mississippi river and the west.

Ohio and Pennsylvania Railroad.

We give in another place a detailed account of the opening of a further section of this road, extending ten miles west of New Brighton, or to a point 38 miles west of Pittsburg, by a continuous rail.

This new section scales the river hills by the slopes of Big Beaver, with a prolonged grade equivalent on tangent and curve to 47½ feet per mile of ascent on a right line.

The curvature of this 10 miles is chiefly on radii of 1000 feet, the minimum of curvature and maximum gradient of the road being freely applied to overcome the difficulties of gaining the summit at Darlington, on the table lands of Ohio.

This interesting extension of the road clears all the heavy work of the line, which, as is usual with the Ohio lines, is greatest in ascending from the river to the general plain of the State.

In returning from New Brighton to Pittsburg the "Salem," a little Norris' engine brought up the excursion car, 28 miles in 44 minutes including stops.

One mile was run in a minute, and 13 miles continuously in 17 minutes.

This, we believe, is about the best railroad time yet made in the west, and would do well for the fast trains on the Hudson River road.

Syracuse and Binghamton Railroad.

This road extending from the city of Syracuse to Binghamton will be about seventy miles in length. It will in conjunction with the Oswego and Syracuse railroad, thirty-five miles long, open to the New York and Erie railroad a communication with Oswego—furnishing to that road a short and direct connection with the commerce of Lake Ontario at its most important harbor.

It will also furnish to the Legget's Gap railroad, lately opened, a direct communication with the salt works at Syracuse and the lake at Oswego for its coal, and when a contemplated link of about thirty miles in length, north from Syracuse to intersect the Rome and Cape Vincent railroad at Pulaski is made, will give the railroads in the northern part of the State access to the coal fields at Scranton.

This road will also furnish in the central part of the State a convenient communication between our central and southern railroad. S.

Ohio.

The citizens of Piqua, Ohio, are making strong efforts to extend the Hamilton and Eaton railroad to that place. The people in the proposed line of the road are constructing with great liberality, and strong confidence is expressed that the project will succeed. It is said that this route will effect a saving over that by Dayton of 4½ miles, in going to Piqua, and 17½ miles in going to Greenville.

Pennsylvania.

Hanover Branch Railroad.—The Hanover Spectator says that the Hanover Branch railroad is progressing to a speedy termination. Nearly a mile of the track has been laid with rails at the lower end, and it is confidently expected that the work will be ready for the running of cars by the first of January, 1852.

Virginia.

James River and Kanawha Canal.—The section of the canal between Lynchburgh and North River, in Rockbridge county, was opened for the transportation of merchandise, on the 1st inst.

This opening carries the canal through the Blue Ridge into the Valley of Virginia, and will probably add largely to the receipts of this work.

We find it stated that Professor Tuomey, of Alabama, is about to visit Virginia, by invitation from the Governor, for the purpose of examining into the practicability of extending the James River and Kanawha canal to the Ohio.

Toronto and Lake Huron Railroad.

We gave in a recent number an account of the opening of this road. The estimated cost of the work is \$2,000,000. The means provided for its construction are as follows:—

Government guarantee of bonds.....	\$1,000,000
County of Simcoe subscription.....	200,000
Gratuity of city of Toronto.....	100,000
City of Toronto guarantee of bonds....	150,000
Individual subscriptions.....	200,000
Contractor in stock.....	100,000
	<hr/>
	\$1,750,000
Not yet provided.....	250,000
	<hr/>
	\$2,000,000

Texas.

In view of the probable construction of the New Orleans and Opelousa railroad, the people of Texas are moving to secure the extension of this line into that State. A convention was recently held at Bankville, Texas, moving this object. It is stated that if the road can be constructed through Louisiana, that no difficulty will be found in carrying it through the State of Texas. Already \$800,000 are raised for the construction of the road from the Sabine to the Trinity river. In Louisiana and Texas the above project is regarded as the germ of a road leading to the Pacific ocean.

North Carolina Railroad.

We learn that the entire length (223 miles) of the North Carolina Railroad is under contract, except the larger bridges, which will be let soon.—The first division is taken by one company at \$650,000, to complete and equip it.

North Carolina.

Raleigh and Gaston Railroad.—Mr. Bird, the superintendent, was in this city on Saturday, and while here, received a despatch, stating that 700 bars of iron, which he had purchased at the north, had arrived at Garysburg. Mr. B. immediately made arrangements, through the telegraph, by which the iron was probably delivered at Gaston on Monday evening. We learn that it will be immediately laid, and so much of the road as the new rail will cover, be put in thorough order. The cargo from Europe may be shortly expected, and the calculation consequently is, that it will not be many months before the whole road will be "redeemed and regenerated." This efficiency speaks well for those into whose hands the road has been committed.

We learn that there will be no cessation of the regular operations of the road, and no detention, indeed, during the progress of its re-construction. —*Raleigh Register.*

Railroad Iron.

THE undersigned offer for sale 1000 tons Railroad Iron, (about 56 lbs. to the yard,) now at Brooklyn.

CHOUTEAU, MERLE & SANFORD,
Oct. 1, 1851. 51 New st.

M. B. Hewson, Civil Engineer,
(Open to a New Engagement.)
Memphis, Tenn.

To Contractors.

OFFICE WILMINGTON & MANCHESTER R. R. Co., }
Marion C. H. S. C., October 18, 1851. }
SEALED PROPOSALS will be received until the 15th of December next, for the Piers of a Bridge across the Great Pee Dee River. The job comprises four piers, one a very heavy pier for a draw, and the sinking of cast iron hollow piles by "Dr. Pott's Pneumatic Process," for forming foundations. The plans and specifications of the piers will be exhibited by the Secretary of the Company at Marion Court House, and by the Resident Engineer, L. J. Fleming, Esq., at Wilmington, North Carolina. **WALTER GWYNN,**
Chief Engineer Wilm. and Man. R.R.
November 1. Richmond, Va.

Best Cast Steel Axles & Tires, (A NEW ARTICLE.)

For Railroad Carriages and Locomotives.

THE quality of this Steel is sufficiently attested in the announcement that it has carried off the first prizes awarded at the World's competition of 1851, in London. The axles are in general use on the Continent, and are now offered in competition with any other that can be produced; and to be tested in any way that may be desired by the Engineers of the United States, either by impact or by torsion. This Steel is manufactured by Fried Krupp, Esq., of Essen, in Renish Prussia, represented in the United States by

THOS. PROSSER & SON,
28 Platt st., New York.

November 1.

Engine Waste.

CLEAN WASTE for Locomotive and Steamboat Engines, in lots as wanted; also, superior Steam Packing. Orders, with explicit directions for forwarding, should be addressed to

J. MORTIMER HALL,
36 South st., New York.

November 1. 3m

Notice to Contractors.

Atlantic and St. Lawrence Railroad.

THE Sixth and last Division of the Atlantic and St. Lawrence railroad will be placed under contract on the 10th day of November next, and proposals will be received until that date by the subscribers, at Sargeant's Tavern in the town of Northumberland, N. H.

Plans and profiles will be in readiness for examination at the Engineer's Office in Northumberland, on and after the 1st of November.

This Division extends from the Connecticut River in the town of Stratford, N. H., to the boundary line of Canada, a distance of about forty miles.

No Spirituous Liquors will be allowed on the work, and bids of contractors who have heretofore failed to pay their laborers, on this, or any other work, will not be considered.

Cash payments will be made monthly, reserving ten per cent. until the final completion of the contract.

JOHN M. WOOD & CO.

October 14th, 1851.

To Stone Masons.

THE NEW ALBANY AND SALEM RAILROAD Company have about 10,000 c. yards of Abutment Masonry to let at private contract, to be completed by the 1st of July, 1852.

To contractors who can produce testimonials of character for ability as STONE MASONS, fair, remunerating prices will be given.

Early applicants, by securing the work now offered, will gain advantages over competitors for the erection of an additional 15,000 yards, to be let out early next spring, in bridging the streams between Bedford and Michigan City, via Bayouette, Gosport, Crawfordsville and Lafayette, (the most productive and healthy region in Indiana,) by the knowledge they will have acquired of the resources of the country.

Application may be made in person, or by letter addressed to the undersigned, at New Albany, Indiana. **S. B. WILSON, Engineer.**
Engineer's Office, New Albany, }
Sept. 29th, 1851. }

Railroad Iron.

THE undersigned are prepared to enter into contracts now at specific prices, to deliver Railroad Iron during the coming Winter and Spring, free on board at the shipping ports in Wales, or at ports in the United States.

CHOUTEAU, MERLE & SANFORD,
Sept. 30, 1851. No. 51 New st.

Notice to Bridge Builders.

PROPOSALS will be received at the Engineer's Office at Charlottesville, Va., on the 14th of November, for the construction of a bridge over Mechum's river, on the Virginia Central Railroad. The length of the Bridge will be 350 feet, in three spans. Height of Bridge above the river 70 feet. Bids will be received on Howe's plan and Town's lattice. The work to be finished by the first of July, 1852, but the timber to be procured at once. Plans and specifications will be ready to be exhibited on the 28th inst.

T. GOLDEN RUGGLES,
Civil Engineer Va. Central R. R.

Charlottesville, Oct. 11, 1851.

N. B.—Good timber may be procured in the vicinity of the line of the road, which will be in operation to a point 3 miles from the bridge.

SIX HUNDRED THOUSAND DOLLARS SOUTHERN INDIANA RAILROAD 7 PER CENT MORTGAGE BONDS.

The Northern Indiana railroad company offer for sale \$600,000 of their 7 per cent. mortgage bonds with interest coupons annexed.

They are in sums of \$1,000 each, payable August 1st, 1861, with interest at 7 per cent. semi-annually on the 1st of February and 1st of August, payable at the Mechanics' Bank in this city, where the principal is also payable, and are secured by a mortgage to Shepherd Knapp, Esq., of New York, in trust for the bondholders.

They are issued under acts of the Legislature of Indiana, authorising their issue and the mortgage as above, to secure the same. The amount of bonds to be thus issued under the mortgage, is limited to One Million of dollars, \$400,000 of which have been disposed of, and \$600,000 are now offered for sale.

The mortgage covers the whole road of the company in Indiana, and is the first and only lien thereon.

This embraces the entire line from its connection at the State line of Michigan with the Michigan Southern road (of which it is an extension) through Elkhart, Mishawaka, South Bend, and Laporte, to the boundary of Illinois, about 100 miles: a line to and from Michigan city of about 25 miles, connecting with the same, and a line of 10 miles from Elkhart to Goshen—making in all about 135 miles of road.

The company hold also, by lease and contract, a line from the western boundary of Indiana to Chicago, of about 13 miles.

By an existing contract between this company and the Michigan Southern company, a continuous line of railroads is formed from the head of Lake Erie, at Monroe and Toledo, in a very direct course through Southern Michigan and Northern Indiana to Chicago—a distance from Monroe of 246 miles, and from Toledo of 243—all to be under one superintendence and management, and for all practical purposes forming one joint interest.

At Chicago this line of road connects with the "Chicago and Rock Island road," to be extended to the Mississippi river, at Rock Island, 180 miles long, and which is under contract.

Also, with the Chicago and Galena railroad, about 84 miles of which is now about completed and in use, the entire line of which, it is expected, will be completed to the Mississippi river in all next year.

Also, with the Illinois Central railroad, to run from Cairo, at the mouth of the Ohio river, to Chicago.

At Toledo it unites with the great chain of railroads along the shore of Lake Erie to Cleveland, Dunkirk and Buffalo. This whole south shore line will probably be completed in the course of the next season, and parts of it will be opened for use the present year.

The whole line of roads of this company is under contract; the grading and bridging on 60 miles are completed, and the rails laid on 50 miles of it. The iron has been purchased for the whole road from the boundary of Michigan to Chicago, and most of it is delivered on the line ready for use. The road is finished 30 miles to South Bend, to which point the cars are now running from Monroe and Toledo, and the work of laying down the rails is in active progress upon the residue of the line. The main line from the East to Laporte (some 56 miles) will be opened next month, and the whole road from Lake Erie to Chicago, in March next, when the journey from Lake Erie to Chicago, may easily be made in 8 hours.

The means for the construction and equipment of the Northern Indiana road are provided by stock and bonds.

Nearly one million of dollars are subscribed to the stock, about \$850,000 of which is taken in New York and the Eastern States, the remainder along the line of the road. An average of 50 per cent. has been paid on these subscriptions, and the residue is being regularly paid at the call of the company.

For providing the remaining means required to complete the work, the company have issued their Mortgage Bonds to the amount of one million of dollars in all, as above stated, proceeds of most of which are wanted to pay for iron rails, machinery, &c.

The mortgage empowers the trustee, in case of failure to pay either interest or principal, to take possession of the road, with its equipments, and receive its earnings, or to sell the same, on due notice, and apply the proceeds in payment.

That this road will prove one of great usefulness and profit will at once be seen by reference to a map of its line and connections, being an essential link in the great chain of railways from the city of New York to the Mississippi river along the southern extremity of the two great Lakes, traversing as it does one of the most productive agricultural regions in the United States, while its cost per mile will be less than one-half the usual cost of railroads of the same class in the Eastern States. As a local road alone, giving an outlet to the productive region it traverses, it is confidently believed that it will pay a large profit upon its cost without reference to its connections.

The proof of this is found in the earnings of the Michigan Southern railroad for the past five months which, until its connections are formed is to be regarded as a local road, and is of about equal length with the Northern Indiana road, and traverses a country not more productive, viz:—

For May, 1851, \$24,427	For August, 1851, 24,196
For June, do.... 22,511	For September, do, 35,217
For July, do.... 20,603	

Total..... \$126,954
It will be thus seen that the security offered is of the highest character.

Sealed proposals will be received for any amount not less than \$1,000, until the 12th day of November next, at 3 o'clock P. M.

Proposals may be addressed to WINSLOW, LANIER & CO., No. 52 Wall-street, or E. C. LITCHFIELD, Treasurer of the Company, No. 47 Beaver-st., indorsed "Proposals for Northern Indiana Railroad Bonds."

Twenty-five per cent. of the purchase money will be required to be paid immediately upon acceptance of the bids; and the remainder in equal payments on the 25th of November and the 10th of December next. Any purchaser will be at liberty to pay in full at once, and interest upon the bonds will run from date of payment.

Three hundred thousand dollars (one-half the amount now offered) will be disposed of absolutely and without reserve, to the highest bidders.

The company reserve the right to withdraw the remainder, if the offers are not satisfactory.

All necessary information in relation to the bonds together with maps, may be obtained by the calling on Winslow Lanier & Co., or E. C. Litchfield, at either of which places copies of the bonds and mortgage may be had.

GEORGE BLISS JOHN STRYKER.
EDWIN C. LITCHFIELD, CALVIN BURR,
HUGH WHITE, Committee of the Directory,
New York, Oct. 20, 1851.

STATE OF NEW YORK.

SECRETARY'S OFFICE, ALBANY, August 27, 1851.—To the Sheriff of the County of New York. Sir:—Notice is hereby given that at the General Election, to be held in this State, on the Tuesday succeeding the first Monday of November next, the following officers are to be elected to wit:

A Judge of the Court of Appeals, in place of Samuel A. Foot.

A Secretary of the State, in place of Christopher Morgan.

A Comptroller, in place of Philo. C. Fuller.

A State Treasurer, in place of Alvah Hunt.

An Attorney General in the place of Levi S. Chatfield.

A State Engineer and Surveyor, in the place of Hezekiah C. Seymour.

A Canal Commissioner, in the place of Charles Cook.

An Inspector of State Prisons, in the place of Alexander H. Wells.

All whose times of service will expire on the last day of December next.

Also a Justice of the Supreme Court, for the First Judicial District, in the place of James G. King, whose term of service will expire on the last day of December next.

Also a Senator for the Third, Fourth, Fifth and Sixth Senate Districts, in the place of Richard S. Williams, Clarkson Crolius, James W. Beekman, and Edwin D. Morgan, whose term of service will expire on the last day of December next.

County officers to be also elected for said County. Sixteen Members of Assembly.

A Register, in place of Cornelius V. Anderson.

A Recorder, in the place of Frederick A. Tallmadge.

Two Judges of the Superior Court, in the place of Thomas J. Oakly and John L. Mason.

A Judge of the Court of Common Pleas, in the place of Daniel P. Ingraham.

A Surrogate, in the place of Alexander W. Bradford.

A Commissioner of Streets and Lamps, in the place of Jacob L. Dodge.

Two Governors of the Alms House, in the place of Simeon Draper and Francis R. Tilton.

All whose term of service will expire on the last day of December next.

Also, there is to be elected a Justice for each of the six Judicial Districts, into which the city of New York is districted, pursuant to Chap. 614, Laws of 1851.

Yours respectfully,

CHRISTOPHER MORGAN.

Secretary of the State.

SHERIFF'S OFFICE, AUGUST 28, 1851.—I hereby certify that the above is a correct copy of the notice of the general election, to be held on the Tuesday succeeding the first Monday of November next, received this day from the Hon. Christopher Morgan, Secretary of the State.

THOMAS CARNLEY,

Sheriff of the City and County of New York.
N.B.—All the public newspapers within this county will please publish this notice once in each week until the election, and send in their bills for advertising the same as soon as the election is over so that they may be laid before the Board of Supervisors, and passed for payment.

RAILROAD SPRINGS.**Fuller's India-rubber Springs.**

THESE are now made in our own Factory, of the best materials. Each spring is guaranteed to perform the required work. Purchasers guaranteed against adverse claims.

Car Builders will save great expense by calling at the office of the Company.

23 Courtlandt St., New York.

To Railroad Companies.

THE undersigned has discovered and patented an imperishable, cheap, and sufficiently elastic substance, to be introduced between the sill and rail, so that the stone sill can be used in place of the wooden sill: entirely overcoming that rigidity where the rail is laid directly on stone. Address

J. B. GRAY, Philadelphia.

July 10, 1851.

4m

Bridges & Brother,
DEALERS IN
RAILROAD AND CAR FINDINGS,
64 Courtlandt street, New York.

Having established a general Depot for the sale of articles used in the construction of Railroads, Locomotive Engines and Railroad Cars, we would invite your attention to our establishment. We have already in store a good assortment of CAR FINDINGS and other articles used in the trade, and feel justified in saying, that should you desire anything in our line, we can supply on terms perfectly satisfactory, and in the event of your desiring to order, you may feel assured that your terms will be as good as though you were here to make your own purchases.

Among our goods may be found Railroad Car Wheels, Axles, Jaws and Boxes, Nuts and Washers, Bolts, Brass Seat Hooks and Rivets, Window and Blind Springs, Lifters and Catchers, Door Locks, Knobs and Butts, Ventilators and Rings, Car Lamps, Coach and Wood Screws, Jack and Bed Screws and Babbitt's Metal; also Plushes, Damask, Enameled Head Linings, Cotton Duck for Top Covering in width sufficient without seams, Curled Hair and all other articles appertaining to cars.

Also a new and valuable CAR DOOR LOCK, well adapted to the Sliding Door. This is decidedly the best yet introduced.

LOCOMOTIVE ENGINE LANTERNS, the best article made in the country. Whistles, Gauge and Oil Cocks, Hemp Packing, American, Russian and Italian. We are also agents for Lightner's Patent Journal Box for Car Axles, that invaluable invention, for the economical use and preservation of Car Journals.

Coach VARNISH and Japan of the best quality.

We would also offer our services for the purchase as well as for the sale of goods on commission.—Both members of our firm have had the experience of many years in the manufacture of Railroad Cars, and our Senior was a member of the well known house of DAVENPORT & BRIDGES, Car Manufacturers, Cambridgeport, Mass. With our knowledge of matters pertaining to Railroads, we feel quite confident in giving satisfaction to both buyer and seller, and hope that through assiduity and attention to any business entrusted to our care we shall merit a continuance of confidence and patronage.

BRIDGES & BROTHER.

July 22, 1851.

Lightner's Patent Axle Boxes.

THE Undersigned are Agents for, and offer for sale, *Lightner's Patent Axle Boxes*, for Railroad Cars and Tenders, which have, by thorough experience, been demonstrated to be one of the most valuable improvements ever introduced in Locomotion. The saving effected in oil alone, will in a few months pay the first cost of these boxes, independent of other advantages. They are now in use upon the following, among other roads, viz:

Boston and Worcester, Boston and Providence, Boston and Fitchburg, Nashua and Lowell, Providence and Worcester, Northern, N.H., Cheshire, Manchester and Lawrence, Concord, N.H., Concord and Claremont, Ogdensburg, (Northern, N.Y.) Stonington, New London Willimantic and Palmer, New Jersey Central, New Hampshire Central, Worcester and Nashua, Fitchburg and Worcester, Connecticut and Passumpsic, Lowell and Lawrence, Salem and Lowell, Wilton Branch, Newburyport.

Below will be found the certificates of a number of gentlemen, whose opinions will be good authority in every part of the country.

Office Boston and Prov. R. R., }
Boston, Dec. 28, 1849. }

Ma. JOHN LIGHTNER,

Sir,—It affords me pleasure to say, that after two years' trial of your boxes, I am fully and entirely satisfied of their superiority over any other pattern we have used. This superiority consists in economy of oil and freedom from "heating." I have tried every pattern of box in use, of any note, and do not hesitate to say, that you have devised one which in every respect combines greater advantages than any other within my knowledge; these advantages are so manifest, that I am fitting up all

our cars with your boxes, as fast as practicable.

Annexed, is a statement of an experiment with your boxes, the result of which may be of use to your interests.

Ten passenger cars, running 72 wheels, fitted up with Lightner's boxes used 41½ pints of Patent Oil, at 50 cts. per gallon, ran 43,099 miles, equal to 5-18 pints per wheel for 43,099 miles. Speed, 30 to 40 miles per hour.

Very respectfully yours,

W. RAYMOND LEE, Supt.

I have examined the above statement of Mr. Lee, and fully concur with him in his opinion of the superiority of Lightner's box.

GEORGE S. GRIGGS,

Supt. Machine Shop B. & P. R. R.

— Boston, July 26, 1849.

This is to certify that J. Lightner's axle boxes for railroad cars and locomotive tenders, have been in use on the Boston and Worcester railroad one year, and I unhesitatingly pronounce it, in my opinion, the best and most economical one in use, requiring less oil, of easy application, not susceptible of derangement, as in most kinds in use. When requiring repairs or renewal, the same may be done in one-fourth of the time usually occupied for that purpose. The box requires oiling not oftener than once a month—is kept quite free from dust, and consequently wears much longer than those generally in use.

D. N. PICKERING,

Supt. Motive Power, B. & W. R. R.

Office of Boston Locomotive Works, }
December 12th, 1849. }

The Boston Locomotive Company have been using J. Lightner's patent axle boxes under the tenders of their engines for several months, and find them more highly spoken of by the railroad companies that have used them in regard to economy in the use of oil, their durability and their ease of adjustment, than any other boxes which they have used. We therefore do not hesitate to recommend them to all railroad companies.

DANIEL F. CHILD,

Treas. Boston Locomotive Works.

Taunton Locomotive Works, }
Taunton, July 7, 1849. }

Mr. H. F. ALEXANDER,

Dear Sir,—Your favor of yesterday came to hand in which you ask what success we have met with, in using Mr. Lightner's patent box for cars, engines, &c.

We have put it in use on the Boston and Providence railroad, New Bedford and Taunton Branch railroad, Central railroad, N. J., Norfolk County, Rutland and Burlington, and as yet we have not had one complaint from them; and from what we have used of it, and witnessed, we do not hesitate to say that it is superior to anything in use for that purpose. It is simple in its construction, and easy of access, and the reservoir is held close to the shaft, and the oil and journal is perfectly secure from dust; they will run from four to six weeks without replenishing the oil. The brass in the box is changed very much easier than by any other plan that we have seen.

Very resp. yours,

W. W. FAIRBANKS, Agent.

Office Providence & Worcester R. R. Co., }
Providence, Dec. 17th, 1850. }

H. F. ALEXANDER, Esq.,

Sir,—The "Lightner patent boxes" for cars and locomotives have been in use under a portion of the passenger cars and engines of this company for upwards of two years, and have given very great satisfaction.

Though combining many excellent qualities, their great superiority consists in the economy of oil.

The result of experiments upon this road shows the consumption of oil by the use of this box, to be not more than one sixth part the quantity consumed by the use of the common box.

With the common box, eight passenger cars, 64 wheels, running 90 miles per day, consumed in 12 months 520 gallons of oil, being an average of 8½ gallon per wheel per annum.

With the Lightner box the same cars running the same number of miles per day, during the same space of time consumed 73½ gallons of oil, being an average of 1½ gallon per wheel per annum.

So manifest are its advantages over any other box used by this company, it is intended to place it under all our cars as soon as practicable.

Besides the saving of oil, as they afford complete security from dust, we think them more durable than any other box in use.

Another advantage resulting from the use of this box is, cars run more easier than with the common box. The saving in fuel which it would effect, would of itself, we think be a sufficient inducement to use this box in preference to any other known to us.

Very respectfully,

ISAAC H. SOUTHWICK, Supt.

JOHN B. WINSLOW,

Supt. Machine Shop, P. & W. R. R.

Cambridgeport, April 5th, 1851.

H. F. ALEXANDER, Esq.

Sir,—This may certify that I have been engaged in the manufacture of railway cars since 1834, and have built for the different railroad companies cars of all descriptions to the amount of three millions of dollars, and have used on the above cars all kinds of journal boxes, and find that none give better satisfaction than the "Lightner patent box," both on account of the saving of oil and the arrangement for taking out and re-placing the composition by means of the sliding key, and other conveniences which no other box possesses.

Yours respectfully,

CHARLES DAVENPORT.

Worcester, March 17th, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—This is to certify that I have been for some years past engaged in building cars, and that I have tried most, if not all of the patent boxes, and have found Lightner's patent superior to all others as far as the saving of oil is concerned, also the ease with which they are fitted and exchanged in case they get out of order.

For the last three years, I have put them under all of the cars I have built, and in every instance they have given the most entire satisfaction.

Yours truly,

OSGOOD BRADLEY.

Office Union Works, So. Boston, }
May 23d, 1851. }

This certifies that I have applied Mr. J. Lightner's patent axle boxes to my locomotives and tenders for the past two years. I consider them superior to all others,—economical in their use, and possessing many important advantages not found in any other boxes.

SETH WILMARTH.

Office 15, R. R. Exchange, Boston, }
June 1, 1851. }

This is to certify, that we have known the success of Lightner's patent journal boxes upon various roads in New England the past three years, and have been led to examine their peculiar construction.—We are well satisfied of their merits, and have adopted them upon our small gravel cars, and take pleasure, as we ever have done, in recommending their use upon all roads where we are employed in the construction.

GILMORE & CARPENTER,
Contractors.

Amoskeag Manufacturing Co. Machine Shop, }
Manchester, May 31, 1851. }

H. F. ALEXANDER, Esq.

Dear Sir,—We are using the Lightner box on all the engines and tenders we build, and we are satisfied that it is the best box in use, and recommend the same to all those who purchase engines at our works.

Yours respectfully,

O. W. BAYLEY, Agt.

This is to certify that the Fitchburg railroad company having become satisfied of the superiority of J. Lightner's patent Axle Boxes for Railway Cars and Locomotive Tenders adopted the same

and are bringing them into general use upon their road.

One year's experience with the above improvement, has fully convinced me that there has never been anything offered to the public for that purpose which possess such intrinsic value; in fact, this is an improvement which seems to overcome all the difficulties found in all the various kinds now in use. It possesses very many advantages over all others: Some of which are [first] the first cost is much less than that of most boxes in use. [Secondly] 75 per cent is saved in oil; one gill applied to each Journal once a month, or one quart to an eight wheel car, is all these boxes require per month [Thirdly] no dust can gain access to the Journal, which is constantly lubricated with clean oil; hence the saving in repairs of Journals and composition bearings, is a matter of importance. [Fourthly,] its construction is truly simple—not complicated, having nothing liable to become loose by constant and severe service. [Fifthly] for convenience there is nothing which approaches this improvement.—The composition bearings may be removed from the Journals of an eight wheel car, by one man, and returned, or duplicates, in twenty minutes, while under the car: the same would require two men, at least half a day with other boxes in use.—The trucks and wheels using these boxes, are free from oil and dirt, usually seen upon all railroad cars, at great expense to the corporation.

NATH'L JACKSON.

Supt. Car Building and Repairs, F.R.R. Co.

Boston, March 9, 1849.

I hereby certify, that I have examined a box for Car Journals, invented by Mr. Lightner of Roxbury, Mass, and I have thought so well of it that I have adopted it on our railroad, I have known of its success on other roads.

S. M. FELTON,

Supt. F. R. R.

Office of the Central R. R., N. J., }
Elizabethtown, May 1849. }

H. F. ALEXANDER, Esq.,

Dear Sir:—Your favor, [wishing to be informed how we liked Lightner's patent axle boxes for R.R. Journals,] has been duly received; in answer we would say, we have used the boxes on Locomotive tenders one year, more or less, and on our cars some six months. I consider them the best boxes in every respect, I have ever used, or even seen used on any other roads—for safety, durability and the economy pertaining to all the details connected with the boxes and Journals of R. R. Car wheels; and we shall adopt them upon this road.

Yours Respectfully,

JOHN O. STEARNS.

Supt. Central Railroad Co., N. J.

Manchester, N. H., Nov. }
1st, 1850. }

H. F. Alexander, Sir,

I have used "Lightner's Boxes" under all the Cars of the Manchester and Lawrence railroad, and feel no hesitation in saying that I think them to be the best boxes now in use.

Yours, &c.,

THEODORE ATKINSON, Agent.

Cheshire R. R. Office, Keene, }
March 5th, 1851. }

Mr. H. F. Alexander,

Sir,—Lightner's Patent Boxes have been used on the Cheshire R. R. about a year, and have given the highest degree of satisfaction.

All the Passenger Cars now in use, and a considerable number of Merchandize Cars are furnished with them, and they will take the place of the Common Boxes on all the cars as fast as circumstances will permit.

Very Resp't.

L. TILTON,

Supt. Cheshire R. R.

Boston and Worcester Railroad, }
Boston, April 1st, 1851. }

H. F. Alexander, Esq.,

Dear Sir,—Lightner's Patent oil saving box for railroad cars, has been adopted by this corporation; we are taking out the common and substituting the

Lightner's at the rate of fifty boxes per month; it will soon take the place of all others, as it is decidedly preferable to any heretofore used by this corporation.

G. TWITCHELL, Supt.

Statement of amount of oil used on 32 8-wheel freight cars, on the Boston and Providence Railroad (with Lightner's Boxes) from March 10, 1849, to February 27, 1851, and upon 12 8-wheeled passenger cars from September 8, 1849, to February 27, 1851.

FREIGHT CARS.							
Amount Oil.	No. months.	Amount Oil.	No. months.	Amount Oil.	No. months.	Amount Oil.	No. months.
1.—21 pts.	10	17.—23½	14				
2.—19 "	6	18.—23½	11				
3.—25 "	13	19.—36 "	21				
4.—18 "	7	20.—22 "	10				
5.—22 "	12	21.—38½	24				
6.—24 "	13	22.—29 "	23				
7.—20 "	11	23.—35½	23				
8.—21 "	11	24.—37½	23				
9.—23½	10	25.—51 "	23				
10.—21 "	9	26.—31½	24				
11.—20 "	9	27.—28½	23				
12.—21½	11	28.—36 "	23				
13.—19 "	8	29.—50½	24				
14.—25½	17	30.—50 "	23				
15.—20½	10	31.—41 "	23				
16.—31 "	18	32.—39½	23				

Total, 925½ pts. 510

PASSENGER CARS.							
1.—19½ pts.	18	7.—30 pts.	18				
2.—25½ "	18	8.—25½ "	18				
3.—33½ "	16	9.—29 "	18				
4.—19 "	15	10.—46½ "	17				
5.—15 "	15	11.—9 "	9				
6.—22 "	18	12.—65½ "	17				

Total, 340 pts. 197

Averaging 1 4-5 pints of oil for freight, and 1 7-10 for passenger cars per month only!

All orders and enquiries promptly attended to.

BRIDGES & BROTHER,
No. 64 Courtlandt st., New York.

July 25, 1851.

Trautwine on R. R. Curves.

By JOHN C. TRAUTWINE, Civil Engineer,
Philadelphia, Pa.

JUST published, accompanied by a Table of Natural Sines and Tangents to single minutes, by means of which all the necessary calculations may be performed in the field.

This little volume is intended as a field-book for assistants; and will be found extremely useful, as it contains full instructions, (with wood cuts) for laying out, and adjusting curves; with Tables of Angles, Ordinates, etc., for Curves varying from 13 miles, down to 146 feet Radius.

A portable Table of Natural Sines and Tangents to minutes, has for a long time been a desideratum among Engineers, independently of its use in laying out curves.

The volume is neatly got up in duodecimo; and handsomely bound in pocket-book form.

Sold by Wm. Hamilton, Actuary of the Franklin Institute, Philadelphia. Price \$1.

Also, "Trautwine's Method of Calculating Excavation and Embankment."

By this method, which is entirely new, (being now made known for the first time) the cubic contents are ascertained with great ease, and rapidly, by means of diagrams, and tables of level cuttings. Thin octavo; neatly half bound, \$1. For sale by Wm. Hamilton.

June 28, 1851.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff St.

CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by POWERS & WIGHTMAN, manufacturing Chemists, Philadelphia.

Jan. 20, 1849.

To Chief Engineers, Directors of Railroads, Canals, etc.

A Civil Engineer and Surveyor, who has been professionally engaged under the British Government, East India Company, etc., is desirous of obtaining employment as an Assistant. No objection to the South or West. Address for one month to C. E. & S., American Railroad Journal office.

August 16, 1851.

To Engineers.

A NEW WORK on the Marine Boilers of the United States, prepared from authentic drawings, and illustrated by 70 engravings, among which are those of the fastest and best steamers in the country, has just been published by B. H. Bartol, Engineer, and is for sale at the store of

D. APPLETON & CO.,

Broadway.

September 1, 1851.

Pneumatic process for making Foundations for Bridges, Piers, etc.

THE Attention of Engineers, Contractors, and Bridge Builders, etc., is directed to this method of forming secure foundations. Hollow Cylindrical piles from 8 inches to 10 feet in diameter may be sunk through sand, mud, clay, etc., to any required depth, and filled with concrete or masonry.

The efficacy and economy of the process has been demonstrated in the construction of numerous permanent works, at a much less cost than the use of any other method. (See evidence in Parliamentary enquiry, Railroad Journal, April 19, 1851.)

Contracts made, or licenses granted for the use of the invention in any part of the United States, by

CHARLES PONTEZ,

34 Liberty street, N. Y.

LOWMOOR IRON.

THE LOWMOOR IRON COMPANY having appointed Wm. BAILEY LANG their sole agent in America and Canada, he is now prepared to receive and execute all orders for Railway Tire Bars, bent, welded, and blocked Railway Tires, Axles, Piston Rods, and Boiler Plates. Also, plain, angle, rivet and every other description of Lowmoor Iron.

All communications respecting the above are requested to be sent to Wm. Bailey Lang, at his Steel Warehouse, No. 9 Liberty Square, Boston, or to the Lowmoor Iron Works, Bradford, Yorkshire, England.

30th Sept., 1851.

RAILROAD SPRINGS.

Fuller's Patent India-rubber Springs.

PRICE reduced to 50 cents per pound. The owners of this Patent now manufacture the Springs in their own Factory, and guarantee that each spring shall perform its required duty.

Purchasers guaranteed against adverse claims. They may have full confidence in the working qualities of the springs.

The suits brought against Ray & Co., will soon be brought to issue, and we await the result with satisfaction, having full confidence in the pure administration of the Laws.

The long advertisements put forth by Ray & Co. about prior invention of the spring are worthless; he has not proved prior invention, and cannot sustain his patent in a Court of Law.

For the owners of Fuller's Patent,

G. M. KNEVITT,

23 Courtlandt st., New York.

October 7, 1851.

Railroad Iron.

THE undersigned, Agents for British Manufacturers, continue to sell Railroad Iron of the best quality, and of any weight or pattern required; deliverable at any part of the United States or Canada.

They have now on hand, ready for delivery at New York:

2,000 tons of an approved pattern, weighing about 60 lbs. to the yard.

WM. F. WELD & CO.,

42 Central Wharf, Boston.

Practical and Scientific Books

PUBLISHED BY

HENRY CAREY BAIRD,

SUCCESSOR TO E. L. CAREY, PHILADELPHIA.
For sale by Dewitt & Davenport, Tribune Buildings, New York, and Booksellers generally throughout the United States and Canada.

Now being published in Twelve Parts, price 25 cents each, the **PRACTICAL MODEL CALCULATOR**, for the Engineer, Machinist, Manufacturer of Engine work, Naval Architect, Miner and Millwright.—By Oliver Byrne, Compiler and Editor of the Dictionary of Machines, Mechanics, Engine Work and Engineering, and Author of various Mathematical and Mechanical works—illustrated by numerous Engravings; forming, when completed, one large volume, octavo, of nearly 600 pages.

It will contain such calculations as are met with and required in the Mechanical Arts, and establish models or standards to guide practical men. The tables that are introduced, many of which are new, will greatly economise labor, and render the everyday calculations of the *practical man* comprehensive and easy. From every single calculation given in this work other calculations are readily modeled, so that each may be considered the head of a numerous family of practical results.

The examples selected will be found appropriate, and in all cases taken from the actual practice of the present time. Every rule has been tested by the unerring results of mathematical research, and confirmed by experiment, when such was necessary.

The Practical Model Calculator, will be found to fill a vacancy in the library of the practical working man long considered a requirement. It will be found to excel all other works of a similar nature, from the great extent of its range, the exemplary nature of its well selected examples, and from the easy, simple and systematic manner in which the model calculations are established.

Parts 1, 2 and 3 now ready.

American Miller and Millwright's Assistant. By W. C. Hughes. 12mo., illustrated.	\$1 00
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THE Fourth Annual Exhibition of AMERICAN MANUFACTURES, by the MARYLAND INSTITUTE for the Promotion of the Mechanic Arts, will be opened in Baltimore on the 20th October, 1851.

The Exhibition will be held in the **SPLENDID NEW HALL** of the Institute, (fronting on Baltimore street) now being rapidly completed. Their edifice is centrally situated, chaste in its architecture, solid in its construction, and is by far the largest and most complete building in the United States, devoted to the Mechanic Arts. It may be added that this building is 355 feet long by 60 in breadth, with an average height of 68 feet, containing some twelve apartments, the largest of which is 255 feet by 60, and that the cost will be over \$70,000.

To this Exhibition, the Managers ask the attention of all engaged in industrial pursuits throughout the country, and cordially invite them to contribute specimens of their best productions for public inspection, and to compete for the prizes offered by the Institute. These prizes consist of **GOLD and SILVER MEDALS, DIPLOMAS, etc.**, which were last year distributed as follows:—*Gold Medals*, 16; *Silver ditto*, 90; *Diplomas*, 60; besides 85 articles of Jewelry, etc., to ladies. *Fair play will be scrupulously observed towards all*, and every facility of Steam power, shafting, fixture, labor, &c., &c., will be amply provided *free of expense*. The machinery will be under a special superintendent, and a fine display of it is looked for. The last exhibition of the Institute was visited by more than 40,000 persons, and with their vastly improved accommodations and alterations, this number will be doubled at the coming display, embracing many Virginians, Pennsylvanians, and other strangers from the South and West.

Joshua Vansant, President.

Ed. Needles, } Vice Presidents.

F. A. Fisher, }

Samuel Sands, Rec. Sec'y.

Wm. Prescott Smith, Cor. Sec.

F. J. Clare, Treasurer.

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(The last nine in *Italics* are the Committee on Exhibition.)

The Hall will be opened for the reception of goods on **MONDAY, 13th October**; on the next Monday, 20th, at 7 P. M., the Exhibition will be formally opened to the public, and will positively close on Wednesday, 19th November. Articles for competition must be in the Hall by **Thursday night, Oct. 16, unless delayed in shipment after starting in ample time.**

Those who intend depositing, will give the Committee or the Agent, notice as early as possible, stating the nature of the goods, and probable amount of room required, to exhibit them to advantage.

Circulars, containing a view of the new Hall and the full regulations of the Committee, with special information, if required, may be had promptly, by addressing the undersigned, or the Institute's Agent, J. S. Selby, Baltimore, *post-paid*.

ADAM DENMEAD,
Chairman Com. on Exhibition for 1851.

SUPERIOR BLACK WRITING & COPYING INK.

Jones' Empire Ink.

87 Nassau st., Sun Building, New York city.

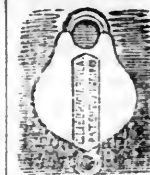
Net prices to the trade—

Quarts, per dozen, \$1 50	6 oz. per dozen, \$0 50
Pints, " 1 00	4 " " 0 37
3 ounces, " 0 62	2 " " 0 25

On draught per Gallon, 20 cents.

This is the best ink manufactured. It flows freely, is a good copying ink, and will not mould, corrode, precipitate or decay. Orders for export, or home consumption, carefully and promptly attended to by
21st THEODORE LENT.

To Railroad Companies, etc.



The undersigned has at last succeeded in constructing and securing by letters patent, a **Spring Pad-lock** which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

I also invite attention to an improved **PATENT SPRING LOCK**, for **SLIDING Doors to Freight and Baggage Cars**, now in use upon the Pennsylvania Central, Greenville and Columbia, S. C., Reading, Pa., and other Railroads.

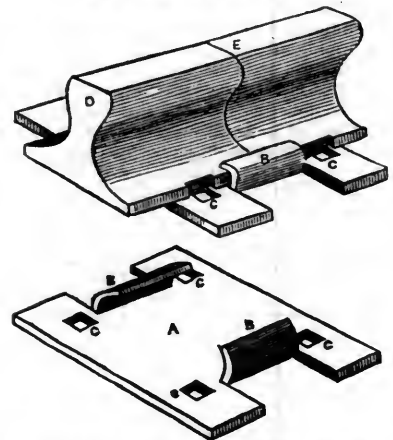
Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH,

46 South 8th St. Philadelphia.

May 9, 1851.

The American Railroad Chair Manufacturing Co.



ARE prepared to make **WROUGHT IRON RAIL ROAD CHAIRS**, of various sizes, at short notice.

By use of the **WROUGHT IRON CHAIR**, the necessity of the wedge is entirely done away—the lips of the chair being set, by means of a sledge or hammer, close and firmly to the flange of the rail.

The less thickness of metal necessary in the Wrought Iron Chair gives much greater power and force to the spikes when driven—and consequently a much less liability to the spreading of the rails by reason of the spikes drawing or becoming bent.

The less weight necessary in the Wrought Iron Chair, will enable us to furnish them at a cost much below that of **CAST IRON CHAIRS**.

DESCRIPTION OF THE ABOVE CUTS.

Figure 1 is a perspective view of the rail secured in the chair, and fig. 2 is a perspective view of the chair itself. D, E, are sections of two rails placed together, and secured at the joint on the chair by the jaws B, B. The chair is bolted down by spikes C, C. In fig. 2, the chair is represented as made of a single block or plate A of wrought iron.

The chair is set in its proper place on the track, spiked down, and the ends of the two rails brought together within the jaws as represented in fig. 1.

For further information address,
N. C. TROWBRIDGE, Secretary,
Poughkeepsie, N. Y.

June 1, 1851.

Railroad Commission Agency.

THE Subscriber offers his services to Railroad Co's and Car Makers for the purchase of equipment and furniture of roads and depots and all articles and materials required in the construction of cars, with cash or approved credit. No effort will be spared to select the best articles at the lowest market price.

He is sole Agent for the manufacture of the **ENAMELED CAR LININGS**, now in universal use. The best Artists are employed in designing new styles, and he will make to order pieces with appropriate designs for every part of the car, in all colors, or with silver grounds and bronzed or velvet figures.

He is also Agent for Page's Car Window Sash Fasteners, which is preferred by all who have used it to any other.

CHARLES STODDER,

75 Kilby st., Boston.

June 20, 1851.

3m.

Ogden & Martin's ROSENDALE CEMENT.

WE are prepared to enter into arrangements for supplying our Cement for public works or other purposes. We warrant the cement equal in every respect to any manufactured in this country. It attains a great degree of hardness, sets immediately under water, and is a superior article for masonry coming in contact with water, or requiring great strength.

For sale in tight barrels, well papered, at their office by
OGDEN & MARTIN, 104 Wall st.
ly*

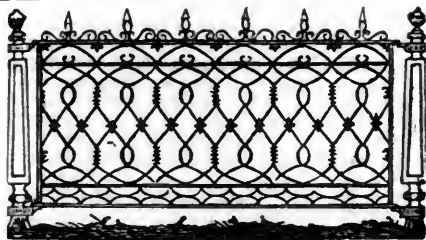
February 16, 1850.
The above cement is used in most of the fortifications building by government.

RAILROAD

India-rubber Springs.

IF any Railroad Company or other party desires it, the NEW ENGLAND CAR COMPANY will furnish India-rubber Car Springs made in the form of washers, with metallic plates interposed between the layers, or in any other form in which they can be made; in all cases guaranteeing the right to use the same against any and all other pretended rights or claims whatsoever.

F. M. Ray, 95 Broadway, New York.
J. CRANE, 99 State Street, Boston.
1849.



NEW YORK WIRE RAIL- ING WORKS. WIRE RAILING.

[SECURED BY LETTERS PATENT.]

Enclosures for Public Grounds and Cemeteries.
Fences for Cottages, Gardens, Farms, etc.
Window Guards and Gratings, for Stores, Dwellings,
Lunatic Asylums, Prisons, etc.
Columns and Cornice Work for Cottages and
VERANDAHS.

THE above are made entirely of Wrought Iron and Wire, (at one half the cost of Cast Iron,) being extensively used in the city of New York, etc.—Superceding all other kinds of work for the same purpose.

RAILROAD AND FARM FENCE.

Made with Wrought Iron or Wooden Posts, being so constructed as to be used for moveable or permanent fence, at 80c. to \$3 per rod.

WIRE FOR FENCES,

always on hand.
Portable Iron Bedsteads; Iron Statuary, Greyhounds,
Dogs, Lions, etc.

Wrought and Cast Iron Railings made to order.
By addressing the Manufacturer and Proprietor,
Circulars and drawings of the above will be forwarded.

JOHN B. WICKERSHAM,
240 Broadway.

Works, 59 & 61 Lewis st.
AGENTS—C. B. Conant & Co., 215 Pearl st. N. York.
New York, June 2, 1851.

CAR MANUFACTORY CINCINNATI, OHIO.



KECK & DAVENPORT WOULD RESPECT-fully call the attention of Railroad Companies in the West and South to their establishment at Cincinnati. Their facilities for manufacturing are extensive, and the means of transportation to different points speedy and economical. They are prepared to execute to order, on short notice, Eight-Wheeled Passenger Cars of the most superior description. Open and Covered Freight Cars, Four or Eight-Wheel Crank and Lever Hand Cars, Trucks, Wheels and Axles, and Railroad Work generally.

Cincinnati, Ohio, Oct. 2, 1848.

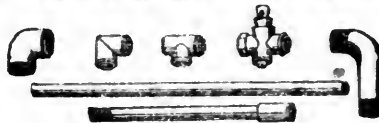
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TO RAILROAD COMPANIES AND BUILD- ERS OF MARINE AND LOCOMOTIVE ENGINES AND BOILERS.

PASCAL IRON WORKS.

WELDED WROUGHT IRON TUBES

From 4 inches to 4 in calibre and 2 to 12 feet long, capable of sustaining pressure from 400 to 2500 lbs. per square inch, with Stop Cocks, T. L. and other fixtures to suit, fitting together, with screw joints, suitable for STEAM, WATER, GAS, and for LOCOMOTIVE and other STEAM BOILER PLUMS.



Manufactured and for sale by
MORRIS, TASKER & MORRIS.
Warehouse B. E. Corner of Third & Walnut Streets,
PHILADELPHIA.

Railroad Paint.

FOR depot buildings, bridges, burthen cars, wheels and axles, pipes, steam joints, fences, and every description of work requiring protection from the action of the elements. Price per barrel of 300 pounds, nine dollars.

Orders addressed to J. M. HALL, 36 South street, New York, will receive prompt attention.

NICOLL'S PATENT SAFETY SWITCH FOR Railroad Turnouts. This invention for some time in successful operation on one of the principal railroads in the country, effectually prevents engines and their trains from running off the track at a switch, left wrong by accident or design. It acts independently of the main track rails; being laid down or removed without cutting or displacing them.

It is never touched by passing trains, except when in use, preventing their running off the track. It is simple in its construction and operation, requiring only two castings and two rails; the latter, even if much worn or used, not objectionable.

Working models of the Safety Switch may be seen at Messrs. Davenport, Bridges & Kirk's Cambridge Port, Mass., and at the office of the Railroad Journal New York.

Plans, Specifications, and all information obtained on application to the Subscriber, Inventor and Patentee.

G. A. NICOLLS.
Reader—P.



Blake's Patent FIRE-PROOF PAINT.

This paint, in a few months after applied, turns to slate or stone, forming a complete enamel or coat of mail over whatever applied, protecting it from the action of fire, water or weather. It has now been tried over seven years, and where first applied is now like a stone.

LOOK OUT FOR FORGED BRANDS AND WORTHLESS COUNTERFEITS, as this paint has gained such universal credit throughout the country, that many persons have been getting up all kinds of worthless counterfeit stuff, and pushing it into the market upon the credit of the genuine, but most of it has proved itself so entirely worthless, that it is impossible to sell. Some of them have commenced forging my brands, and putting it upon the barrels—the forgery can be detected from the fact that on the genuine the words "Blake's Patent Fire Proof" are put on in a circular form, but on the spurious it is straight. I have now three suits in the United States Court against those who have been infringing my patent by selling "fire proof paint" not of my manufacture. I would, therefore, caution all to be very particular, and see that they get the genuine article, which can at all times be had of the Patentee, at 84 Pearl street, New York.

WM BLAKE.

Nashua Iron Co.,

NASHUA, NEW HAMPSHIRE.

MANUFACTURERS of Bowling, Pembroke and Lowmoor Locomotive Tires, Engine Frames, Crank and Car Axles, Wrought Iron Shafting of all sizes, Shapes of all descriptions used in Machine shops and upon Railways.

FRANKLIN MONROE, Treasurer.

Messrs. Fullerton & Raymond, Agents, Boston.

" Raymond & Fullerton, New York.
Orders received by the Treasurer at Nashua, N.H. or by the Agents in Boston or New York.

Mattewan Machine Works.

THE Mattewan Company have added to their Machine Works an extensive LOCOMOTIVE ENGINE department, and are prepared to execute orders for Locomotive Engines of every size and pattern—also Tenders, Wheels, Axles, and other railroad machinery, to which they ask the attention of those who wish such articles, before they purchase elsewhere.

STATIONARY ENGINES, BOILERS, ETC., Of any required size or pattern, arranged for driving Cotton, Woollen, or other Mills, can be had on favorable terms, and at short notice.

COTTON AND WOOLLEN MACHINERY, Of every description, embodying all the modern improvements, second in quality to none in this or any other country, made to order.

MILL GEARING,

Of every description, may be had at short notice, as this company has probably the most extensive assortment of patterns in this line, in any section of the country, and are constantly adding to them.

TOOLS.

Turning Lathes, Slabbing, Planing, Cutting and Drilling Machines, of the most approved patterns, together with all other tools required in machine shops, may be had at the Mattewan Company's Shops, Fishkill Landing, or at 66 Beaver street, New York.

WM. B. LEONARD, Agent.

FAIRBANKS' RAILROAD SCALES.—THE subscribers are prepared to construct at short notice, Railroad and Depot Scales, of any desired length and capacity. Their long experience as manufacturers—their improvements in the construction of the various modifications, having reference to strength, durability, retention of adjustment, accuracy of weigh and dispatch in weighing—and the long and severe tests to which their scales have been subjected—combine to ensure for these scales the universal confidence of the public.

No other scales are so extensively used upon railroads, either in the United States or Great Britain;—and the managers refer with confidence to the following in the United States.

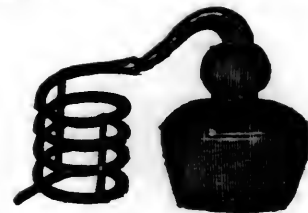
Eastern Railroad.	Boston & Maine Railroad.
Providence Railroad.	Providence and Wor. Road.
Western Railroad.	Concord Railroad.
Old Colony Railroad.	Fitchburg Railroad.
Schenectady Railroad.	Syracuse and Utica Road.
Balt. and Ohio Railroad.	Baltimore and Susq. Road.
Phila. & Reading Road.	Schuylkill Valley Road.
Central (Ga.) Railroad.	Macon and Western Road.
New York and Erie Railroad.	

And other principal Railroads in the Western, Middle and Southern States.

E. & T. FAIRBANKS & CO.

St. Johnsbury, Vt.

Agents, { FAIRBANKS & Co., 89 Water St., N. York.
A. B. NORRIS, 196 Market St. Philadelphia.
April 22, 1849. iv*17



P. H. Griffin,

Corner of Steuben and James Sts. Albany, N.Y.
CONTINUERS to manufacture copper flues for locomotive boilers, brewers' coppers, stills, tanner heaters, etc. Copper work in general, at the shortest notice. He has constantly on hand brass cocks, brass valves, copper pumps of every variety.
Orders promptly attended to.

1y14

CAUTION

TO RAILROAD COMPANIES AND CAR MANUFACTURERS.

THE PATENT OFFICE having decided in favor of F. M. Ray as the first and true inventor of the India-rubber Railroad Spring, and against W. C. Fuller, who had claimed the same as his invention, and at whose instigation and that of Horace H. Day (who has manufactured the metallic or vulcanized rubber for such springs), several Railroad Companies have infringed, not only upon the rights of the said F. M. Ray, and rendered themselves liable for large damages, but also upon the patent rights of Charles Goodyear, against all of whom suits for damages for infringement will be commenced, in the event of failure to recover compensation speedily against Horace H. Day, against whom several suits are now pending:—all Railroad Companies are cautioned against infringing or pirating upon the said patent rights of said Charles Goodyear, or of F. M. Ray, by the use of such India-rubber car springs, and for all future infringements, actions will be immediately commenced.

Annexed is a copy of the official certificate from the Commissioner of Patents:

COPY.

U. S. PATENT OFFICE, WASHINGTON, D. C.,
12th September, 1850.

Sir—You are hereby informed that in the case of the interference between your claims and those of W. C. Fuller, upon which a hearing was appointed to take place on the second Monday in August, the question of priority of invention has been decided in your favor. I enclose a copy of the decision.

The testimony in the case is now open to the inspection of those concerned.

Yours respectfully,

Signed DELLITT C. LAWRENCE,
Acting Commissioner of Patents.

To Mr. Fowler M. Ray,
C. M. Keller, Esq., New York.

In conformity with the above decision, a Patent has been granted to me for the same invention for which Fuller had obtained a Patent dated October 8, 1850, and a bill has been filed in the U. States Circuit Court to repeal the Patent granted to Fuller.

In answer to the above, Mr. Knevitt states in his Advertisement in effect that Mr. Ray obtained his patent by bribing the Commissioner.

When a case has become so bad that parties in their desperation in defense of themselves are compelled, as a last resort, to attack the character of a person holding an office of such high honor and trust as that of Commissioner of Patents of the U. S., what reliance can be placed upon any of their statements? The character of the Hon. Mr. Ewbank, Commissioner of Patents, stands too high with the public to require any defense at my hands; and all attempts by Knevitt or Day to escape from the charges of having tried to deceive the public and railroad companies, by aspersing the character of Mr. Ewbank, and insinuating that he has been improperly biased or influenced in deciding against W. C. Fuller, and in my favor as the first and original inventor of the spring in question—will only recoil on themselves.

Now what was the question between Fuller and Ray thus decided in favor of Ray?

It was whether Fuller or myself was the first inventor of India-rubber springs, with metallic plates interposed.

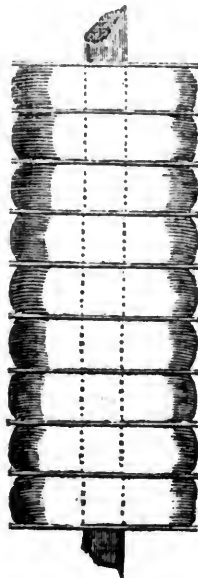
On the 1st August, 1848, I obtained a patent for a form of spring, (about which there is no dispute) which consisted of a cylinder of India-rubber, with circular bands upon the outside circumference. This kind of spring in nineteen cases out of twenty, I may say, has been adopted as the best and most approved form of spring by railroad companies. The validity of this patent was not questioned in this controversy; but the question submitted to the Commissioner of Patents for his investigation and decision, and in respect to which a very large mass of testimony was taken, was whether W. C. Fuller or F. M. Ray was the first inventor of a form of spring, composed of alternate discs or rings of India-rubber, with metallic plates interposed, etc.? That question has been decided against W. C. Fuller, an in my favor, as the first inventor.

There is no escaping from this decision, and the parties who hope to do so by injurious imputations against the Commissioner of Patents, who made the decision in this case, will be disappointed.

It will require something more, they will find, than mere assertions or insinuations to produce any distrust of the integrity of the Commissioner of Patents. The testimony in this case clearly proved that I was

the first inventor of the spring in question, and justly entitled to the patent which had been granted to W. C. Fuller for the same invention, and the Commissioner of Patents could not have made any other decision.

The cut given below represents a model for which a patent was granted to Mr. Ray in his contest with Fuller. It is a perfect fac simile of the original invention.



A patent was granted to Fuller by the United States on the 22d October, 1846 under the title of "An improvement in Railway Carriages." At this time I was pursuing my experiments with a view to ascertain with greater certainty, the best form of spring for railroad cars, and knew nothing about the invention or patent of Fuller till I applied for a patent shortly afterwards, and received notice from the Patent Office of the interference with Fuller's which this decision has settled against Fuller and in my favor.

Knevitt says that I made the same application to Mr. Burke, the former Commissioner of Patents, which was refused, without giving the reason why it was refused, leaving it to be inferred without daring to make the assertion openly, that, as between Fuller and Ray, Mr. Burke had decided against Ray: whereas, the fact is, as the record of the case at the Patent Office will show, that the application was refused on the ground that there had been a patent granted in England to Lacy prior to either Ray or Fuller, and that objection, if correct, would prove fatal to a suit by Fuller upon his patent, as well as to a suit by me upon my patent for the same thing; but the Commissioner of Patents, upon a closer and fuller investigation of the English patent granted to Lacy, than was given to it on the first application, has decided that the patent to Lacy is not in the way of a patent either to Fuller or myself, for the form of spring in question—that is, alternate discs of rubber, with metal plates interposed, etc. And, as between Fuller and myself, the Commissioner of Patents has decided that Fuller is not the first inventor, but that I am, and am entitled to the patent in question.

It would seem unnecessary to add anything more; enough I trust has been shown to put the question at rest with the various railroad companies, the parties most interested in this decision.

I ought, perhaps, to say something in reply to Mr. Knevitt's statements in regard to his and Day's infringement upon Goodyear's patent by the manufacture and sale of Vulcanized rubber, and the publications which they have put forth to induce railroad companies to become parties to the infringement on said patent, and to get them involved in controversy; but as there are a number of suits against Day for damages to a large amount for infringement in this respect and other matters, and particularly as there is a suit by Goodyear against Day, which Day is under

stipulation to try at the next March term of the U. S. Circuit Court, to be held at Boston, unless Day succeeds in putting it off, of which there is very little probability, as I am informed, I shall abstain for the present from saying anything about this subject.

Mr. Knevitt wisely declines to say anything about the suits of Charles Goodyear against Horace H. Day for damages for infringement of Goodyear's patent, by manufacturing for Knevitt the vulcanized rubber, of which all these springs, sold by Knevitt to railroad companies, were composed, and I leave both Day and Knevitt to answer to the few railroad companies whom they have deceived, and thus rendered liable for large damages for infringement of Goodyear's patent, in the best manner they can.

Knevitt does not pretend to deny that he has given false assurances to the few railroad companies whom he has thereby induced to infringe upon the springs, which the Commissioner of Patents has decided against Fuller, and in my favor, as the first and true inventor; but, for the purpose of diverting attention from this fact, he still continues to harp upon a separate and distinct patent of mine for railroad springs, which, he says, was for India-rubber and air, and has proved useless. How much truth there is in this assertion may be gathered from the following copy of the claims in that patent, and from the fact that the spring patented by me in 1848, is the most approved form, and the one adopted in nineteen cases out of twenty, and is used on nearly every railroad in the United States.

Copy of the claims in patent granted to Fowler M. Ray, August 1st, 1849:

FIRST—In combination with springs made of vulcanized India-rubber, substantially as above described, the use of hoops or bands on the external circumference at the ends, or between the ends, or at the ends, and at any required distance between the ends, substantially in the manner and for the purposes above described.

SECOND—I claim combining the elasticity of India-rubber cylinders, substantially as herein described, with the elasticity of atmospheric air, or other permanently elastic gas, by closing up the ends of such India-rubber cylinders either with discs of India rubber, or the equivalent thereof, such as solid discs of metal, substantially in the manner and for the purposes specified.

This patent bears date 1st Aug., 1849.

I take no notice of the opinions of counsel cited by Knevitt. Knevitt ought to know that the paid opinions of lawyers employed in a case, will have no weight whatever. There are always two sides to all causes, and it is the business of counsel to advocate the cause of their clients.

F. M. RAY.

New York, October 1, 1850.

Railroad and Mathematical Instruments.

KUNS & BASELER, Mathematical Instrument makers, manufacture and keep for sale all kinds of mathematical instruments; also drawing instruments, scales and balances for the use of chemists, professional gentlemen, jewellers, etc., etc., of the most perfect description, at the lowest price, at 81 Nassau street, New York.

Patent Metallic Measuring Tapes.

A New Article, made from Vegetable and Mineral substances combined, entirely free from the objections made to all other tapes, arising from contraction and elongation in consequence of atmospheric changes. Fine wires, of a material not affected by dampness or dryness, are woven into the warp of the Patent Tape, rendering it not subject to variations in length, like all other tapes heretofore manufactured. Instead of being merely painted, it is immersed in a peculiar solution of gums, and the fibres being solidly compacted together, it acquires substance and strength presented by no other article. They are enclosed in patent cases, superior to all others in lightness, strength and durability.

Imported and for sale only—together with every description of Drawing and Profile Paper, Tracing Paper in rolls, Vellum or Tracing Cloth, Field Books, Mouth Glue, and a general assortment of Engineer's materials—by

WILLARD FELT,
Importer of Stationary 191 Pearl St., N. Y.

JOHN KING, Jr., Agent.

CENTRAL RAILROAD FROM SAVANNAH TO MACON, (Ga.) 190½ miles.

Passenger Trains leave Savannah and Macon daily at 7 a.m.
 Passenger trains arrive daily at Savannah, 6 15 p.m.
 " " " " Macon, 6 45 p.m.

This road, in connection with the Macon and Western road from Macon to Atlanta, and the Western and Atlantic road from Atlanta to Dalton, now forms a continuous line of 391½ miles in length* from Savannah to Dalton, Murray county, Ga. and with the Memphis Branch railroad, and Stages connect with the following places:

Tickets from Savannah to Macon,	35 75
" " " Atlanta,	9 50
" " " Augusta,	6 50
" " " Columbus,	15 00
" " " Opelika,	17 00
" " " Jacksonville, Ala.,	20 00
" " " Tallahassee,	
" " " Huntsville, Ala.,	22 00
" " " Decatur,	
" " " Tusculum, Ala.,	22 50
" " " Tuscaloosa, Ala.,	
" " " Columbus, Miss.,	28 00
" " " Aberdeen,	
" " " Holly Springs,	
" " " Nashville, Tenn.,	
" " " Murfreesboro',	25 00
" " " Columbia, do.,	
" " " Memphis, do.,	30 00

An extra Passenger Train leaves Savannah on Saturdays, after the arrival of the Steamships from New York, for Macon, and connects with the Macon and Western railroad; and on Tuesdays, after the arrival of the Macon and Western cars, an extra Passenger Train leaves Macon to connect with the Steam ships for New York.

Stages for Tallahassee and intermediate places connect with the road at Macon, Mondays, Wednesdays, and Fridays, and with Milledgeville at Gordon daily.

Passengers for Montgomery, Mobile and New Orleans take stage for Opelika from Barnesville through Columbus, a distance of 97 miles, or from Griffin through West Point, a distance of 93 miles.

* The Western and Atlantic railroad will soon be completed between Dalton and Chattanooga, a distance of 423½ miles from Savannah, of which due notice will be given.

† Head of the West Point and Montgomery railroad, on which the fare to Montgomery is about \$2.

RATES OF FREIGHT FOR MERCHANDISE GENERALLY, FROM SAVANNAH TO MACON.

Measurement Goods.—Boxes of hats, bonnets, furniture, shoes, saddlery, dry-goods, and other measurement goods, per cubic foot	13 cents.
Crockery Ware, in crates, boxes or hhd., per cubic foot.	10 "
Goods by Weight, 1st class.—Boxes of glass, paints, drugs & confectionary, per 100 lbs.,	50 "
2d class—Sugar, coffee, rope, butter, cheese, lard, tobacco, leather, hides, copper, sheet and hoop iron, tin, hard and hollow ware, rice, boxes soap and candles, bagging, and other heavy articles not enumerated below, per 100 lbs.,	45 "
3d class—Flour, bacon, liquors, pork, beef, fish, tallow and beeswax, per 100 lbs.,	40 "
4th class—Mill-gearing, pig and bar iron, grind and millstones, nails, spikes and coal, 100 lb. 30 "	
Barrels of beets, bread, crackers, potatoes, ice, fruit, oysters, onions, and all light bbls, each, 75 "	
Oil and molasses per hhd., (smaller casks in proportion)	\$6 00 "
Salt per sack not exceeding 4 bushels,	50 "

Goods consigned to Thos. S. Wayne, Forwarding Agent, Savannah, will be forwarded free of commission. WM. M. WADLEY, Supt. Savannah, Ga., February 24, 1850.

ENGINEERS' AND SURVEYERS' INSTRUMENTS MADE BY EDMUND DRAPER, Surviving partner of STANCLIFFE & DRAPER.



No 23 Pear street, near Third,

below Walnut, Philadelphia.

LITTLE MIAMI RAILROAD.—SUMMER ARRANGEMENT.

Cincinnati and Sandusky.

FIRST Passenger Train leaves Depot on East Front street, at 5 o'clock 10 minutes A. M. stops for breakfast at Morrow, and arrives at Springfield at 11 10 A. M. Leaves Springfield for Sandusky at 11 50 A. M. Second Passenger Train leaves Depot 3 P. M. arrives at Springfield at 9 P. M. Passengers take tea at Springfield, and leaves for Sandusky at 9½ P. M.

RETURNING.—First Train leaves Springfield at 4 A. M. Stop for breakfast at Xenia, and arrives at Cincinnati at 10 15 A. M.

Second Train leaves Springfield at 2½ P. M. Stop for tea at Morrow, and arrives at Cincinnati, at 8½ P. M.

Passengers taking the Morning Train arrive at Sandusky at 9 P. M. Those taking the Afternoon Train arrive at 7½ A. M. next morning, and proceed directly on in the boats.

Passengers for Columbus, Zanesville, Wheeling, and intermediate towns, should take the 5, 10 A. M. Train. The Ohi Stage Company are running the following Lines in connection with the Trains:

A Daily Daylight Line to Columbus from Springfield in connection with the Morning Train from Cincinnati. Also, Daily Lines to Columbus, from Xenia and Springfield, connecting with the 3 o'clock pm. train from Cincinnati.

Fare from Cincinnati to Xenia	\$1 90
" " Springfield	2 50
" " Sandusky city	6 50
" " Buffalo	10 00
" " Columbus	4 50

For other information and through tickets, apply at the Ticket Office on Broadway, near Front-st., Cincinnati.

W. H. CLEMENT, Superintendent.

The Company will not be responsible for Baggage exceeding 50 dollars in value, unless the same is returned to the Conductors or Agent, and freight paid at the rate of a passage for every 500 dollars in value above that amount.

PHILADELPHIA, WILMINGTON, & BALTIMORE RAILROAD.

Summer Arrangement. April 1st, 1851.—Fare \$3.

Leave Philadelphia 8½ am, and 10 pm.

Leave Baltimore 9 am, and 8 pm.

Sunday—Leave Philadelphia at 10 pm.

" " Baltimore at 8 pm.

Trains stop at way stations.

Charleston, S. C. Through tickets Philadelphia to Charleston, \$20.

Pittsburg and Wheeling. Through ticket, Philadelphia to Pittsburg, \$12.

" " Wheeling, 13.

Through tickets sold at Philadelphia office only.

Wilmington Accommodation.

Leave Philadelphia at 12 m. 4 and 7 pm.

Leave Wilmington at 7½ am., 4½ and 7 pm.

Newcastle Line.

Leave Philadelphia at 2½ pm.—Baltimore at 1½ pm.

Fare \$3.—Second class, \$2.

N.B.—Extra baggage charged for.

I. R. TRIMBLE, Gen. Supt.

BALTIMORE AND SUSQUEHANNA RAILROAD.—Reduction of Fare. Morning and Afternoon Trains between Baltimore and York.—The Passenger Trains

run daily, except Sundays, as follows:

Leave Baltimore at - - - 9 am. and 3½ pm.

Arrive at - - - 9 am. and 6½ pm.

Leave York at - - - 5 am. and 3 pm.

Arrive at - - - 12½ pm. & 8 pm.

Leave York for Columbia at - 1½ pm. & 8 am.

Leave Columbia for York at - 8 am. & 2 pm.

Fare:

Fare to York - - - \$1 50

" " Wrightsville - - - 2 00

" " Columbia - - - 2 12½

Way points in proportion.

PITTSBURG, GETTYSBURG, AND HARRISBURG.

Through tickets to Pittsburg via stage to Harris-

burg - - - \$9

Or via Lancaster by railroad - - - 10

Through tickets to Harrisburg or Gettysburg - 3

In connection with the afternoon train at 3½ o'clock,

a horse car is run to Green Spring and Owning's

Mill, arriving at the Mills at - - - 5½ pm.

Returning, leaves Owning's Mills at - - - 7 am.

D. C. H. BORDLEY, Supt.

31 ly Ticket Office, 63½ North st.

GEORGIA RAILROAD. FROM AUGUSTA TO ATLANTA—171 MILES.

AND WESTERN AND ATLANTIC RAILROAD, FROM ATLANTA TO DALTON, 100 MILES.

This Road, in connection with the South Carolina Railroad, and Western and Atlantic Railroad, now forms a continuous line, 408 miles in length, from Charleston to Dalton (Cross Plains) in Murray county, Ga. 32 miles from Chattanooga, Tenn.

RATES OF FREIGHT

		Between Augusta and Dalton. 271 miles.	Between Charleston and Dalton. 408 miles.
1st class	Boxes of Hats, Bonnets, and Furniture, per cubic foot	\$0 18	\$0 28
2d class	Boxes and Bales of Dry Goods, Saddlery, Glass, Paints, Drugs, and Confectionary, per 100 lbs.	1 00	1 50
3d class	Sugar, Coffee, Liquor, Bagging, Rope, Cotton, Yarns, Tobacco, Leather, Hides, Copper, Tin, Feathers, Sheet Iron, Hollow ware, Castings, Crockery, etc.	0 60	0 85
4th class	Flour, Rice, Bacon, Pork, Beef, Fish, Lard, Tallow, Beeswax, Bar Iron, Ginseng, Mill Gearing, Pig Iron, and Grindstones, etc.	0 40	0 65
	Cotton, per 100 lbs.	0 45	0 70
	Molasses per hogshead	8 50	13 50
	" " barrel	2 50	4 25
	Salt per bushel	0 18	
	Salt per Liverpool sack	0 65	
	Ploughs, Corn Shellers, Cultivators, Straw Cutters, Wheelbarrows -	0 75	1 50

German or other emigrants, in lots of 20 or more, will be carried over the above roads at 2 cents per mile.

Goods consigned to S. C. Railroad Company will be forwarded free of commissions. Freight payable at Dalton.

F. C. ARMS, Sup't of Transportation.

1851. PEOPLE'S OSWEGO LINE, New York and Oswego.

ARE prepared for the Transportation of Merchandise and Produce to and from New York, and ports on the Western Lakes, by the Lake Ontario and Welland Canal route. Special attention given to Railroad Iron.

PROPRIETORS.

LEWIS & BEARDSLEY, Oswego.

JAMES W. CAMPBELL, New York.

AGENTS.

James W. Campbell, 111 Broad st., New York.

W. H. Clark, 60 Quay st., Albany.

Lewis & Beardsley, Oswego.

Smith & Hunt, Toledo, Ohio.

G. W. Bissell, Detroit, Mich.

C. Walker & Son, Chicago, Ill.

H. H. Hurlbut, Western States.

May 15, 1851.

MACHINE WORKS OF ROGERS KETCHUM & GROSVENOR, Patterson, N. J.

The undersigned receive orders for the following articles manufactured by them of the most superior description in every particular. Their works being extensive, and the number of hands employed being large, they are enabled to execute both large and small orders with promptness and dispatch.

Railroad Work.—Locomotive Steam Engines and Tenders; Driving and other Locomotive Wheels, Axles Springs and Flange Tires; Car Wheels of Cast Iron a variety of patterns and chills; Car Wheels of Cast Iron with wrought tires; Axles of best American refined iron; springs; boxes and bolts for cars.

Cotton, Wool and Flax Machinery of all descriptions and of the most improved patterns, style and workmanship.

Mill gearing and millwright work generally, hydraulic and other presses; press screws; callenders; lathes and tools of all kinds; iron and brass castings of all descriptions.

ROGERS, KETCHUM & GROSVENOR, Patterson, N. J. or 74 Broadway, New York.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 136 NASSAU ST., NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.

SECOND QUARTO SERIES, VOL. VII., No 45! SATURDAY, NOVEMBER 8, 1851. [WHOLE No. 812 VOL. XXIV.]

PUBLISHED BY J. H. SCHULTZ & Co., 136 NASSAU ST.

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American Railroad Journal.

Saturday, November 8, 1851.

Pittsburg and Steubenville Railroad.

Messrs. D. Mitchell, Jr., and W. Milnor Roberts, the former Chief, and the latter Consulting Engineer of the above road, have published in the Pittsburg papers, the substance of their preliminary survey of the above line. Two favorable routes are found to exist. The distance by the longest, called the Chartier's Creek route, is 44 miles; by the shortest, called the Saw Mill Run route, 42 miles.

We copy the following from the report in reference to the general characteristics of the routes:—

The minimum radius of curvature, which will only be required for short distances at each end, in approaching the bridges, will be about 1000 feet. Generally, the radii of the curves will be 2000 feet or more.

The maximum grade required, will be 52 8-10 feet per mile, but a large portion of the route will be less than 30 feet per mile.

The principal bridges will be at the crossing of the Monongahela and Ohio rivers. There is no difficulty in constructing a bridge over the Monongahela, and making a direct connection with the Pennsylvania Central railroad at a moderate cost. It will require further and careful examination to determine the best mode of effecting this connection; of which we will be prepared to speak in detail hereafter.

In reference to bridging the Ohio we give the following:—

We have examined two proposed crossings of the Ohio at Steubenville; one directly opposite the town, about 1000 feet long, and the other about a mile higher up, requiring a bridge about 1200 feet long.

No railroad bridge has ever been erected over the Ohio river. On the subject of bridging this river, we shall present our views cheerfully, and with entire confidence that future events will sustain them.

In the first place, it is, we believe, universally conceded, that the best site for a high railroad bridge anywhere along the Ohio river, is at Steubenville; owing to the fact that the stream is narrow and the banks rising rapidly on both sides. In the next place, the Steubenville and Indiana railroad company have found no difficulty in locating their line in such a manner that it can be readily connected with a bridge at an elevation of 120 feet above the water—the height at which our grade line has been assumed.

A substantial, reliable, and entirely sufficient railroad bridge can be built at this favorable location, at much less expense than has been generally supposed. We are fully satisfied that such a bridge can be erected with a guaranty against any defect on account of want of strength, from the most extensive and experienced bridge builders in the United States. It will not, at this point, require a very extraordinary expenditure; and in our opinion, from the peculiar location, and the circumstances surrounding the question of a bridge at Steubenville, this structure should not be regarded by your company as a serious obstacle to the consummation of your project. The Steubenville and Indiana company, together with the citizens of Steubenville, (a flourishing and wealthy city numbering nearly 10,000 inhabitants) and thousands of others through the country on both sides of the river, are deeply interested in this bridge matter; and by a judicious union of interests, and harmonious action, a permanent bridge, free from any sound objection from any quarter, that will accommodate both railroad and ordinary travelling, can be secured, without involving an investment on the part of your company, of more than eighty or ninety thousand dollars.

The report estimates that the whole road will not cost over \$20,000 to the mile. This is a good evidence that the route is a good one.

We give the following extract from the report in which the advantages of this route are contrasted with its various rival routes:—

As the shortest and most direct communication of the Pennsylvania Central railroad towards Columbus, Cincinnati, and the great producing regions in Ohio and other States of the west and south west, its proper location is interesting not

only to the people on its route, but to thousands both east and west, who are to be directly and incidentally connected with it.

The local trade and travel of the rich country through which it will pass, will be heavy, and a large through business from the east and from the west, passing over the entire length of the Pennsylvania railroad, may fairly be anticipated, and indeed, confidently calculated upon.

It is a link, short,—but from its position entitled to high consideration, that will form a part of the shortest and best practicable railroad route between Philadelphia and Columbus; and the shortest outlet for the immense trade and travel that may be there concentrated. It is contemplated also, to extend the Steubenville and Indiana railroad (in addition to their line to Newark) through Mount Vernon to Marion, on the Bellefontaine and Indiana railroad; thus coming in direct connection with the great back bone line leading out to Indianapolis, Terre Haute, and St. Louis, and uniting with that vast net work of railroads, draining the most magnificent agricultural region in the world.

If Philadelphia is seeking the best connection with Columbus, the great concentrating point for an immense business south and south west of it, this is the route through which to attain it. We state this without fear of refutation, notwithstanding the bold and sweeping assertions which have been so frequently published within the past few months by the friends of the Hempfield road.

Compare the routes:

Distances from Philadelphia to Columbus by way of the Hempfield railroad.

Philadelphia to Greensburgh.....	322 miles.
Greensburgh to Wheeling.....	78 "
Wheeling to Zanesville.....	94 "
Zanesville to Columbus.....	59 "

553 miles.

Distances from Philadelphia to Columbus by way of Pittsburgh.

Philadelphia to Pittsburgh.....	353 miles
Pittsburgh to Steubenville.....	42 "
Steubenville to Columbus.....	114 "
Newark to Columbus.....	33 "

542 miles.

Difference 11 miles in favor of the Pittsburgh route, with maximum grades of 52 8-10 feet instead of 66 feet per mile as fixed by the Engineer on the Hempfield line.

The Rapids Convention.

The convention for the improvement of the navigation of the Mississippi river met at Burlington, Iowa, on the 23d ult., and organised by the choice of Gov. Hempstead, of Iowa, President. A very large number of delegates were in attendance.—We hope to get a copy of its proceedings in season for our next number.

Report of the Chief Engineer of the Baltimore and Ohio Railroad.

THOMAS SWANN, Esq., President:

Sir—In submitting my present annual report, I am enabled to say, that during the year just ended, the progress of the work in charge of my department has been as successful as could reasonably have been expected. In the following brief statements, I adhere to the division of the subject pursued in my report of last year:

DESCRIPTION OF WORK UNDER CONTRACT.

Graduation and Masonry.—Summing up what is said under this head in the report of a year ago, I have to state, that, in addition to the four lettings of work which at that date had taken place—viz in April, 1849, of 20 Sections—in July, of 24—in September of the same year, of 58, and in June of the following year, of 65 Sections, making 167 in all, there was a fifth and final letting in last December of 33 Sections, which covered the remainder of the line from Cumberland to Wheeling, forming a total of 200 Sections, the number of which agrees with the distance in miles between those points.*

The work contracted for at these lettings has embraced, under the head of "Graduation," the usual variety of earth and rock excavations, including, besides many deep cuts and fills, 12 tunnels, from 180 to 4,100 feet long, and of a total length of about 10,500 feet, or very nearly 2 miles—and the dry masonry of the culverts, drains and retaining walls accompanying grading of that character,—and under the head of "Masonry," 114 bridges, [23 arched and 91 rectangular,] of spans from 10 to 200 feet, chiefly of the smaller dimensions. The preceding work was all disposed of by public letting to the lowest suitable bidders.

Bridge Superstructures.—The timber for such of these as are constructed partly of wood has been obtained by contract with various persons near the line, and the iron work of those consisting wholly or in part of that material is being prepared in the Company's shops at Mount Clare.

Railway Tracks.—Under this head the Ballast and Cross-ties have been contracted for from time to time as was required to provide them in season for the laying of the rails. The ballast is supplied chiefly by the Graduation Contractors, who have evident facilities for furnishing it more cheaply than others. The cross-ties have been delivered mostly by owners of timber land in the neighborhood. The rails were imported from England under a contract [now complete] with Baring Brothers for 22,000 tons of the T pattern, 60 lbs. per yard. The chairs or joint-plates of wrought iron are being made in the Company's shops, out of iron imported by contract with Joshua Hartshorne, Esq.,—and the spikes are furnished under a contract with Messrs. Smith & Tyson of this city. The track is laid by workmen employed by the Company under the superintendence of Mr. Roseby Carr, so long Supervisor of the Division of the road near Baltimore, and so well known for his experience and energy.

Depot Buildings.—The few structures required under this head at the first opening of the road are being built, in part, of materials furnished by contract—and in part supplied from the Company's shops.

Water Stations.—The same remark is applicable to this branch of construction. Most of the work however is done by the day, to insure the faithful execution essential in all hydraulic works.

COST OF THE WORK UNDER CONTRACT.

Graduation and Masonry.—As stated under this head, in my report of last year, the cost of the work embraced in the 167 Sections of the four previous lettings was \$2,890,753, as estimated at the prices proposed. The fifth letting in December last, of the 32 additional Sections, added to this the sum of \$802,560, similarly estimated—making

a total of \$3,693,313—for the 199 Sections, and which by the addition of \$20,040 for the 200th Section in Wheeling, makes \$3,713,353. The cost of the work included in these lettings, as estimated by this department, was \$4,626,819, and the comparison of these two amounts would shew an apparent saving of \$913,466. The whole of this saving cannot however be realized, as much of the work, has had to be re-let at reduced prices.

The changes also in the location of the first thirty miles of the road and the enlargement of the principal bridges, necessitated by the arrangements with the canal company, for the right of way along the Potomac River, subsequent to the estimates referred to, have added heavily to the cost of the first division. Nevertheless I still entertain the belief that the liberal allowances made upon the other divisions in the quantities of excavation, embankment and masonry, will keep the excess of actual over contract cost within narrow limits, and indeed in view of the savings in the items of tunnel masonry and railway tracks, I have scarcely a doubt that the margin allowed for contingencies in the revised estimate last submitted to you will be found sufficient.

The estimate just referred to was as follows:—

Graduation and masonry.....	\$3,878,452
Bridge superstructures.....	170,000
Railway tracks.....	1,658,250
Depot and water stations.....	105,750
Right of way.....	100,000
Superintendence and contingencies, 5 per cent. on the above.....	297,872
Total—not including tunnel masonry..	\$6,210,324
The cost of tunnel masonry was estimated at.....	250,000

Making the total estimated cost.....\$6,460,324

At the original contract prices for the graduation and masonry. It was and still is expected that the item of tunnel masonry, or much the larger part of it, may be saved till after the opening of the road—and some of it altogether.

PROGRESS OF THE CONSTRUCTION.

The fact that the rails are now laid and the trains regularly running [over the Crab-tree grades] to beyond the crossing of the Youghiogheny river 55 miles from Cumberland, and about the centre of the Glades, shows that the grading and masonry of the road-bed must be finished to that point. There is some work left to be done on this part of the road—but it is of inconsiderable amount, and chiefly consists of what remains to carry the track through the cut on the 21st Section at its proper grade, [a summit surmounted by inclines readily passed by the trains, having been encountered there, in order to get the track on] and two short gaps in embankments upon the 45th and 47th Sections, now passed by substantial resting-places with the same object. The way is now nearly clear to Cheat river, 75 miles from Cumberland, although there are two or three points where slight detentions may occur in the advance of the track—which is expected to reach that river not later than the 1st of the coming December. This would be a month behind the time anticipated; but such have been the difficulties met in maintaining the necessary force upon the work, that it will appear to one familiar with them, rather a wonder that the point named could have been attained even at the later date; and when the magnitude of the work on these 75 miles, completed in two and a half years, is regarded, I am satisfied it will be admitted that a great deal has been accomplished. By the time the rails have reached Cheat river, the heavy sections lying within the next 12 miles, and including the Kingwood tunnel, will, it is hoped, be so well advanced as to permit the track to pass on with little interruption, and be pushed forward over the light grading beyond, along Raccoon and Three Forks creeks, to the Tygart's valley river bridge at Fetterman, 103½ miles from Cumberland, by about the 1st of March next, and thence to Fairmont, 124 miles from Cumberland, by the ensuing 1st of May. There will then remain eight months of the year 1852 to reach Wheeling, 76 miles beyond Fairmont, and 200 miles from Cumberland, and that this can be accomplished without difficulty there need be no doubt. The road of 124 miles in length, will then

have been three years in reaching Fairmont, about the time occupied ten years since in making it from Harper's Ferry to Cumberland, with this difference, however, in the circumstances, that in the case of the road east of Cumberland men were superabundant, and the work had rather to be kept in check; while in that of the new road, labor, after the first year, has been extremely difficult to procure. With an unlimited supply of hands, the work, which will have been upwards of three and a half years in construction from Cumberland to Wheeling, could have readily been done in less than three years.

It seems scarcely necessary to notice the state of the work at particular places after the account just given of its expected rate of advance from point to point, and especially in view of the very full description of all the prominent features of the line in my last annual report. It will be seen that the time set for the opening of the road to its terminus at Wheeling is not varied from that assumed in my letter of the 7th of April last, addressed to J. J. Turner, Esq., in reply to inquiries made by him by direction of the councils of the city. It has been necessary, however, to take a little indulgence in regard to the intermediate periods, for which I am sure I would have no difficulty in satisfying the board and the public that there are satisfactory reasons afforded by the actual occurrence of one of the contingencies under which I felt compelled to shield myself in making those conditional promises.

I have been, during the year just past, assisted in directing and pressing on the work by the several gentlemen mentioned in my last annual report, and whose unremitting attention to their arduous duties, deserves the highest praise. In maintaining order and suppressing intemperance upon the line, they have had to encounter much responsibility and some personal peril; and but for the courage and good conduct displayed on these occasions, aided by the armed and efficient police, which has been found indispensable, the work could not have proceeded with any degree of steadiness or rapidity. The commencement of surveys upon the Northwestern railroad, has provided immediate employment for most of those lately relieved from duty upon this line. Wm. H. Small, Esq., of the first division, after finishing his well performed duties here, has passed into that service, with his assistants, Messrs. G. H. Bryson and I. M. St. John, and some of the junior members of his party. Geo. Hoffman, Esq., of the second division, has furnished from his corps Mr. George W. Smith and Mr. John Dale, accompanied by Mr. Edmund O'Donnell, to the same service, which he will himself join, when prepared to retire from the position he has so ably filled on this work.

Which is respectfully submitted,

BENJ. H. LATROBE, Chief Eng.

Pennsylvania.

Catawissa, Williamsport and Erie Railroad.—

The results that the opening of the Erie railroad has effected upon the course of trade has aroused our neighboring State of Pennsylvania to the importance of a similar connection with Lake Erie, and they are now bringing up the old Sunbury and Erie project with a good prospect of success. The lower portion of the road to the Lake is to be supplied by the Catawissa.

This road commences at the Beaver Meadow railroad, at a point four miles west of Lehigh canal, and terminates at the flourishing town of Williamsport, on the west branch of the Susquehanna river, the capital of the county of Lycoming, in the State of Pennsylvania, being a distance of ninety-three miles.

At the town of Williamsport it meets the Williamsport and Elmira railroad, seventy-six miles from the New York and Erie railroad, at the village of Elmira, where it joins the great line from New York to Dunkirk, on Lake Erie, under the name of the New York and Erie railroad.

A portion of the Williamsport and Elmira road, say twenty-six miles, is already finished and in operation, and the remaining fifty miles is under contract, to be finished in the beginning of the year 1852.

The Catawissa road has been graded for a dou-

* The 200th Section through the Streets of Wheeling—should be omitted.—It is not yet provided for, and reduces the number of Sections actually let, to 199. The Wheeling Section will be light.—It will extend the road to the Depot required by law, on the North Bank of Wheeling Creek.

ble track, from its eastern termination to the Susquehanna river, at the town of Catawissa, a distance of forty eight miles, at an expenditure of about \$1,400,000, including \$80,000, the cost of its coal lands, interest on former loans which have been converted into stock, right of way, and all other claims and settlement of accounts against the company, now represented by about 28,000 shares of stock, of \$50 per share, making the sum of \$1,400,000.

On leaving the junction with the Beaver Meadow railroad, the road will run for a long distance through the second great coal field of Pennsylvania, known as the Lehigh Coal Field. For the first 12 miles will be through lands owned by the company. From the natural configuration of the country, the above road must serve as the outlet for a very large area of coal field. The report estimates that upon the completion of the first 24 miles, the road would transport at least 270,000 tons of coal; which at three cents per ton per mile would yield a gross income of \$194,400 or a net income of \$129,600, estimating the cost of transportation at one cent per ton per mile.

Upon the completion of the road to Catawissa, the annual receipts are estimated at \$343,500. In the neighborhood there are seventeen furnaces, besides other establishments which would require to supply them at least 150,000 tons per annum. The road would also be a route for the transportation of the products of these establishments to a market. In fine the entire country from Beaver Meadow junction to Catawissa possesses all the elements for an immense business.

We copy the following from the report in reference to the

BUSINESS RESOURCES OF THE ROAD, WHEN COMPLETED TO WILLIAMSPORT, WITH BRANCH TO DANVILLE.

Irrespective of any results to the Catawissa road, from its peculiar position for a successful coal trade, growing out of its proximity to the richest coal and iron fields in Pennsylvania, it forms a part of a great line, from the Lakes to Philadelphia, the distance of which, would be as follows:—

Dunkirk, on Lake Erie, by the New York and Erie railroad, to Elmira, finished in May, 1851.....	192 miles.
Elmira to Williamsport, by the Williamsport and Elmira railroad, (26 miles in operation,) and 50 miles under contract, to be completed in 1852.	76 "
Williamsport to Catawissa, about to be put under contract.....	45 "
Catawissa, to a point on the Catawissa, Williamsport and Erie railroad, called "Linders Gap," or "Tamanend."	38 "
From Tamanend, to Tamaqua, a part of the road in the charter of the company next named, surveyed.....	6 "
Tamaqua, to Port Clinton, laid with heavy iron, and in successful operation.....	21 "
Port Clinton, to Philadelphia, by the Reading railroad.....	78 "

The distance from Dunkirk to Phil... 456 miles. The highest grade, from Williamsport to Philadelphia, coming east, is 35 feet to the mile.

It will be observed that the distance from Dunkirk to Philadelphia is 456 miles.

The New York and Erie railroad, from Dunkirk to New York, including 24 miles of the Hudson river, from Piermont is 470 miles.

It appears by a recent report from the Directors of the latter company, that its stock and debt is \$20,500,000 of which \$2,500,000 "is chargeable to equipment account," leaving \$18,000,000 for cost of the road.

In the same report, the estimate of the profits to the stockholders in the year 1852, after paying the expenses of the road, and the interest on its debt, is put down "equal to 14½ per cent. upon the capital stock now issued," and for the year 1853, the

estimate upon the same basis is "equal to 17 per cent. upon capital issued."

It is confidently believed that the sources of general business to the line of road, of which the Catawissa forms a part, is quite equal to the New York and Erie, and there is, in addition, the business growing out of the vast trade in coal and iron, to supply as well the demand for consumption of the west as the east.

It will be noticed, by a preceeding statement that the distance from Elmira to Philadelphia is 264 miles, and that from Elmira to Dunkirk is 192 miles. From Elmira to New York is 300 miles, and while the Catawissa road would derive the benefits of the Lake trade with Philadelphia, so by the following route it would also be benefitted by the trade to New York:—

Elmira to Williamsport, as in preceding statement.....	76 miles.
Williamsport to Catawissa, as in preceding statement.....	45 "
Catawissa, to junction with Beaver Meadow railroad.....	48 "
Beaver meadow road to Easton, [40 miles yet to be made].....	56 "
Easton over Sommerville road, to Elizabeth Port.....	62 "
Elizabeth Port to New York.....	13 "
	300 miles.

Charters have been obtained and stock taken to complete the route, but money adequate to the completion of 40 miles of the same, would be required beyond that which would be required to finish the route to Philadelphia.

The immense resources of the west, and the magnitude of the trade through the great inland seas of that region, fostered and increased by means of railroads springing up, as if by magic, renders it certain that the New York and Erie railroad, with its single track only, aided, as it will be, by the Buffalo and Albany road, cannot supply the demands of travel and transportation to the seaboard, and the outlet of that road at Elmira by the routes herein referred to, is called for by high public considerations, equally interesting to Philadelphia and New York, and the general interest of the trade and commerce of the world.

Having made a reference to the line of railroad from Buffalo to Albany, it may be proper to consider how far that line may furnish business to the route, of which the Catawissa forms a part.

From Buffalo to Canandaigua, is....	104 miles.
From Canandaigua to Jefferson, the head of Seneca Lake, a railroad is in progress, and to be finished in some few months.....	46 "
Jefferson to Elmira, a road already in successful operation.....	21 "
	171 "
From Elmira to Philadelphia.....	264 "
Making from Buffalo to Philadelphia, via the Catawissa road.....	435 "
From Buffalo to Elmira, as above.....	171 "
From Elmira to New York, via the New York and Erie railroad.....	284 "

Making from Buffalo to New York by the last route..... 455 "

From Canandaigua, a distance of 28 miles, to Rochester, a railroad has been in operation for several years. From Rochester to Niagara Falls, a distance of seventy-four miles, a road has been in part constructed, and the remainder is under contract for construction, and will be finished in about one year, and is to be connected with the Niagara Suspension Bridge, and with the Canada railroads, leading to Detroit. The distance from Philadelphia to Niagara Falls, would be thus:

Philadelphia to Elmira.....	264 miles.
Elmira to Jefferson.....	21 "
Jefferson to Canandaigua.....	46 "
Canandaigua to Rochester.....	28 "
Rochester to Niagara Falls.....	74 "
Making from Philadelphia to Niagara Falls.....	433 "

As already stated the road is graded for a double track from the Beaver Meadow railroad to Catawissa, a distance of 48 miles. This cost is represented by 28,000 shares at \$50 per share, making \$1,400,000. It is estimated that \$400,500 more will complete the road to the Susquehanna. From Catawissa to Williamsport the distance is 14½ miles. The estimated cost of this section of the line with a branch to Danville of eight miles, \$1,315,323, to this estimate is to be added the cost of the equipment, making the total cost of the whole road, \$3,750,000.

The company propose to raise the balance necessary to complete the road, viz:—\$2,350,000; First, by issuing bonds to the amount of \$1,000,000, which will be sufficient for the purchase of the iron (10,000 tons) and complete the road to Catawissa. Second, by the issue 2,000 shares of common and 30,000 shares of preferred stock, leaving 8 per cent. interest.

The following is a summary of the proposed capital stock and mortgage debt of the company:—

28,000 shares old stock.....	\$1,400,000
2,000 " ".....	100,000
30,000 " preferred stock.....	1,500,000
Bonds.....	1,000,000
	\$4,000,000

The friends of the above project regard it as the trunk line of railroads from Philadelphia to Erie, and to western New York. Both Philadelphia and Baltimore are nearer than this city to Buffalo by any practicable route, and will, when connected with it by railroad, draw a large trade from that quarter. The construction of the Sunbury and Erie railroad, we regard as a certain event at no distant day. Philadelphia feels compelled to follow the example of New York, in having her own route to the Lakes, and will lend all her energies to the last named work as soon as the Pennsylvania railroad shall be completed.

This city has a direct interest in the opening of the Catawissa road, as it will bring us into more intimate connection with the coal fields, and with central Pennsylvania. The New Jersey central road will soon be opened to Easton. Active measures are now in progress to construct a railroad from the last named place to the Beaver Meadow railroad. The completion of the above works would form a very direct line of railroad from New York to the Susquehanna River, and would enable us to share the benefits resulting from the opening of the Sunbury and Erie railroad.

From the Merchant's Magazine.

Internal Improvements in the State of New York.

A SKETCH OF THE RISE, PROGRESS, AND PRESENT CONDITION OF INTERNAL IMPROVEMENTS IN THE STATE OF NEW YORK.

RAILROADS, ETC.

Continued from Page 653.

The railroad line from the Hudson river, at Albany, to Buffalo, on Lake Erie, was constructed under seven distinct corporations. The portion from Albany to Schenectady, 16 miles, was completed in 1831; the road from Schenectady to Utica, 78 miles, was finished in 1836, and the conveyance by railroad was not carried beyond Utica, for three years; and in the meantime a railroad from Rochester to Batavia 33 miles, was put in operation in 1837; and extended 12 miles to Attica in 1842. The road from Utica to Syracuse, 53 miles, was not put in operation until July, 1839. The road from Syracuse to Auburn, 25 7-10 miles was not in full operation until 1839, although 22 miles were operated with horse power from January, 1838, the cars running upon wooden ribbons laid on the wooden rails. The Auburn and Rochester

road, 78½ miles, was completed in November, 1841. The Attica and Buffalo, 31 miles, was commenced September, 1841, and finished December, 1842.—The Troy and Schenectady road was also finished in 1842.* At the commencement of 1843, therefore a connected line of railroad was in operation from Albany and Troy, to Buffalo, at an aggregate expense at that time of about seven millions of dollars, a little more than the original cost of the Erie canal. The aggregate cost of these eight roads, as given in the annual reports of 1850, exceeds fifteen millions and a quarter of dollars.

	Cost.	Tolls.	Expenses.
Erie canal, original cost.....	\$7,143,789	\$2,926,316	\$439,796
Erie canal enlargement.....	15,990,443	....	....
Champlain canal.....	1,257,604	128,761	61,100
Oswego canal.....	565,437	94,524	33,229
Cayuga and Seneca canal..	237,000	27,589	11,956
Cheunung canal	648,600	16,276	30,782
Chenango canal	2,420,000	20,343	26,308
Black River canal.....	2,057,388	1,115	10,014
Genesee Valley canal.....	4,477,969	25,821	10,737
Oneida Lake canal.....	50,000	2,513	5,264
Oneida river improvement....	84,083	5,555	394
Seneca River towing path.	14,861	230	....
Cayuga Inlet....	11,279	205	....
Delaware and Hudson Canal.....	3,871,620	....	....

Total canals, 862 miles, \$38,986,857 \$3,254,051 \$637,580

Summary of the two Tables.

Total length of canal navigation within the limits of the State of New York..	862
Total length of railroads within the limits of the State of N. York.....	1,657½
Total cost of canals...	\$38,986,857
" railroads.	61,039,524
	\$100,026,381
Gross annual revenue from canal tolls.....	\$3,254,051
Gross annual earnings of railroads.....	5,941,435
	9,195,486
Expenses for maintenance of canals.....	\$637,580
Expenses for maintenance of railroads...	2,645,186
	3,282,766

In order to make a just comparison between the annual receipts of the railroads, and those of the canals, it is necessary to add to the tolls, the sums paid to those engaged in the transportation of products on the canals; the tolls being merely an equivalent for the use of the canal or way, constructed by the State; whereas the railroad companies furnish not only the road way, but the vehicles in which the commodities are laden, and the motive power. Those engaged in the transportation business on the canals, have 4 or 5 millions invested in boats, horses, &c., and the annual expenses for persons employed in managing the boats and horses, and the maintenance of the force necessary to attend to the transportation business, is very great. The sums paid for transportation on all the canals in 1849, separate from the State tolls, was equal to \$2,459,963; add to this the tolls of the same year, \$3,268,226, and the total is

* The railroad from Albany to Boston, was opened in December, 1841. This being done, the enterprising spirit of Boston furnished the necessary means to complete and put in operation the Attica and Buffalo road, which had been chartered in 1836, and extended in 1838.

\$5,764,189. In 1847 the total sum paid on account of tolls and freight on the canals, was equal to \$8,453,533. This large sum was paid in 214 days of 1847, merely for moving the property which passed on the New York canals. Assuming that the transportation on the canals for 1850, was the same as in 1849, it makes with the tolls of 1850, a total of \$5,750,014.* This is the sum paid in the year 1850, for the mere transportation of persons and property, on the canals and railroads within the limits of New York, and not including the Delaware and Hudson canal, or the transportation on the Hudson river.

In comparing the relative cost of canals and railroads, as given in the preceding tables, it is to be understood that many items enter into the "construction account" of railroads, which are excluded from the cost of canals. Some of the railroads pay interest on stock before the road earns anything, and this is added to the cost; in borrowing money they receive 85 or 95 cents from the lender, and issue bonds for 100; this difference, with interest on the bonds issued, is added to the cost of the road. In some cases the old superstructure is removed and a new and more expensive one is substituted, and the entire cost of the new one is added to "construction account," and no deduction made for depreciation on account of the old one.†

On the State canals, the law prescribes a rule which excludes all repairs from the original cost of construction; when the acting commissioner has completed a new canal, or a section of it, he reports the fact to the Canal Board, and that board appoints a superintendent, with whom an account is opened and all expenditures are thereafter charged to the account of "repairs." If money has been borrowed for the work, the interest does not come in to swell the "construction account," the latter account being charged simply with the sums advanced to the acting commissioner, and by him paid to the contractor who constructs the canal, and the superintending engineer for his salary.—And thus, at the close of 1838, when thirty-one millions had been expended on the Erie and Champlain canals, including more than nine millions for interest and repairs, the "construction account," of those canals stood at \$8,401,394 12, this account not having been increased from 1826, when these works were completed. The wooden structures on the canals are replaced once in about eight years, and new locks, aqueducts, &c., are constructed and charged to the account of repairs. Although the cost of the State canals, in the preceding table, is given at \$35,155,237, the whole expenditure by the State on account of all the State canals, from 1817 to 1850, exceeds ninety-three millions of dollars.

THE NEW YORK AND HARLEM RAILROAD was chartered in 1831. In 1834, only four miles were in operation, to Yorkville. The capital was originally \$350,000; increased to \$750,000 previous to 1839. In the latter year the company had finished seven and a half miles, at a cost of \$1,035,000, and were authorised to increase the capital to \$1,950,000. In 1840, power was given to extend the road through the county of Westchester, to connect with the Albany railroad, and the sum of \$1,000,000 was added to the capital of the company. In 1845, an act was passed, authorizing this company to extend their road from White Plains to Albany. The road was completed to Dover, in Dutchess county, 80 miles from the city of New York, in 1848-9. It is now under contract from Dover to Chatham, about 50 miles, where it will connect with the road from Boston to Albany. From this point the Harlem road will, in a short time, be connected with an extensive chain of roads extending through Vermont, and will afford to a portion of the inhabi-

* The total will then be as follows, for the year ending 30th September, 1850:—

Received for tolls and transportation on the state canals.....	\$5,750,014
Received on the railroads within the state.....	5,721,572
Total.....	\$11,471,586

† The engines, cars, and all expenses for the equipment of the roads are also embraced in the preceding table of cost. On the canals, the boats, horses, &c., are the property of individuals.

tants of that State, and of Massachusetts, a more direct route to the city of New York than they have heretofore had.

THE NEW YORK AND ERIE RAILROAD was opened to Dunkirk on the 15th of June, 1851. It was finished within the time specified in the law of 1845, to entitle the company to a release from the State lien of \$3,000,000, and the claim has been cancelled. This is a relief to the company of \$5,256,261 55, being the amount of principal and interest on the stock loaned to the company from 1842 to the time of payment. In revising the line of the road, it became necessary to pass for a short distance within the jurisdiction of Pennsylvania. In granting the request of the company, the Legislature of the State affixed a condition that, after the road is completed to Lake Erie, the company shall annually thereafter pay \$10,000 into the Treasury of Pennsylvania. This is an illiberal provision unless the money is received as an equivalent for taxes and other exemptions.*

Previous to 1845, as stated by the president of this company, about five millions of dollars had been expended, at which time the company had in operation 46 miles of road, the condition of which was such as hardly to permit a train of cars to pass over it with safety; and two millions, which had been expended west of Binghamton, was of little value, owing to the decay of materials by the use of piles, and a change of the line to improve the grade.

The subscribers to the stock of three millions of dollars in 1845, were assured by the directors, that interest at the rate of 6 per cent per annum should be paid to them semi-annually, "from the date of the respective payments, until a single track of the road shall be completed and put in use from the Hudson to Lake Erie, and also a branch to Newburg." This promise has been faithfully kept, and the last instalment of interest has been paid since the road was opened to Lake Erie. Hereafter the stockholders will be dependent for dividends on the net earnings of the road. The amount of capital stock paid in is \$5,801,285 29.

Heavy expenses have been incurred in altering the line, reducing the grade, and erecting permanent and durable structures. To produce a comparatively even surface, for a distance of 445 miles, over the mountains and across the rivers and ravines which interpose between Piermont, on the Hudson river, and Dunkirk, on Lake Erie, so as to permit the passage of trains of cars at the rate of twenty-five miles an hour, is a work of no ordinary character.

Three miles west of Port Jervis, the Delaware

* When Massachusetts desired to extend a railroad from Boston to the Hudson river, passing nearly forty miles through the territory of New York, a law was passed by the latter State to appoint commissioners to facilitate the measure, and an appropriation was made to defray the expenses of a survey of the road to the State line; and the law also contains the following provision:—"If the State of Massachusetts shall construct a railroad from Boston to the eastern boundary of this State, either directly, or through the medium of an incorporated company, the Legislature of this State will construct it from thence to the Hudson river, or grant to the State of Massachusetts, or some authorized company, the right of so doing, and taking toll thereon under proper restrictions as to jurisdiction." Although the obvious tendency of the Massachusetts road was to divert a portion of the trade of the Erie canal from the city of New York, yet the Legislature was willing to make a free grant to those interested in the road of the same privileges as if they were citizens of New York. And in the management of the public works of N. York, the State has uniformly resisted all attempts to establish any discrimination, either in the rates of toll or otherwise, between our own citizens and those of other States and Canada in the use of the canals. If these works had been constructed by the general government, as was contemplated at one time, the privilege of using them by citizens of all other States could not have been more impartially dispensed by the national government than it has been by the government of New York. Instead of losing by this liberal policy the interests of this State have obviously been promoted by it.

river is crossed on a bridge 800 feet in length, sustained on piers of masonry and arches of 150 feet span, the grade of the road being 40 feet above the water in the river. The Lackawaxen river is crossed by a bridge 450 long, and above this point the road recrosses the Delaware, from Pennsylvania to New York, on a bridge 580 feet in length.—There is a third bridge across the Delaware at Deposit. Between the first bridge and the Lackawaxen river, the track is laid on a shelf 100 feet above the river, having on one side a sustaining wall of 16,000 cubic yards of stone work, and on the other a precipice. Three miles of the road, on this line, cost \$300,000.

In passing west over the high lands between the Delaware and Susquehanna rivers, there is an ascending grade of 57 feet per mile, for seven and a half miles, and from the gulf summit a descending grade of 60 feet for eight miles to Lanesboro'; this is the maximum grade of the whole line. The construction of a section of one mile, at the gulf summit, cost \$200,000. The "Cascade bridge" is constructed over a chasm 180 feet in depth, with one span 275 feet in length; within a short distance of this place the road is carried over a creek and ravine on a massive stone structure, called the "Starucca Viaduct," at an elevation of 100 feet, requiring eighteen stone piers and arches, containing 22,000 cubic yards of masonry, at a cost of \$320,000. There is a bridge across the Susquehanna 800 feet long.

In referring to the improvements in the line of the road since 1845, Mr. Loder states that "the line, as now constructed, will have between Dunkirk and the Hudson river, about 300 miles of level or slightly ascending grade, of not exceeding five feet to the mile."

The HUDSON RIVER RAILROAD was chartered in 1846, but the subscription not being filled, the charter was amended in 1847, allowing the payment of interest on subscriptions. The commissioners, to get subscriptions, and directors, in 1847, were John B. Jervis, Saul Alley, Stephen Allen, James Hooker, James Boorman, James N. Wells, Robert Kelly, William Chamberlain, Gardner G. Howland, Fortune C. White, Gouverneur Kemble, Aaron Ward, and Thomas Suffren. These persons made large subscriptions themselves, and by their great personal efforts obtained the required capital of three millions of dollars. It was a condition of the subscription that interest, at the rate of 7 per cent, should be paid from the date of the first instalment until the road was finished to Albany.

This road was completed from New York to Poughkeepsie, seventy-five miles, at the close of 1849. In this distance there is 3,376 feet in length of tunnelling, including the brick arch of 600 feet for passing under the Sing Sing prison yard. The principal tunnels are one at New Hamburg, through compact lime stone, 800 feet long; one through Breakneck Hill, 500 feet, and one through Anthony's Nose, 350 feet; the two latter in the granite of the Highlands. The width of the tunnels is twenty-four feet, and the height eighteen.—In the line from New York to Poughkeepsie, forty-four miles are exposed to the river, and there is thirty-seven miles of protection wall on the river side.

The highest grade, on this road, is fifteen feet to the mile, at Poughkeepsie—there is another of thirteen feet, and others of ten—but these are only for short distances, and generally at stopping places, where the rise is of no practical importance. For nearly the whole distance from New York to Albany, the grade corresponds with the tide level.

In addition to the cash capital of three millions of dollars, the company was authorized to issue one million of stock to pay interest on the subscription. The interest was paid in cash until 1849, since which time it has been paid in stock, at par. When the road is finished to Albany, the interest is to cease, and the stockholders will depend for dividends on the net earnings of the road. Four millions of dollars have been borrowed on a first mortgage of the road, and loans have been negotiated for two millions on a second mortgage.—This makes a total of four millions of stock and six millions of debt.

THE DELAWARE AND HUDSON CANAL, extending from a point on the Hudson river, ninety-four

miles above the city of New York, to Honesdale, in Pennsylvania, 107 miles, with a railroad from the latter place to Carbondale, sixteen miles, is the work of a private company, operating under charters obtained from the States of New York and Pennsylvania. This work was completed in 1829, at a cost of \$2,305,599 50. As originally constructed, the locks were seventy-six by nine feet, the water is thirty-six feet wide on the surface, and four feet deep. Between 1841 and 1844, such improvements were made in enlarging the canal and doubling the track of the railroad for ten miles, and otherwise improving the work, that in the latter year, 255,000 tons of coal were transported over the railroad, and boats were able to navigate the canal with cargoes of forty-five tons, being an increase of more than 50 per cent on the original canal cargo, and more than 100 per cent on the original capacity of the railroad. Subsequently the company added six inches more to the depth of water in the canal, so as to permit the passage of boats, in 1846, of fifty to fifty-five tons, the capacity of the canal being adequate to the transportation, annually, of 850,000 tons of coal.

The company is now engaged (1851) in again enlarging the canal, so as to give a depth of six feet, and a width at bottom of thirty-two feet of water, the surface width being generally forty-five feet, allowing the use of boats with a cargo of 130 tons. The new locks are 100 feet long and 15 wide. It is estimated that this improvement will more than double the capacity of the canal; and it has been made to allow the transit of an increased quantity of coal brought to the canal by the Pennsylvania Coal Company, which has constructed a double track railroad from the canal, at Hawley, a distance of forty-five miles, to another section of the northern coal field. The extent of the canal within the limits of New York, is eighty-four miles, and the expenditure, within the State, to August, 1851, is \$3,871,620.

This company, after its charter was obtained, in 1823, sent an engineer to England to obtain information in regard to the construction of railroads. And Horatio Allen, Esq., chief engineer of the Erie railroad, stated in a speech at the opening of that road, that the first trial of a locomotive engine on the Western Hemisphere, was made by himself on the Carbondale railroad, in the year 1828.

This company has constructed four "wire suspension aqueducts" for carrying the canal across the Delaware and other rivers. These structures are of a novel and interesting character, and are in the highest degree creditable to the skill of the engineer, who constructed them, and the enterprise of the company. The following description of these aqueducts has been obtained from R. T. Lord, Esq., chief engineer of the Delaware and Hudson Canal.

The aqueduct over the Delaware river, connecting Pike county, in Pennsylvania, with Sullivan county, in New York, was constructed in the years 1847 and 1848. Another over the Lackawaxen, in 1849, and one over the Neversink, and another over the Rondout, in New York, in 1850. These aqueducts are constructed on the plan of the Piusburg Suspension Aqueduct, a structure which has proved eminently successful, and was the first of its kind in the world, designed and executed by John A. Roebling, Esq., civil engineer, of the city of Pittsburgh. After an examination of this work, by Mr. Lord, a contract was entered into for the erection of the superstructure of those on the Delaware and Hudson canal.

"The trunks are composed of timber and plank, well joined and caulked, and suspended to two wire cables, one on each side. The cables rest in heavy cast iron saddles, which are placed on top of small stone towers of about four by six feet base, rising four or five feet above the tow path. The towers are each composed of three blocks of white quartz pudding stone. There is a tow path on each side of the trunk. The cables are made in one length across the rivers, from abutment to abutment, and connected at their ends with anchor chains, manufactured of solid wrought iron, in bars of from five feet to ten feet long, and five to six inches wide, by one and a half inches thick. The lower end of each chain is secured to a heavy cast iron anchor plate of six feet square, which supports the foundation of a large body of masonry, the

weight of which resists the strain of the chain and cable. As the cables are protected against oxydation by a copious varnish and paint, and closely encased by a tight wire wrapping, which gives them the appearance of solid cylinders, they may be considered as indestructible."

The following table exhibits the principal dimensions and quantities of the Delaware aqueduct:—

Hydraulic cement masonry, in abutments, piers, and anchorage, cubic yards	7,688
Length of aqueduct, with extensions, feet	600
Number of spans, (varying from 131 to 142 feet).....	4
Width of trunk at water-line, feet.....	19
Depth of water in aqueduct, feet.....	6½
Weight of water between abutments, tons.	1,950
Weight of water in one span, tons.....	487½
Diameter of wire cables, inches.....	8½
Length of wire weighing one lb, feet.....	17½
Number of wires in each cable.....	2,150
Total weight of cables and anchor chains, lbs.....	190,000
Ultimate strength of each cable, tons.....	1,900

The bottom of the aqueduct is elevated twenty-eight feet above the waters of the river.

The Neversink aqueduct has one span of 170 feet, the wires in each cable are 2,880, the cables nine and a half inches in diameter, and the ultimate strength of the cables 5,200 tons; tension of cables 998 tons.

The aqueduct at the Highfalls has 1 span of 145 feet—weight of water 538 tons—tension of cables resulting 790 tons—number of wires in each cable 2,300—ultimate strength of cables 4,100 tons.

Mr. Lord states that from the most careful attention and inspection of these aqueducts, in this State and in Pennsylvania, he is "decidedly of the opinion that the plan, as designed and executed by John A. Roebling, Esq., secures the best combination of wood and iron that has ever been effected for works of the kind, both in regard to economy and durability. With the exception of a wooden trunk, (which may be economically made of plate iron,) all the important portion of the work will last, it may be said, an indefinite period."

STRUCTURES ON THE STATE CANALS.—There are many structures on the public works of the State of great solidity and beauty. Between Albany and the lower aqueduct, across the Mohawk, there are thirty-seven locks, which cost, on the average, \$85,689 10 a pair, or, \$42,844 55 for each lock.—The old locks cost \$10,000 each. The aqueduct across the Mohawk, about 1,100 feet long, and constructed entirely of stone, cost \$346,856; the upper aqueduct originally cost \$87,127 61. It was 802 feet long, and sustained by ten arches of fifty feet span. There are five pairs of combined locks, at Lockport, which cost over half a million of dollars. The old double locks cost \$123,309, exclusive of excavation.

On the Chenango Canal, six reservoirs were constructed, to supply the summit level with water. The whole covered an area of a thousand acres.—These reservoirs, besides aiding the Chenango Canal, have been useful in furnishing water for the eastern end of the long level of the Erie canal.

Illinois.

Burlington and Peoria Railroad.—We learn by the Knoxville Journal and Burlington, (Iowa) papers that the projected railroad from Burlington to Peoria has all been put under contract. Arrangements have been made whereby the means for constructing the road may be readily obtained, and the whole is to be finished in two years. Such are the statements in the papers referred to, and we trust their participations may be realized. There can be no doubt that the road, connecting as it will with all railroads of the west will pay a very handsome profit to the stockholders. A large proportion of the capital has been subscribed at Burlington and along the line of the road, showing a sagacity and liberality among the people interested rarely to be met with. This enterprise has been taken hold of with such determination and vigor as to forbid every prediction of failure. We say to those engaged in it "go ahead" in spite of all obstacles, and in triumphing you will reap a reward which will compensate you a hundred fold.

Tennessee.

The following are the recommendations of Gov. Trousdale, of Tennessee, in his valedictory message, in reference to adding the railroad projects in that State. After mentioning the several roads now in progress he says:—

We are all satisfied of the benefits which would result to the state from a well organized system of railroad communication. But the great question is, Can the state safely extend such aid to individual enterprise, as will accomplish this desirable object? This is a question alone for the determination of your honorable body. Experience has shown that partnerships between the state and individuals, in works of internal improvements, result badly. Perhaps the better plan would be, to grant liberal charters to companies composed of individuals, for the construction of railroads. Let them by their money and labor prepare the road for the rails and fixtures, and then call upon the state for aid. Should it appear from investigation that the improvements thus made, when finished, would be profitable, let a lien be taken by the state upon the whole stock of the company in the road as completed, and upon the rails and fixtures, to save the state from loss; then let the state loan her credit in state bonds, payable at a distant day, say fifty years or less, bearing an interest of 6 per cent payable semi-annually, at some commercial point in the United States. Should the credit of the state not be impaired by the issue of bonds to an amount beyond which it can safely go, the bonds will sell in market for a premium, which might be applied in the payment of interest. In this way, works of internal improvement may be constructed and put in operation, which would defray the expense of building, and enrich the individual stock-holders, and the state be subjected to no cost and but little risk in the aid she affords in the construction.

Toronto and Lake Huron Railroad.

We have already given an account of the opening ceremonies of this road. In speaking of its connections, and its probable influence upon the course of travel, the Lake Superior Journal says:—

Saut Ste. Marie is at present the natural western terminus of this northern route; if a ship canal should ever be built across this short portage, connecting Lake Huron with Lake Superior, this terminus would be removed five hundred miles westward to Fond du Lac at the head of Lake Superior, in Minnesota territory. A railroad, thence to the Upper Mississippi, a work that is likely to be soon undertaken would remove this terminus still further to the great west. This northern railroad commences at Toronto a fine city and easily accessible to the whole east, and runs in a north-westerly direction to Lake Huron or the eastern extremity of the Georgian Bay, a distance of about 80 miles, from which point there is a beautiful, river-like navigation to this place, a distance of 250 miles, making a very direct line from Toronto to the foot of Lake Superior, in distance not over 330 miles, or some 400 miles less than by the other route via Detroit and Buffalo.

For a few years to come, till the Saut Ship canal is constructed and also the communication from Fond du Lac with the Mississippi, the travel and business will be turned off, in a measure, at this point from this direct route to that via Mackinac and Lake Michigan. And soon as this Toronto road is completed, we expect to see a daily line of steamers plying between its western terminus to this place and Mackinac, for besides saving the 400 miles; the traveling community will find it a delightful route and will save the crossing of Lake Huron, except that portion of it included in the Georgian Bay, which can be navigated by steamers in all kinds of weather.

But eventually this will be but a part of the great thoroughfare from the east to Lake Superior, Minnesota and the States west. Sooner or later Lakes Huron and Superior will be connected by a ship canal, on one side or the other, and steamers will run directly from Detroit and Penetanguishene to Fond du Lac; the shores of Lake Superior will be crowded with towns and cities; from the south and the east the tide of population will set into Minnesota and the region west, and people will

wonder that canals and railroads were not sooner built, and that so valuable, healthy and pleasant a country was not sooner settled.

Capital Trial for Obstructing a Railroad Train.

A trial of much interest recently took place in the Court of Common Pleas, Cuyahoga county, Ohio, which resulted in the conviction of Horace L. Brooks, of murder in the second degree, for placing an obstruction upon the Cleveland and Pittsburg railroad track, by which an accident to the train was caused, resulting in loss of life. The testimony in the case was circumstantial, but seemed clearly to fix the guilt upon the prisoner. The indictment was under the following statute of the State:

Be it enacted, etc., That every person who shall willfully and maliciously remove, break, displace, throw down, destroy, or in any manner injure, any iron, wooden or other rail, etc., * * * or who shall willfully and maliciously place any obstruction or obstructions upon the rails or tracks of any such railroad, shall, on conviction thereof, be punished by imprisonment in the penitentiary not exceeding three years nor less than one year; provided, however, that if any person shall by the commission of either of the aforesaid offences, occasion the death of any person or persons, the person so offending shall be deemed guilty of murder in the first or second degree, or manslaughter, according to the nature of the offence; and on conviction thereof shall be punished as in other cases.

It did not appear that the prisoner had any intention to injure any individual in the train, but was actuated solely by ill will towards the company. By the statute the party is made responsible for the consequences of his act, although there may have been no design to injure any individual.

The Great Railroad Pier; Made Land.

This immense enterprise is rapidly going forward. More than three hundred feet of the pier have been already completed. Few have any conception of the magnitude and expense of the undertaking of which this pier is a part. The pier alone will be 1200 feet long by 200 feet wide, and built in the most substantial manner. The Pittsburg track crosses the pier by a pile road near Bath street, 40 feet farther out in the lake. The proposed pier of the Lake Shore road will meet the Columbus railroad pier. At the junction, a passenger depot 300 feet long and 100 wide, will be built upon the former pier, and a passenger depot 400 feet long and 200 wide, upon the latter pier.

Two rows of piers, filled between with stones, will be driven from a point 650 feet from the shore upon Stockley's pier, to a point at the same distance from the shore upon the government pier—thus entirely fencing out the lake. The still water will then be filled up, and that unprofitable part of the lake become made land.

It is said that a year and a half will be needed to complete the work. It will cost not less than \$200,000, probably more. Twenty-five hands are now engaged in building the pier—they make good progress. The work is managed by George Smith, Esq., contractor. He is a thoroughly efficient gentleman, and will keep things moving.—*Plaindealer.*

Ohio.

Pittsburg and Cincinnati Railroad.—Gen. C. Anthony, President of the road, has given notice, that proposals will be received from the 1st to the 10th of November, at the office of the company in Springfield, for clearing, grubbing, ballasting, masonry, bridging, ties and tracklaying, of that portion of the line lying between Marysville and Delaware. The portion between Springfield and Marysville was put under contract sometime since. About one-half the line will be under contract after the 15th of November, when the accepted propositions will be announced. At Delaware the line connects with the Cleveland and Columbus railroad, thus giving that line the advantage of two distinct routes from that point to Cincinnati, one by Columbus, the other by Springfield. We

presume the remainder of the line, between Marysville and Loudonville, passing through Mt. Vernon, will be put under contract at an early day. It is very important to Pittsburg that it should be finished to Loudonville as soon as possible, as it will give us a most capital through line to Cincinnati. Our road will be finished to Loudonville next summer, and we trust the Pittsburg and Cincinnati road will be completed by the spring following.

Nashville and Mississippi Railroad.

We learn (says the Nashville True Whig,) that Messrs. Hazelhurst and Green, two able and energetic Engineers, accompanied by an efficient corps of assistants, set out yesterday for the purpose of making an instrumental survey of the contemplated railroad to connect Nashville with the Mississippi river at, or not far distant from Madrid Bend—at least we understand the base line first to be surveyed will tend to that point on the Mississippi.

This line of road is intended as a continuation of the East Tennessee and Virginia road through the East Tennessee and Georgia railroad from Knoxville to Cleveland, or some other point, whence a short line of road, (also in contemplation,) will connect it with the Nashville and Chattanooga—thus forming a continuous and direct line through the valley of Virginia, east, middle and western Tennessee, to the great Mississippi, at the same time giving us access to the southern portion of Kentucky—and if we cast our eyes westward still further, we find it but a step as it were to unite us with the great Pacific railroad now in course of construction from St. Louis to the western limits of the State of Missouri.

Railroad Convention in Iowa.

A State railroad Convention was held in Iowa city on the 15th inst. of which Ex-Governor Lucas was President. Fifteen counties were represented, and the deliberations of the convention appear to have been marked with entire harmony and good feeling. A memorial to Congress was adopted, asking for a grant of lands, on the same terms precisely as that made to the State of Illinois at the last session, to aid in the construction of a railroad from Dubuque to Keokuk, and another from Davenport, opposite Rock Island city, to Council Bluffs on the Missouri river. Hon. James Grant, Gen. V. P. Van Antwerp, Hannibal Emerson, Esq., George S. Hampton, Esq. and Barlow Granger, Esq., were appointed delegates to Washington to urge upon Congress by every honorable means, compliance with the expressed wishes of the convention.

Massachusetts.

Saugus Branch Railroad.—A satisfactory arrangement has been made with this company, says the Salem Gazette, by means of which it is expected that the Eastern railroad companies will be enabled to enter into the heart of the city of Boston, before the expiration of many months, and entirely to discontinue the ferry at East Boston. The following officers were elected, at the adjourned meeting of the Saugus branch railroad company:—Directors—Isaiah Breed, Samuel Hooper, Albert Thorndike, Gardiner G. Hubbard, George Hood, George W. Raddin, Joshua Webster. At a subsequent meeting of the Directors, G. G. Hubbard was elected President, and George Hood, Treasurer.

From Cincinnati to Pittsburg in a day.

By the 15th day of December next, it is expected we shall have continuous railroad connections with Cincinnati, by way of Cleveland, and it is expected that passengers who leave Cincinnati in the morning will arrive in Pittsburg the same evening. It is proposed that passengers leave Cincinnati, as at present, at 5 o'clock a.m., and arrive at Cleveland, as at present, at 5 p.m., and leave Cleveland, as they do at present, at 5½ p.m., and arrive at Alliance at 8, and leave Alliance immediately, and arrive at Pittsburg at 11, of the same day on which they left Cincinnati.

By that time there will be a continuous railroad between Pittsburg and Philadelphia, with the exception of about 25 miles of staging. There will also be the route by West Newton to Cumberland

and the Baltimore road to Baltimore and Washington.

Virginia.

The Orange and Alexandria road, it is expected, will certainly be completed to the junction with the Mannassas Gap road, by the 23rd inst. The laying of the rails on the Mannassas Gap road will then commence, and be prosecuted with rapidity.

The Blue Ridge Tunnel.—This work, which has now been in progress for nearly two years, will, we understand, in all probability, have to be abandoned, in consequence of the hardness of the rock, which has been found to exist to such an extent as to render it a matter of much doubt whether or not the work can be prosecuted much farther without a very great additional expense; several propositions will go before the next Legislature to have the work discontinued.—*Scottsville Register.*

The Hoosick Tunnel.—We understand from a reliable source that active operations for tunneling the Hoosick Mountain, on the line of the Troy and Boston railroad, have commenced. Fifty workmen have for several days been engaged in removing the earth preparatory to setting up a steam machine that is to do the boring. The cost of the machine, or drill, is \$15,000, and its capabilities are not doubted by those who understand it. It will be in operation in about six weeks.—*Troy Whig.*

Papers read before the British Association for the advancement of Science.

"On the effect of the Telescopic Funnels of steam ships on their compasses," by Captain Johnson, R. N.—This communication was made in a letter to Col. Sabine, of which the following extract gives the substance:—"You will perceive by the deviation tables of H. M. SS. *Ajax* and *Blenheim*, that if no heed were taken of the deviation when regulating the ship's course, the most serious consequences might be apprehended. Taking as an example the case of the *Ajax*, with the funnel up, running upon an easterly course at the rate of 9 knots per hour, it will be seen that in 24 hours only, if no allowance were made for deviation, the ship would be 50 miles out of the reckoning; and with the funnel down the error would be increased to 72 miles in the same space of time, while the case of the *Blenheim* would not be very different. In the humid and misty atmosphere, which so often prevails on the coasts of the British Isles, the fact that a ship such as the *Ajax*, if steered a compass course, but without allowing for deviation, for mid-channel between Ushant and the Lizard, would, instead thereof, be running for the dangers about Ushant with the funnel up, and with it down be so far out of the proper course as to be advancing towards the rocks south of Douarnenez Bay, is, I conceive a proper example to show the importance of attending to the effects produced on the compass, and the two conditions of the funnels of steamships. But besides the practical question, I wish you to bring under notice the following results which I obtained with reference to the effect of hollow iron cylinders upon the compass, when placed inside each other, the object being to ascertain whether the whole difference of deviation under the two conditions of these telescopic funnels was due to the difference of their elevation and depression only, or whether a portion of the said differences was attributable to the induced magnetism of the separate parts of the funnel, when lowered, acting upon each other. As it would have required more time than could be afforded to hoist the parts of those huge funnels in and out of the ship while the requisite succession of observations were made, I procured three hollow iron cylinders of smaller dimensions, their several diameters being such as to admit of one cylinder being placed inside of another, and leaving a space of about one-eighth of an inch between their surfaces. Having placed a standard compass on one of the pedestals in the observatory, and ascertained the magnetic meridian for the moment by the collimator, the largest or external iron cylinder (No. 1) was brought in, and placed to the eastward of the compass, the principal mass of the cylinder being below the level of the needle and card, and its upper end being 2½ inches above that level. By this

means a deflexion or deviation of 10° 10' was produced, the north end of the needle being drawn that amount to the eastward of the correct magnetic north. Cylinder No. 2 was next placed inside of No. 1, when the deviation was increased to 12° 15'. Cylinder No. 3 was then placed inside of No. 2, and the deviation was again increased to 14° 15', the north end of the needle being drawn to the eastward in each case. Hansteen's Magnetic Intensity instrument was then placed with the centre of its needle (as nearly as I could adjust it) in a similar position to that which the course of the compass had occupied, and the following results were obtained:

	Time of 100 vibrations starting from an arc of 18°.
Previous to the cylinders being brought into the observatory.....	6' 57"
No. 1. cylinder in place.....	6' 51"
No 2 cylinder in place inside of No. 1....	6' 47"
No. 3 cylinder in place inside of No. 2....	6' 45"

The intensity instrument being removed, a dipping needle was then employed, and the following are the results of the observations:

	Mean of Readings.
	Dip.
Previous to the cylinders being brought into the observatory.....	68° 37'
No. 1 cylinder placed to the south of the instrument.....	70° 10'
No. 2 cylinder in place inside of No. 1....	70° 27'
No. 3 cylinder in place inside of No. 2....	70° 37'

The conclusion to be deduced from all these observations appears to be, that to the deduced magnetism of the surfaces of each cylinder acting upon each other is due a portion of the deviation: and reasoning by analogy, a similar deduction is applicable to the telescopic funnels of steam-ships.—*London Artizan.*

IRON BRIDGE ACROSS THE APPOMATTOX.

On Monday the iron bridge on the Danville railroad across the Appomattox river was fully tested. The President, and Messrs. Gifford and Harvie, directors, and a large number of gentlemen were present. A weight of more than a ton to the foot, was put upon the bridge, and the engine crossed at the rate of 25 miles an hour without making a pressure of more than one-quarter of an inch. The Chief Engineer declared that it could sustain a pressure of 600 tons, three times heavier than the test applied. The result of the trial gave entire satisfaction. The work is done faithfully and the structure is not only entirely sufficient as to strength, but promises to endure the effects of use and time uncommonly well.—*Richmond Dispatch of the 15th ult.*

The above bridge was built by the New York Iron Bridge Company, under the direction of Mr. M. M. White, whose office is at 39 Wall Street. We learn that a premium was awarded to this bridge at the World's Fair at London.

Illinois.

Chicago and Galena Railroad.—This road is now opened to Marengo, 64 miles from Chicago. It is the intention of the company to push on to Bellvidere, in the course of two weeks from this time, and by the first of January to complete it to Cherry Valley, six miles east of the town of Rockford. From Cherry Valley to Rockford, they will encounter some heavy grading, which will delay the onward progress for several months.

Pittsburg and Steubenville Railroad.

We learn from the Pittsburg Journal, that the examination of the engineers on the line of the Pittsburg and Steubenville railroad, has proved the easy practicability of the road by three different routes, and that it only remains to decide by comparison upon their respective merits. In a month's time the engineers will be ready to report, and it is intended to prosecute some of the work this winter, and to put the whole line under contract, in March.

Great Western Railroad of Canada.

We are able to state, (says the Quebec Gazette) from undoubted authority that Mr. Atcheson, the agent of the Great Western line of railway, has succeeded in raising in the English market all the money required to complete the road, and that more might have been had, if it had been necessary. It is understood that the very strong support given to the scheme in Manchester had the effect of bringing it in favor in the London market.

Illinois.

Rock Island and Chicago Railroad.—We learn from the Joliet Signal that the work on that section of the Rock Island and Chicago railroad, taken by Hon. J. A. Matteson, is progressing rapidly. Mr. M. has two hundred men and sixty teams now employed, and expects to increase the number of laborers to one thousand by the middle of November.

Michigan.

Central Railroad.—This company have just received at Michigan city six large "Eagle Locomotives, from the factory at Manchester, N. H. They have driving wheels over six feet in diameter, and are intended for running between Chicago and Detroit, which, it is intended, shall be done in nine hours. The distance is over 280 miles.

Cleveland and Pittsburg Railroad.

We learn from the Cleveland Herald, that this road is rapidly approaching completion. On and after Monday next, the regular trains will run from Cleveland to Hanover, a distance of 75 miles. The road will be completed to Wellsville by the first of January next, and a new steamboat will be finished to run from that point to Pittsburg, in connection with the express trains.

Cincinnati, Hamilton and Dayton Railroad.

The extensive depot of the Cincinnati, Hamilton and Dayton railway, extending from Sixth to Fifth street, is fast approaching completion. A friend of ours, who has recently traveled through Europe and Great Britain, speaking of this building remarked that it was the largest and most perfectly planned depot he had ever seen, and he believed larger than any other in the world.

South Carolina.

Spartanburg and Union Railroad.—The above company have surveyed a route for their road, commencing on the east bank of Broad river, at the Alston station, 19½ miles from Columbia, crossing the river Alston at Henderson Island, and then pursuing the general direction towards Spartanburg, via Union. A portion of three distinct routes was surveyed; the first is 67½ miles long, and is estimated to cost \$669,105. The second 67 miles long, cost \$685,268. The third is 68 1-5 miles long, and will cost \$639,340. The routes are favorable as far as grades and curves are concerned, and of very easy construction.

The meeting of the directors of the road took place at Glen's Springs, on the 25th ult. The President of the company was instructed to communicate with the Columbia and Greenville railroad, for the purpose of ascertaining upon what terms the said Spartanburg and Union railroad could connect with said Columbia and Greenville railroad at Alston depot. And also with the President of the Charlotte and Columbia railroad, to ascertain upon what terms the Spartanburg and Union railroad could connect with said road, together with what facilities would be granted by each of said companies to the Spartanburg and Union railroad in the transportation of railroad

on, cars, etc. The directors voted to have a general meeting of the stockholders, at Union Court House for the purpose of locating the road. The following are the officers of the company:—

Hon. Gabriel Cannon, President; J. H. Dogan, J. S. Sims, J. T. Kirby, T. B. Jeter, Jas. M. Gahberry, S. N. Evans, J. Winsmith and Thomas M. Lyles, Jr., Directors.

American Railroad Journal.

Saturday, November 8, 1851.

Trautwine, on Excavations and Embankments.

By John C. Trautwine, C. E., Philadelphia.

We had supposed that the modes in common use for calculating cubic contents on public works, admitted of no further simplification. They are long and tedious, owing to the great number of calculations that have to be made, and the necessity of repeating them in order to test their accuracy. Still we believe it has been generally conceded that the evil was a necessary one, and that (as in geometry) there was no royal road by which to arrive at the same conclusions. This supposition was strengthened by the fact that the subject has repeatedly engaged the attention of the most eminent professional men both at home and abroad. It appears to us however, on perusing Mr. Trautwine's work, that he has succeeded in the most satisfactory manner in devising a plan entirely new and original, of great simplicity, and admitting of a degree of rapidity altogether unapproachable by any other method; while, at the same time, it possesses all the accuracy that is attainable or desirable in practice.

All cases of inclined, or side-hill, cuttings or embankments in which the ground-slope is uniform, for the width occupied by the cut or fill, are solved by his method with almost the same rapidity as those on level ground, by means of the small engraved diagrams given in the book itself, aided by the accompanying tables of level cuttings.

Those of very irregular cross-section are deduced with but little more expenditure of time by the aid of "Trautwine's cross-section diagram," and a parallel ruler.

This diagram is a beautiful copper plate engraving, prepared and sold separately by Mr. Joseph Huffy, of Philadelphia. Its use will no doubt soon become as general among our engineers as that of the well known profile paper. Those who do not see fit to purchase the engraved diagram, can prepare it for themselves, according to the directions given in the book.

So far as we are enabled to judge from a rapid examination of Mr. Trautwine's book, it appears to us to possess more practical interest to the profession generally than any treatise on the subject that we have ever seen; indeed we feel almost inclined to add, than any professional work that has been presented to them for some time.

In trial lines particularly, where time is important, the rapidity of the method, and the fact that in the field it requires nothing more than to obtain the transverse ground slopes, will render it invaluable.

We may possibly overrate its merits, and therefore shall be pleased if some of our civil engineers will furnish us with their opinions respecting it, based upon its use in actual practice.

The book is for sale by Wm. Hamilton, Actuary of the Franklin Institute, Philadelphia. Price, \$1.

The Compound Rail.

We learn that the Great Western railroad of Canada has determined to purchase Winslow's compound rail, and that an order has already gone to England for this purpose. One great object in the construction of the above road is to open a through route in connection with Central N. York and the Michigan Central roads, from Albany to Chicago. The length of the Great Western is 228 miles. The route is remarkably direct, and free from objectionable grades, and with the compound rail, it is believed that at least one-third quicker time will be made by the use of the above pattern over the common form, to say nothing of the greater safety in its use, and the vast saving in the road bed and machinery. The Hudson River and the Utica and Schenectady roads, on the northern route, have already made a successful trial of this rail, and we confidently expect to see it laid down upon the whole route as fast as the old rail shall come up.

We believe that the compound rail would answer admirably upon the river bottoms of the west, that are liable to be overflowed. It would not only make an entirely safe superstructure, but would effectually confine the wooden superstructure in its place.

Iron Manufacture in Ohio.

The Ironton Register states that while in most parts of the country the iron interest has been exceedingly depressed for a number of years past, the furnaces and rolling mills in the vicinity of Ironton have been doing a profitable business, and are now paying their way, though not making much money, owing to over production. There are now in the iron region of Ohio and Kentucky, of which Ironton is the centre, 36 furnaces. A large number of the proprietors of these establishments recently held a consultation, and resolved to reduce the make of iron at their respective furnaces 40 per cent, the agreement not to go into effect till assented to by the proprietors of at least 30 furnaces.

The Register draws a flattering picture of the future prospects of Ironton. No part of the United States possesses greater facilities for the manufacture of iron than those portions of Ohio and Kentucky bordering the river. The supplies of ore, and mineral and charcoal are inexhaustible. The metal made commands from 3 to 5 dollars more than the Pennsylvania iron, and can be forwarded at much less cost to the markets down the river.

We are glad to find, amid the general distress, one bright spot. But success here is owing rather to the remarkable facilities for cheap manufacture, than the price obtained.

Steubenville and Indiana Railroad.

The whole line of this road from Steubenville to Newark, 116 miles, has been placed under contract, to be completed in two years from January next. The contracts are made with responsible parties, and embrace the construction and equipment of the whole line.

This road makes the fifth line of railroads now in progress running through the State from east to west, viz: the Lake Shore, Ohio and Pennsylvania, Steubenville and Indiana, Ohio Central, and Cincinnati and Marietta.

By the Steubenville route, the distance from Pittsburg to Columbus will be as follows:

Pittsburg to Steubenville..... 42 miles.
Steubenville to Newark..... 116 "
Newark to Columbus..... 33 "

191 miles.

Indiana Northern Railroad.

We invite attention to the advertisement of this company in another column of the sale of their bonds for the completion of their road. The Northern Indiana, is the extension of the Michigan Southern railroad, from Toledo to Chicago; and, occupying the shortest line of any work either in operation or in progress, between the southern shores of Lakes Erie and Michigan, it must become one of our most important lines. The importance of its connections can hardly be exceeded, while the country traversed is one of the most fertile sections in the United States. It is capable of furnishing a very large business to a railroad. The road is under most efficient management, and is to be completed early next season.

Memphis and Charleston Railroad.

The agent of the Memphis and Charleston railroad, now in London, writes that he had purchased eight thousand five hundred tons of railroad iron for this road, best quality T rail, fifty-eight pounds to the yard—costing, delivered at New Orleans, \$38 34 per ton. This will be sufficient to iron the road from Memphis to Lagrange, fifty miles, and from Tusculumbia to Decatur, forty-three miles.—The first shipment will be made by the middle of October, and will reach New Orleans probably early in December. The whole to be delivered in five equal monthly shipments, ending first April next.

Stock and Money Market.

The improvement which we noted in our last number continues. Money can now be had at a fair rate on well known securities. Stocks continue to improve. The Erie in particular has shown a most marked advance, selling for at least 17 per cent more than its lowest point a month or two since. The general belief is that money will be very easy again in a short time. The business season is drawing to a close, the receipts of gold continue to exceed expectation, and should the shipments be moderate, money must become abundant again.

Notwithstanding the comparative ease in the market, and the prevailing opinion favorable to its continuing so, there is but very little sale for railroad securities. Some time must elapse before they will sell readily. There is not much distrust of the securities of new works, but money has not yet become sufficiently abundant to create any demand for them. We would advise our friends to keep out of the market as long as possible; for the less offered, the sooner it will receive its tone.

The receipts of our roads show a most marked increase over last year. This is a very favorable circumstance, and tends to maintain confidence in railroad investments.

Erie Railroad.—The receipts of the Erie railroad for October, have exceeded even the large amount predicted, and must give the most unbounded satisfaction to those who have always retained their confidence in the profitability of this great work. The figures are as annexed:

From passengers and mail.....\$178,292 82
From freight..... 178,260 39

Total..... 356,553 21
Same month 1850..... 160,579 91

Increase.....\$195,973 30

The equality of the passenger and freight earnings is truly remarkable—the difference being only \$32.

The Evening Journal gives the annexed statement of the quantity of flour, wheat, corn and barley, left at tide water during the 4th week in October in the years 1850 and 1851, as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1850....	227,455	383,150	70,795	179,989
1851....	184,837	172,972	234,676	209,496

Dec....42,318 210,178 Inc. 163,971 de.29,507

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 31st Oct., inclusive, during the years 1850 and 1851, is as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1850....	2,248,862	2,240,644	3,099,737	1,329,197
1851....	2,731,124	2,427,278	7,089,439	1,033,090

Inc.... 482,262 186,634 3,989,702 dec.296,107

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 31st Oct., inclusive, during the years 1849 and 1851, is as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1849....	2,344,032	1,806,038	4,725,668	961,938
1851....	2,731,124	2,427,278	7,089,439	1,033,090

Increase. 387,092 567,240 2,363,771 71,152

By reducing the wheat to flour, the quantity of the latter left at tide water this year, compared with the corresponding period of last year, shows an increase of 519,589 bbls. of flour.

United States Mint.—The following is a statement of the operations of the mint at Philadelphia for the month of October:—

	GOLD.	Pieces	Amount.
Double Eagles.....	205,511		\$4,110,220 00
Eagles.....	33,060		330,600 00
Half Eagles.....	44,096		220,480 00
Quarter Eagles.....	114,408		286,020 00
Gold Dollars.....	283,699		283,699 00

Total.....689,774 \$6,231,019 00

	SILVER.	Pieces.	Amount.
Half Dollars.....	36,000		\$18,000 00
Dimes.....	137,000		13,700 00
Half Dimes.....	40,000		2,000 00
Three Cent Pieces.....	500,200		15,006 00

Total.....1,393,974 \$5,279 725 00

CENTS.....665,000 \$6,650 00

Total.....2,058,974 \$5,286,375 00

Gold bullion deposited for coinage from 1st to 31st October, 1851, inclusive:

From California.....	\$4,670,000
Other sources.....	75,000

Total.....\$4,745,000

Silver bullion deposited in same time.... \$21,500

Immigration.—The total arrivals of foreign immigrants at New York from the 1st of January, 1851, to the present date, have been as follows:—

January.....	14,709	June.....	34,402
February.....	8,179	July.....	27,613
March.....	16,055	August.....	50,251
April.....	27,779	September.....	33,586
May.....	33,858	October.....	21,397

Philadelphia and Columbia Railroad.—The collections at the office of this company, in Philadelphia, for the month of October, and for the year, have been as follows:

Amount as per last report.....	\$315,857 66
Ditto, month ending October 31, 1851.	42,285 47

Whole amount since Nov. 30, 1851... 358,243 13

Amount same time last year..... 317,894 61

Increase.....\$40,348 52

Reading Railroad.—The condition of the road is as follows:—

Net earnings to 1st October.....	\$819,891 34
Estimate for October and November..	200,000 00

\$1,019,891 34

Interest on debt.....\$613,266 00

Sinking fund..... 100,000 00

713,266 00

Dividend Fund.....\$306,625 34

Dividend on Preferred

Stock.....\$112,050 00

" on Common stock

4 per cent..... 166,393 28

State tax on dividend .. 13,920 00

292,363 28

Surplus.....\$14,262 06

Ohio and Pennsylvania Railroad.—This road was opened on the 30th July last to New Brighton, 28 miles. The earnings of August, September, and October have been.....\$19,127 40

Deduct expenses, 40 per cent..... 7,650 95

Net receipts for three months..... 11,476 44

Being at the rate of 8½ per cent per annum on the cost of that part of the road in use. The number of passengers carried was 34,700. This road will be extended to Enon valley, 14 miles beyond Brighton, on the 17th inst.

Railway Share & Stock List;

CORRECTED WEEKLY FOR THE
AMERICAN RAILROAD JOURNAL.

NEW YORK NOVEMBER 8, 1851.

GOVERNMENT AND STATE SECURITIES.

U. S. 5's, 1853.....	101½
U. S. 6's, 1856.....	106½
U. S. 6's, 1862.....	110
U. S. 6's, 1862—coupon.....	114½
U. S. 6's, 1867.....	115½
U. S. 6's, 1868.....	116
U. S. 6's, 1868—coupon.....	122½
Land Warrants.....	140a145
Arkansas 6's.....	52a53
Alabama 5's.....	91a92
Indiana 5's.....	83
Illinois 6's, 1870.....	65a68
Kentucky 6's, 1871.....	104a106
Massachusetts sterling 5's.....	105a106
Massachusetts 5's, 1859.....	100½
Maine 6's, 1855.....	103
Maryland 6's.....	102½
Michigan.....	—
Mississippi.....	—
New York 6's, 1855.....	103½
Ohio 6's, 1860.....	109
Pennsylvania 5's.....	91

RAILROAD BONDS.

Atlantic and St. Lawrence, 6 per cent.....	85
Baltimore and Ohio, 1867.....	94½
Boston and Providence 6's, 1855.....	101
Boston and Worcester 6's, 1855, convertible..	107½
Bost., Concord and Mont. 6's, 1860, mortgage.	87½
Cheshire 6's, 1860.....	91½
Connecticut River 6's, convertible.....	89
Erie 7's, 1859.....	100
Erie 7's, 1868.....	105½
Erie income 7's.....	94
Hudson River 7's, 1853.....	101½
Michigan Central, convertible, 8's, 1856.....	104½
New York and New Haven.....	100½
Norwich and Worcester, mortgage, 1860..	80a85
Old Colony, 1854.....	97½
Ogdensburg 7's, 1859.....	91
Portsmouth and Concord.....	80a85
Passumpsic 6's, 1859.....	94½
Rutland 7's, 1863.....	91
Reading mortgage, 1860.....	78
" " 1870.....	70
Sullivan, mortgage 6's, 1855.....	75
Vermont Central 6's, 1852.....	90
" " 6's, 1856.....	85
Vermont and Massachusetts 6's, 1855.....	86

RAILROAD STOCKS.

[CORRECTED FOR WEDNESDAY OF EACH WEEK.]

	Oct. 29.	Nov. 5.
Albany and Schenectady.....	89½	93
Atlantic and St. Lawrence.....	60a65	—
Androscoggin and Kennebec.....	30a35	—
Boston and Maine.....	104	103½
Boston and Lowell.....	108	109
Boston and Worcester.....	102	102
Boston and Providence.....	89½	86
Bost., Concord and Montreal.....	36	—
Baltimore and Ohio.....	67½	—
Baltimore and Susquehanna.....	34	—
Cheshire.....	47	47
Cleveland and Columbus.....	—	—
Columbus and Xenia.....	—	—
Camden and Amboy.....	—	—
Connecticut River.....	60	—
Delaware and Hudson (canal).....	109	108½
Eastern.....	95½	95½
Erie.....	84	86½
Fall River.....	94½	94
Fitchburgh.....	109½	110½
Georgia.....	—	—
Georgia Central.....	—	—
Harlem.....	68	68½
Hartford and New Haven.....	123	—
Housatonic (preferred).....	—	—
Hudson River.....	73	74½
Kennebec and Portland.....	50a55	—
Little Miami.....	—	—
Long Island.....	15	14½
Mad River.....	—	—
Madison and Indianapolis.....	90	93
Michigan Central.....	105	107½
Montgomery and West Point.....	—	—
Michigan Southern.....	—	—
Manchester and Lawrence.....	70	—
Morris (canal).....	14½	15½
New York and New Haven.....	109	109½
New Jersey.....	—	—
Northern.....	67	68
Nashua and Lowell.....	107½	—
New Bedford and Taunton.....	108	—
Norwich and Worcester.....	57	48
Norfolk County.....	9	12
Ogdensburg.....	33½	32½
Old Colony.....	66	65
Passumpsic.....	70½	72
Pennsylvania.....	—	—
Pittsfield and North Adams.....	95	—
Philadelphia, Wilm'gton & Balt.....	27½	28
Petersburg.....	—	—
Richmond and Fredericksburg.....	—	—
Richmond and Petersburg.....	—	—
Reading.....	56	54½
Rochester and Syracuse.....	105½	107½
Rutland.....	45	43½
Stonington.....	52	44
South Carolina.....	—	—
Syracuse and Utica.....	123½	—
Sullivan.....	15a20	—
Taunton Branch.....	108	110
Troy and Greenbush.....	90	—
Tonawanda.....	—	—
Utica and Schenectady.....	127½	127½
Vermont and Canada.....	97	99½
Vermont Central.....	27	27½
Vermont and Massachusetts.....	26	27½
Virginia Central.....	—	—
Western.....	103½	103½
Wilmington and Raleigh.....	—	26
York and Cumberland (Pa.).....	19½	—

Northern Indiana Railroad against the Michigan Central Railroad.

A motion was made before the Supreme Court this week to discharge the order for a stay of proceedings granted by Smith J. in this case, mainly on the ground that the appeal from the decision of the Circuit Judge granting the injunction, was a nullity. Smith and Jernegan argued the motion on the one side, and Crawford and Marshall on the other. The Court determined not to hear the main question until the commencement of the November term; so that the question as to the effect of this appeal yet remains undecided.—*Indiana State Journal.*

a statement of the weight and power required to run a small carriage, to carry four or six persons, upon roads of different kinds. Weight of the carriage six hundred pounds; machinery and water, about four hundred; load six hundred; total sixteen hundred. On a gravel road the pull, 147 lbs. per ton, will be 112 lbs. upon a level; to ascend a hill rising one in twelve, such as often occurs 133 pounds additional pull, making a pull of 245 pounds, which the engines must be capable of exerting. Suppose that the boiler is large enough to take the carriage up such a hill at three miles per hour, it will run at the following rates upon a level, upon different roads: On gravel, cutting off at half stroke, 9½ miles; on a Macadamized road, 17 miles; on planks, 27 miles,—the consumption of fuel per hour being constant. Hence it appears, that the same force of steam, or fuel, besides overcoming the friction and other resistances of the machinery, will work sixty per cent. more effectively on planks than it will on Macadamized roads, and nearly three times as effectively as on gravel roads, so far as increase of speed is considered.

If, instead of increasing the speed, we increase the load, we may draw upon the Macadamized road, upon a level, an additional carriage weighing with its load twenty-one hundred pounds, and carrying nine passengers. Upon a plank-road, we may draw six carriages weighing with their loads sixteen hundred each, and carrying altogether forty passengers. Thus, as to the cost of the motive power to do the same work, it is more than three times greater on the gravel than on the Macadamized road, and eleven times greater than on the plank road; and on the Macadamized road it is three and a third times greater than on planks. These considerations show that it is not unreasonable to expect a profit upon plank-roads, even though it were certain that none could be made upon Macadamized roads.

As to what may be done on common gravel roads, and others of a quality, it is only claimed that carriages may be run over them at a slow rate, with a large consumption of fuel. This has actually been done in England. So, if it be required that a carriage should deviate from the good road, for the sake of going to a place on a bad one, it can do so.

In the foregoing estimates we have proceeded upon the supposition that the grades should correspond to the quality of the roads. This is true to a certain extent, the plank-roads being graded with great care; and on the prairies there are some which scarcely depart from a level; but in practice the loads would be lighter, and the speed greater, than we have assumed in the latter view: a compromise between the greatest speed and the greatest load, suited to the exigencies of business, would be made in each case.

We have also supposed that the cut off would be at half-stroke. This is in accordance with the views of several eminent engineers, who are extremely fond of simplicity, even in the light and subsidiary parts of machinery; and if the work were upon level grades, with resistances varying but slightly, there might be no sufficient reason to pay the first cost, and perhaps the cost of repairing, of a complex apparatus for varying the cut-off. But as the total resistance, including the back-pressure in the cylinders, the friction, etc., will be ordinarily not more than a fifth of what the engines must be able to overcome, in order to get over hills on bad roads, we think that, upon mature consideration, the variable cut-off will be regarded as indispensable, where speed is required. The following comparison will show the advantage of it:—

The power necessary to run on a level, on gravel, is 52 of what is required to ascend a hill as we have described. By reference to tables of expansion we find that, the pressure remaining constant, we may cut off at a fifth, and have sufficient power to overcome the resistance. Hence we may run fifteen miles per hour, on a level, with a boiler that will go up hill* only at three miles, when working at full stroke; and we have before stated that when cutting off at one-half, we can run but nine and three-quarters. On a Macadamized road

the power required is only 3 of what is required to ascend a gravel hill. By reference to tables we find that cutting off at one-eighth will give 399 of the force of a full cylinder. Hence we may run twenty-four miles per hour, and yet diminish the pressure considerably. But when cutting off at half we can run only seventeen miles, at the same cost. On planks the resistance is less than a fifth; and cutting off at a tenth will give nearly a third as much power as the full stroke; hence we may run, if required, nearly fifty miles per hour, on a smooth plank-road, with the fuel required to run twenty-seven miles in the same time when working at half-stroke. Or, if such speed be not required, we may check the fire, which will allow the heat to be more effectually abstracted from the smoke; and in either way fuel may be saved.

All the advantage of working expansively the English carriages neglected, which Mr. Fisher thinks is one cause of their failure. According to Mr. Fisher's statement, working at "full stroke will produce on a level, on gravel, 5½ miles per hour; on a Macadamized road, 10 miles; and on planks, 16 miles: in a tabular form, speed in miles per hour,

	At full stroke.	Half stroke.	Cut off varied.
On a gravel hill....	3		
" " level....	5.7	9.75	15
Macadamized road..	10	17	24
Plank road.....	16	27	49

This shows that to attain the moderate speed of fifteen miles per hour, at which he usually ran, he must have had one half more heating surface and water and fuel than are required; but he ran up hill at ten or twelve miles, consequently his heating surface must have been more than three times what was needed, and, of course, a proportionate part of the load displaced—in other words, the profit diminished."

The following is a description of the engine and carriage:

The boiler, engines and pipes are all outside; the pipes being on the right hand side for convenience. The cylinders are inclosed in casings of bright metal. The motion is given first to a slender crank shaft, whose cranks serve to keep the ends of the connecting rods in circular paths; and from the connecting rods it is transmitted by coupling rods to the main cranks upon the axle of the driving wheels. The axle is attached to the fixed bearings of the small crank shaft, by two rods, parallel to those that couple the crank pins. The joints between the connecting rods and coupling rods are so formed that their friction is only equal to that of the joints between the connecting rods and piston rods; and all the joints of the connections allow of lateral and twisting motion. The uses of this combination of rods are, to prevent a rocking and shaking motion, and to allow of free play to the axle. Mr. Fisher claims the combination as his invention:—a part of it, however, the small crank shaft, has been patented in England; but he has evidence of priority of invention. The carriage is suspended by spiral springs from the main axle, and by the springs which are jointed to the spindle in which the fore axle is held, by a joint that admits of a limited motion in the plane of the spindle. To the top of the spindle a lever is fixed, which passes through a slot into the carriage, by means of which the carriage is steered by a person upon the middle seat, the end of which passes thro' the side, and serves as a step. The back seat is on the same level. The front seat, which is to be used only for light persons, is formed by the boards to which the engines are bolted. In carriages of this size, which are intended for hackney coaches, the front of the covering will be at the back part of these cross boards; and the steersman will sit upon this seat outside. This way of attaching the engines is believed to be new, also the attachment of the steering wheels, and they are claimed as the patentable property of the inventor. The bottom of the carriage is intended to run about six inches from the ground: the driving wheels are five feet high; the steering wheels three and a half feet, the

distance between them about sixteen inches; and the whole length of the carriage is twelve and a half feet. The engines are reversed by means of a valve.

Mr. Fisher's improvements have been submitted to a committee of the American Institute, composed of James Renwick, Henry R. Dunham, and H. Meigs, and also to a committee of the Mechanics Institute of this city, composed of C. W. Copeland, J. Stone, and James Bogardus, all of whom enjoy a high reputation as scientific and practical men, and who speak in the highest terms of the general design of the carriage and of the improvements effected in the machinery, particularly in reference to the cut-off which they say "is a very ingenious contrivance, so arranged to cut off the steam at any part of the stroke."

We are glad to see attention turned to the subject of introducing steam carriages upon plank-roads, and see no reason why the experiment should not prove entirely successful.

Kentucky.

Maysville and Lexington Railroad: County Subscriptions.—A case has just been decided in the Mason county circuit court, Kentucky, touching the validity of subscriptions voted by towns and counties to railroad companies. The above county voted to subscribe \$100,000 to the Maysville and Covington railroad. The right to make the subscription was resisted by a portion of the inhabitants, who filed a petition for an injunction against the subscription on the part of the county court. The judge, before whom the case was tried, decided that counties were competent, in their corporate capacity, to subscribe to the stock of railroads, upon the same principle that they could take any ordinary steps for the promotion of their own good: such as building a court house, or any ordinary road; that the legislation of Kentucky was full of precedents sustaining this right.

We are glad to find this matter settled in Kentucky, and we hope to see it disposed of in every State where county subscriptions are allowed. The contests to which such subscriptions have given rise, have tended to throw a certain degree of discredit on such securities, which has operated against their favorable negotiation. We have no doubt that in every State these subscriptions will be sustained. They have now become so common, and such vast quantities have been disposed of, and their proceeds applied to our public works, that the argument, "*ad inconvientem*," will, and should have a strong influence upon the construction of law. Notwithstanding this, many of our best lawyers question the right of counties to connect themselves with such enterprises as railroads, which are purely commercial in their character. Such objects, say they, do not come within the scope of town or county organisation, which, they contend, is purely conservative in its character, and does not contemplate that such bodies shall engage in commerce, in manufacturing, nor in the building of railroads; especially where such roads are beyond their limits. If the question could be now tried independent of all consequences, the right perhaps, might be successfully resisted. But the right to make such subscriptions has so long been acquiesced in, and has become so universal, they must and will everywhere be sustained.

Louisville and Cincinnati Railroad.—We understand that some of our capitalists have determined upon the construction of this work. It is proposed to commence it at Eminence on the Frankfort road. Surveys, we learn, are about to be commenced upon the route and application will be made to the legis-

* By *hill* is to be understood a rise of 1 in 12, or 440 feet per. mile.

lature for a charter. The enterprise is a very important one, and we trust that the sanguine hopes of its friends may be fully realised by the completion of the work at the earliest possible moment.

Harrodsburg Branch Railroad.—A survey of the route of this road has been completed. Two lines were run, one from Harrodsburg to the Louisville and Frankfort railroad, at Bagdad, and the other from Harrodsburg to Frankfort; the first line being 43, and the latter 32 miles long. The first named route is a very favorable one, with no grade exceeding 50 feet to the mile. The grades on the latter will reach 80 feet to the mile, with much heavy work. The estimated cost of the Bagdad route is \$708,262, or \$16,510 to the mile; on the Frankfort route, \$844,672, or \$26,232 to the mile.

We give the following from the report, in reference to the business prospects of the road:

The business of this branch, when completed, will be very heavy. It will be the most convenient channel of trade and travel for 30,000 people, one half of whom occupy lands not interior to any in Kentucky, and the other half occupy a district so remote from, and so inaccessible to, any commercial point, that its agricultural and mineral resources are valueless, without the intervention of railroad transportation.

The promised advantages in the construction of this branch are far greater than ordinary. The route tapping the Louisville and Frankfort railroad at Bagdad, is perhaps the cheapest and best adapted for a road of light grades and open curves, of any route of its length in north Kentucky. Its permanency would be unsurpassed. There would not be a wooden bridge on the line, nor one of stone over 30 feet span.

The business of the road is guaranteed against diversion to other points by the geographical position of the country, and its locality in reference to Louisville. Although the country into which the road is intended to penetrate would derive the greatest benefit, still other parties have a deep interest. It will afford more freight, and perhaps half as many passengers as the Louisville and Frankfort road will obtain from all other sources, and it will permanently secure to Louisville an additional trade, equal to that which she would independently receive on the present line of road.

Covington and Maysville Railroad.—The long controversy which has been pending between these roads, in reference to a common track from Paris to Lexington, has at last been amicably adjusted. This portion of the line is to be common to both roads, Paris being their point of convergence.

Maysville and Big Sandy Railroad.—The line of it is now being surveyed under the direction of C. B. Childs, Esq.

Distances from New York to Chicago, via Erie, and the Albany and Buffalo Roads.

New York to Albany.....	144 miles.
Albany to Niagara Falls.....	326 "
Niagara Falls to Detroit.....	228 "
Detroit to Chicago.....	282 "
	980 "
New York to Dunkirk.....	469 "
Dunkirk to Erie.....	46 "
Erie and Ohio State-line.....	26 "
State-line to Cleveland.....	71 1/2 "
Cleveland to Toledo, via Sandusky.....	110 1/2 "
Toledo to Chicago.....	243 "
	966 "

The distance on the northern route will soon be reduced to 300 miles between Albany and Niagara Falls, and the Erie route will also be eventually abridged by carrying the Erie road direct to Erie from Little Valley, and avoiding the long current by way of Dunkirk. The whole northern route can be said to have much advantage in length of line. Both of them, we have no doubt, will have as much business as they can accommodate.

Coal Trade for 1851.

The Philadelphia Ledger says that the anthracite coal trade continues active, and prices firm.—The tonnage for the year will be very large, and from present indications, will leave no surplus at the opening of the next season's business. The Schuylkill Navigation company has done the least of any of the three lines centering at Philadelphia, having brought down rather less than half a million tons. Its works have capacity, however, for a much larger business, and the future may show the necessity for doubling the present season's tonnage. The Lehigh Navigation company has already brought to market about 900,000 tons, and by the end of the present month will reach, and may probably exceed the million tons calculated on at the beginning of the season. This work has done a steady, and indeed a large business—nearly, or quite, we understand, up to its present capacity. If a larger tonnage is contemplated, the number of boats will have to be increased, and the Delaware division widened. With a continuance of the existing demand for Pennsylvania's great staple, the State should see that her works interposed no obstacle to the freest and fullest trade. The Reading railroad has done a very heavy business for the season, up to Thursday, being nearly a million and a half tons; making by the three lines, nearly three millions tons of anthracite coal brought to market. Their aggregate annual business will reach three and a quarter, and it may be three and a half millions of tons. This is an immense business, and estimating each ton of coal to be worth three dollars, gives us the very large aggregate of ten millions of dollars.

Baltimore and Ohio Railroad.

The following is a list of the Directors of this road for the present year, viz:—

John Hopkins	Edward Patterson
John I. Donaldson,	James H. Carter,
Samuel W. Smith,	Fielding Lucas, Jr.
Columbus O'Donnell,	James Swan,
William M'Kim,	Charles M. Keyser,
Andrew Gregg,	Nathan Tyson.
Thomas Swann, President.	

Indiana.

Central Railroad.—The grading of the entire line of this road is now under contract, and it is expected the road will be in operation to the Ohio State line in the spring of 1853.

Missouri.

Hannibal and St. Joseph's Railroad.—The work of construction has been commenced upon this road at Hannibal. Subscriptions to the amount of \$1,000,000 having been obtained, making available the State loan for an equal sum. The length of this road cannot be far from two hundred miles. It connects the Mississippi and Missouri Rivers at the above named towns. It traverses the finest portion of the State, and as sufficient means are now provided for its vigorous prosecution, we expect to see it finished in advance of the southern line from St. Louis.

Ohio.

Akron Branch Railroad.—The work on the north end of the Akron branch is progressing finely. A large force is employed and the contractors are inspired by a laudable purpose to fulfil their contracts. The work on this end, owing to various causes, has not been pushed as was desired by the directors and citizens generally; but it is the purpose of the former to spare no pains to have the connection completed to this point next spring.—Col. Perkins is indefatigable in his labors as president of the company, and he is heartily backed by his associates and the efficient corps of engineers.

Some of the iron has already arrived in the country and is on its way here.—*Akron Beacon.*

Green Mountain Tunnel.

It is stated that the directors of the Troy and Greenfield railroad have contracted for the machine by which the labor of tunnelling the Hoosic mountains is to be performed, and that the forfeitures are pledged on the part of the company and the owners. The latter bind themselves to excavate twelve feet per day.

Lackawanna and Western Railroad.

This road, says the Binghamton Republican, extending 58 miles from the Lackawanna coal beds, at Scranton, Pa., to Great Bend, on the Erie railroad, was opened on Monday last. The completion of this spur to the great thoroughfares, presents a new era in the experience of Western N. York. Coal will now, in all probability, supercede wood, as the ordinary article of fuel, throughout the whole of that valuable market. The supply for the present season, some 45,000 tons, has been ready for shipment for a month past, and is now probably on its way to consignees. The Oswego Times says, the coal is fully equal in quality, if not superior to Lehigh. A coal train of 25 cars, loaded with five tons each, with superior anthracite coal, from Scranton, made its first trip to Ithaca on Saturday last, arriving about 3 o'clock. It is from this point (Ithaca) that the railroad is projected to run to Sodus Bay, on the lake, affording an important shipping outlet from the coal mines.

To Contractors.

OFFICE OF THE E. AND ILL. R. R. Co., }
Evansville, Oct. 23d, 1851.

SEALED PROPOSALS will be received at this office from the 13th to the 23d day of December next, for the grubbing, grading and bridging of that portion of the Evansville and Illinois railroad, lying between Princeton and Vincennes, a distance of 24 miles.

This work includes two bridges; one across White River, about 600 feet, the other across Patoka, about 200 feet.

Contractors will state what proportion of the Stock of the Company will be taken in payment.

Plans, profiles and specifications, will be exhibited, and all requisite information given at the Office of the company in Evansville, on and after the 13th day of December next. By order of the Board of Directors.

SAM'L HALL,
President.

Railroad Iron.

THE undersigned offer for sale 1000 tons Railroad Iron, (about 56 lbs. to the yard,) now at Brooklyn.

CHOUTEAU, MERLE & SANFORD,
Oct. 1, 1851. 51 New st.

M. B. Hewson, Civil Engineer,
(Open to a New Engagement,)
Memphis, Tenn.

RAILROAD SPRINGS.

Fuller's India-rubber Springs.
THESE are now made in our own Factory, of the best materials. Each spring is guaranteed to perform the required work. Purchasers guaranteed against adverse claims.

Car Builders will save great expense by calling at the office of the Company.

23 Courtlandt St., New York.

To Railroad Companies.

THE undersigned has discovered and patented an imperishable, cheap, and sufficiently elastic substance, to be introduced between the sill and rail, so that the stone sill can be used in place of the wooden sill: entirely overcoming that rigidity where the rail is laid directly on stone. Address

J. B. GRAY, Philadelphia.

July 10, 1851.

4m

To Stone Masons.

THE NEW ALBANY AND SALEM RAILROAD Company have about 10,000 c. yards of Abutment Masonry to let at private contract, to be completed by the 1st of July, 1852.

To contractors who can produce testimonials of character for ability as STONE MASONS, fair, remunerating prices will be given.

Early applicants, by securing the work now offered, will gain advantages over competitors for the erection of an additional 15,000 yards, to be let out early next spring, in bridging the streams between Bedford and Michigan City, via Bloomington, Gosport, Crawfordsville and Lafayette, (the most productive and healthy region in Indiana,) by the knowledge they will have acquired of the resources of the country.

Application may be made in person, or by letter addressed to the undersigned, at New Albany, Indiana. S. B. WILSON, Engineer.

Engineer's Office, New Albany, }
Sept. 29th, 1851.

Engine Waste.

CLEAN WASTE for Locomotive and Steamboat Engines, in lots as wanted; also, superior Steam Packing. Orders, with explicit directions for forwarding, should be addressed to

J. MORTIMER HALL,
36 South st., New York.

November 1. 3m

Notice to Contractors.

Atlantic and St. Lawrence Railroad.

THE Sixth and last Division of the Atlantic and St. Lawrence railroad will be placed under contract on the 10th day of November next, and proposals will be received until that date by the subscribers, at Sargeant's Tavern in the town of Northumberland, N. H.

Plans and profiles will be in readiness for examination at the Engineer's Office in Northumberland, on and after the 1st of November.

This Division extends from the Connecticut River in the town of Stratford, N. H., to the boundary line of Canada, a distance of about forty miles.

No Spirituous Liquors will be allowed on the work, and bids of contractors who have heretofore failed to pay their laborers, on this, or any other work, will not be considered.

Cash payments will be made monthly, reserving ten per cent. until the final completion of the contract.

JOHN M. WOOD & CO.

October 14th, 1851.

To Contractors.

OFFICE WILMINGTON & MANCHESTER R. R. Co., }
Marion C. H., S. C., October 18, 1851.

SEALED PROPOSALS will be received until the 15th of December next, for the Piers of a Bridge across the Great Pee Dee River. The job comprises four piers, one a very heavy pier for a draw, and the sinking of cast iron hollow piles by "Dr. Pott's Pneumatic Process," for forming foundations. The plans and specifications of the piers will be exhibited by the Secretary of the Company at Marion Court House, and by the Resident Engineer, L. J. Fleming, Esq., at Wilmington, North Carolina.

WALTER GWYNN,

Chief Engineer Wilm. and Man. R.R.

November 1. Richmond, Va.

Best Cast Steel Axles & Tires,
(A NEW ARTICLE.)

For Railroad Carriages and Locomotives.

THE quality of this Steel is sufficiently attested in the announcement that it has carried off the first prizes awarded at the World's competition of 1851, in London. The axles are in general use on the Continent, and are now offered in competition with any other that can be produced; and to be tested in any way that may be desired by the Engineers of the United States, either by impact or by torsion. This Steel is manufactured by Fried Krupp, Esq., of Essen, in Renish Prussia, represented in the United States by

THOS. PROSSER & SON,
28 Platt st., New York.

November 1.

Railroad Iron.

THE undersigned are prepared to enter into contracts now at specific prices, to deliver Railroad Iron during the coming Winter and Spring, free on board at the shipping ports in Wales, or at ports in the United States.

CHOUTEAU, MERLE & SANFORD.
Sept. 30, 1851. No. 51 New st.

Notice to Bridge Builders.

PROPOSALS will be received at the Engineer's Office at Charlottesville, Va., on the 14th of November, for the construction of a bridge over Mechum's river, on the Virginia Central Railroad. The length of the Bridge will be 350 feet, in three spans. Height of Bridge above the river 70 feet. Bids will be received on Howe's plan and Town's lattice. The work to be finished by the first of July, 1852, but the timber to be procured at once. Plans and specifications will be ready to be exhibited on the 28th inst.

T. COLDEN RUGGLES,

Civil Engineer Va. Central R. R.

Charlottesville, Oct. 11, 1851.

N. B.—Good timber may be procured in the vicinity of the line of the road, which will be in operation to a point 3 miles from the bridge.

**SIX HUNDRED THOUSAND DOLLARS
NORTHERN INDIANA RAILROAD 7 PER
CENT MORTGAGE BONDS.**

The Northern Indiana railroad company offer for sale \$600,000 of their 7 per cent. mortgage bonds with interest coupons annexed.

They are in sums of \$1,000 each, payable August the 1st, 1861, with interest at 7 per cent. semi-annually on the 1st of February and 1st of August, payable at the Mechanics' Bank in this city, where the principal is also payable, and are secured by a mortgage to Shepherd Knapp, Esq., of New York, in trust for the bondholders.

They are issued under acts of the Legislature of Indiana, authorising their issue and the mortgage as above, to secure the same. The amount of bonds to be thus issued under the mortgage, is limited to One Million of dollars, \$400,000 of which have been disposed of, and \$600,000 are now offered for sale.

The mortgage covers the whole road of the company in Indiana, and is the first and only lien thereon.

This embraces the entire line from its connection at the State line of Michigan with the Michigan Southern road (of which it is an extension) through Elkhart, Mishawaka, South Bend, and Laporte, to the boundary of Illinois, about 100 miles: a line to and from Michigan city of about 25 miles, connecting with the same, and a line of 10 miles from Elkhart to Goshen—making in all about 135 miles of road.

The company hold also, by lease and contract, a line from the western boundary of Indiana to Chicago, of about 13 miles.

By an existing contract between this company and the Michigan Southern company, a continuous line of railroads is formed from the head of Lake Erie, at Monroe and Toledo, in a very direct course through Southern Michigan and Northern Indiana to Chicago—a distance from Monroe of 246 miles, and from Toledo of 243—all to be under one superintendence and management, and for all practical purposes forming one joint interest.

At Chicago this line of road connects with the "Chicago and Rock Island road," to be extended to the Mississippi river, at Rock Island, 180 miles long, and which is under contract.

Also, with the Chicago and Galena railroad, about 84 miles of which is now about completed and in use, the entire line of which, it is expected will be completed to the Mississippi river in all next year.

Also, with the Illinois Central railroad, to run from Cairo, at the mouth of the Ohio river, to Chicago.

At Toledo it unites with the great chain of railroads along the shore of Lake Erie to Cleveland, Dunkirk and Buffalo. This whole south shore line will probably be completed in the course of the next season, and parts of it will be opened for use the present year.

The whole line of roads of this company is under contract; the grading and bridging on 60 miles are completed, and the rails laid on 50 miles of it. The iron has been purchased for the whole road from the boundary of Michigan to Chicago, and most of it is delivered on the line ready for use. The road is finished 30 miles to South Bend, to which point the cars are now running from Monroe and Toledo, and the work of laying down the rails is in active progress upon the residue of the line. The main line from the East to Laporte (some 56 miles) will be opened next month, and the whole road from Lake Erie to Chicago, in March next, when the journey from Lake Erie to Chicago, may easily be made in 8 hours.

The means for the construction and equipment of the Northern Indiana road are provided by stock and bonds.

Nearly one million of dollars are subscribed to the stock, about \$850,000 of which is taken in New York and the Eastern States, the remainder along the line of the road. An average of 50 per cent. has been paid on these subscriptions, and the residue is being regularly paid at the call of the company.

For providing the remaining means required to complete the work, the company have issued their Mortgage Bonds to the amount of one million of dollars in all, as above stated, proceeds of most of which are wanted to pay for iron rails, machinery, &c.

The mortgage empowers the trustee, in case of failure to pay either interest or principal, to take possession of the road, with its equipments, and receive its earnings, or to sell the same, on due notice, and apply the proceeds in payment.

That this road will prove one of great usefulness and profit will at once be seen by reference to a map of its line and connections, being an essential link in the great chain of railways from the city of New York to the Mississippi river along the southern extremity of the two great Lakes, traversing as it does one of the most productive agricultural regions in the United States, while its cost per mile will be less than one-half the usual cost of railroads of the same class in the Eastern States. As a local road alone, giving an outlet to the productive region it traverses, it is confidently believed that it will pay a large profit upon its cost without reference to its connections.

The proof of this is found in the earnings of the Michigan Southern railroad for the past five months which, until its connections are formed is to be regarded as a local road, and is of about equal length with the Northern Indiana road, and traverses a country not more productive, viz:—

For May, 1851, \$24,427	For August, 1851, 24,196
For June, do. . . . 22,511	For September, do. 35,217
For July, do. . . . 20,603	

Total \$126,954
It will be thus seen that the security offered is of the highest character.

Sealed proposals will be received for any amount not less than \$1,000, until the 12th day of November next, at 3 o'clock P. M.

Proposals may be addressed to WINSLOW, LANIER & CO., No. 52 Wall-street, or E. C. LITCHFIELD, Treasurer of the Company, No. 47 Beaver-st., indorsed "Proposals for Northern Indiana Railroad Bonds."

Twenty-five per cent. of the purchase money will be required to be paid immediately upon acceptance of the bids; and the remainder in equal payments on the 25th of November and the 10th of December next. Any purchaser will be at liberty to pay in full at once, and interest upon the bonds will run from date of payment.

Three hundred thousand dollars (one-half the amount now offered) will be disposed of absolutely and without reserve, to the highest bidders.

The company reserve the right to withdraw the remainder, if the offers are not satisfactory.

All necessary information in relation to the bonds together with maps, may be obtained by the calling on Winslow Lanier & Co., or E. C. Litchfield, at either of which places copies of the bonds and mortgage may be had.

GEORGE BLISS JOHN STRYKER.
EDWIN C. LITCHFIELD, CALVIN BURR,
HUGH WHITE, Committee of the Directory,
New York, Oct. 20, 1851.

Bridges & Brother, DEALERS IN RAILROAD AND CAR FINDINGS, 61 Courtlandt street, New York.

Having established a general Depot for the sale of articles used in the construction of Railroads, Locomotive Engines and Railroad Cars, we would invite your attention to our establishment. We have already in store a good assortment of CAR FINDINGS and other articles used in the trade, and feel justified in saying, that should you desire anything in our line, we can supply on terms perfectly satisfactory, and in the event of your desiring to order, you may feel assured that your terms will be as good as though you were here to make your own purchases.

Among our goods may be found Railroad Car Wheels, Axles, Jaws and Boxes, Nuts and Washers, Bolts, Brass Seat Hooks and Rivets, Window and Blind Springs, Litters and Catchers, Door Locks, Knobs and Butts, Ventilators and Rings, Car Lamps, Coach and Wood Screws, Jack and Bed Screws and Babbitt's Metal; also Plushes, Damask, Enameled Head Linings, Cotton Duck for Top Covering in width sufficient without seams, Curled Hair and all other articles appertaining to cars.

Also a new and valuable CAR DOOR LOCK, well adapted to the Sliding Door. This is decidedly the best yet introduced.

LOCOMOTIVE ENGINE LANTERNS, the best article made in the country. Whistles, Gauge and Oil Cocks, Hemp Packing, American, Russian and Italian. We are also agents for Lightner's Patent Journal Box for Car Axles, that invaluable invention, for the economical use and preservation of Car Journals.

Coach VARNISH and Japan of the best quality. We would also offer our services for the purchase as well as for the sale of goods on commission.

Both members of our firm have had the experience of many years in the manufacture of Railroad Cars, and our Senior was a member of the well known house of DAVENPORT & BRIDGES, Car Manufacturers, Cambridgeport, Mass. With our knowledge of matters pertaining to Railroads, we feel quite confident in giving satisfaction to both buyer and seller, and hope that through assiduity and attention to any business entrusted to our care we shall merit a continuance of confidence and patronage.

BRIDGES & BROTHER.

July 22, 1851.

Lightner's Patent Axle Boxes.

The Undersigned are Agents for, and offer for sale, *Lightner's Patent Axle Boxes*, for Railroad Cars and Tenders, which have, by thorough experience, been demonstrated to be one of the most valuable improvements ever introduced in Locomotion. The saving effected in oil alone, will in a few months pay the first cost of these boxes, independent of other advantages. They are now in use upon the following, among other roads, viz:

Boston and Worcester, Boston and Providence, Boston and Fitchburg, Nashua and Lowell, Providence and Worcester, Northern, N.H., Cheshire, Manchester and Lawrence, Concord, N.H., Concord and Claremont, Ogdensburg, (Northern, N.Y.) Stonington, New London Willimantic and Palmer, New Jersey Central, New Hampshire Central, Worcester and Nashua, Fitchburg and Worcester, Connecticut and Passumpsic, Lowell and Lawrence, Salem and Lowell, Wilton Branch, Newburyport.

Below will be found the certificates of a number of gentlemen, whose opinions will be good authority in every part of the country.

Office Boston and Prov. R. R.,
Boston, Dec. 28, 1849.

MR. JOHN LIGHTNER,

Sir,—It affords me pleasure to say, that after two years' trial of your boxes, I am fully and entirely satisfied of their superiority over any other pattern we have used. This superiority consists in economy of oil and freedom from "heating." I have tried every pattern of box in use, of any note, and do not hesitate to say, that you have devised one which in every respect combines greater advantages than any other within my knowledge; these advantages are so manifest, that I am fitting up all

our cars with your boxes, as fast as practicable.

Annexed, is a statement of an experiment with your boxes, the result of which may be of use to your interests.

Ten passenger cars, running 72 wheels, fitted up with Lightner's boxes used 41½ pints of Patent Oil, at 50 cts. per gallon, ran 43,099 miles, equal to 5-18 pints per wheel for 43,099 miles. Speed, 30 to 40 miles per hour.

Very respectfully yours,

W. RAYMOND LEE, Supt.

I have examined the above statement of Mr. Lee, and fully concur with him in his opinion of the superiority of Lightner's box.

GEORGE S. GRIGGS,
Supt. Machine Shop B. & P. R. R.

Boston, July 26, 1849.

This is to certify that J. Lightner's axle boxes for railroad cars and locomotive tenders, have been in use on the Boston and Worcester railroad one year, and I unhesitatingly pronounce it, in my opinion, the best and most economical one in use, requiring less oil, of easy application, not susceptible of derangement, as in most kinds in use. When requiring repairs or renewal, the same may be done in one-fourth of the time usually occupied for that purpose. The box requires oiling not oftener than once a month—is kept quite free from dust, and consequently wears much longer than those generally in use.

D. N. PICKERING,
Supt. Motive Power, B. & W. R. R.

Office of Boston Locomotive Works,
December 12th, 1849.

The Boston Locomotive Company have been using J. Lightner's patent axle boxes under the tenders of their engines for several months, and find them more highly spoken of by the railroad companies that have used them in regard to economy in the use of oil, their durability and their ease of adjustment, than any other boxes which they have used. We therefore do not hesitate to recommend them to all railroad companies.

DANIEL F. CHILD,
Treas. Boston Locomotive Works.

Taunton Locomotive Works,
Taunton, July 7, 1849.

MR. H. F. ALEXANDER,

Dear Sir,—Your favor of yesterday came to hand in which you ask what success we have met with, in using Mr. Lightner's patent box for cars, engines, &c.

We have put it in use on the Boston and Providence railroad, New Bedford and Taunton Branch railroad, Central railroad, N. J., Norfolk County, Rutland and Burlington, and as yet we have not had one complaint from them; and from what we have used of it, and witnessed, we do not hesitate to say that it is superior to anything in use for that purpose. It is simple in its construction, and easy of access, and the reservoir is held close to the shaft, and the oil and journal is perfectly secure from dust; they will run from four to six weeks without replenishing the oil. The brass in the box is changed very much easier than by any other plan that we have seen.

Very resp. yours,
W. W. FAIRBANKS, Agent.

Office Providence & Worcester R. R. Co.,
Providence, Dec. 17th, 1850.

H. F. ALEXANDER, Esq.,

Sir,—The "Lightner patent boxes" for cars and locomotives have been in use under a portion of the passenger cars and engines of this company for upwards of two years, and have given very great satisfaction.

Though combining many excellent qualities, their great superiority consists in the economy of oil.

The result of experiments upon this road shows the consumption of oil by the use of this box, to be not more than one sixth part the quantity consumed by the use of the common box.

With the common box, eight passenger cars, 64 wheels, running 90 miles per day, consumed in 12 months 520 gallons of oil, being an average of 8½ gallon per wheel per annum.

With the Lightner box the same cars running the same number of miles per day, during the same space of time consumed 73½ gallons of oil, being an average of 1½ gallon per wheel per annum.

So manifest are its advantages over any other box used by this company, it is intended to place it under all our cars as soon as practicable.

Besides the saving of oil, as they afford complete security from dust, we think them more durable than any other box in use.

Another advantage resulting from the use of this box is, cars run more easier than with the common box. The saving in fuel which it would effect, would of itself, we think be a sufficient inducement to use this box in preference to any other known to us.

Very respectfully,

ISAAC H. SOUTHWICK, Supt.
JOHN B. WINSLOW,
Supt. Machine Shop, P. & W. R. R.

Cambridgeport, April 5th, 1851.

H. F. ALEXANDER, Esq.

Sir,—This may certify that I have been engaged in the manufacture of railway cars since 1834, and have built for the different railroad companies cars of all descriptions to the amount of three millions of dollars, and have used on the above cars all kinds of journal boxes, and find that none give better satisfaction than the "Lightner patent box," both on account of the saving of oil and the arrangement for taking out and re-placing the composition by means of the sliding key, and other conveniences which no other box possesses.

Yours respectfully,
CHARLES DAVENPORT.

Worcester, March 17th, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—This is to certify that I have been for some years past engaged in building cars, and that I have tried most, if not all of the patent boxes, and have found Lightner's patent superior to all others as far as the saving of oil is concerned, also the ease with which they are fitted and exchanged in case they get out of order.

For the last three years, I have put them under all of the cars I have built, and in every instance they have given the most entire satisfaction.

Yours truly,
OSGOOD BRADLEY.

Office Union Works, So. Boston,
May 23d, 1851.

This certifies that I have applied Mr. J. Lightner's patent axle boxes to my locomotives and tenders for the past two years. I consider them superior to all others,—economical in their use, and possessing many important advantages not found in any other boxes.

SETH WILMARTH.

Office 15, R. R. Exchange, Boston,
June 1, 1851.

This is to certify, that we have known the success of Lightner's patent journal boxes upon various roads in New England the past three years, and have been led to examine their peculiar construction.—We are well satisfied of their merits, and have adopted them upon our small gravel cars, and take pleasure, as we ever have done, in recommending their use upon all roads where we are employed in the construction.

GILMORE & CARPENTER,
Contractors.

Amoskeag Manufacturing Co. Machine Shop,
Manchester, May 31, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—We are using the Lightner box on all the engines and tenders we build, and we are satisfied that it is the best box in use, and recommend the same to all those who purchase engines at our works.

Yours respectfully,
O. W. BAYLEY, Agt.

This is to certify that the Fitchburg railroad company having become satisfied of the superiority of J. Lightner's patent Axle Boxes for Railway Cars and Locomotive Tenders adopted the same

and are bringing them into general use upon their road.

One year's experience with the above improvement, has fully convinced me that there has never been anything offered to the public for that purpose which possess such intrinsic value; in fact, this is an improvement which seems to overcome all the difficulties found in all the various kinds now in use. It possesses very many advantages over all others: Some of which are [first] the first cost is much less than that of most boxes in use. [Secondly] 75 per cent is saved in oil; one gill applied to each Journal once a month, or one quart to an eight wheel car, is all these boxes require per month [Thirdly] no dust can gain access to the Journal, which is constantly lubricated with clean oil; hence the saving in repairs of Journals and composition bearings, is a matter of importance. [Fourthly,] its construction is truly simple—not complicated, having nothing liable to become loose by constant and severe service. [Fifthly] for convenience there is nothing which approaches this improvement.—The composition bearings may be removed from the Journals of an eight wheel car, by one man, and returned, or duplicates, in twenty minutes, while under the car: the same would require two men, at least half a day with other boxes in use.—The trucks and wheels using these boxes, are free from oil and dirt, usually seen upon all railroad cars, at great expense to the corporation.

NATH'L JACKSON.

Supt. Car Building and Repairs, F.R.R. Co.

Boston, March 9, 1849.

I hereby certify, that I have examined a box for Car Journals, invented by Mr. Lightner of Roxbury, Mass, and I have thought so well of it that I have adopted it on our railroad, I have known of its success on other roads.

S. M. FELTON,

Supt. F. R. R.

Office of the Central R. R., N. J., }
Elizabethtown, May 1849. }

H. F. ALEXANDER, Esq.,

Dear Sir:—Your favor, [wishing to be informed how we liked Lightner's patent axle boxes for R.R. Journals,] has been duly received; in answer we would say, we have used the boxes on Locomotive tenders one year, more or less, and on our cars some six months. I consider them the best boxes in every respect, I have ever used, or even seen used on any other roads—for safety, durability and the economy pertaining to all the details connected with the boxes and Journals of R. R. Car wheels; and we shall adopt them upon this road.

Yours Respectfully,

JOHN O. STEARNS.

Supt. Central Railroad Co., N. J.

Manchester, N. H., Nov. }
1st, 1850. }

H. F. Alexander, Sir,

I have used "Lightner's Boxes" under all the Cars of the Manchester and Lawrence railroad, and feel no hesitation in saying that I think them to be the best boxes now in use.

Yours, &c.,

THEODORE ATKINSON, Agent.

Cheshire R. R. Office, Keene, }
March 5th, 1851. }

Mr. H. F. Alexander,

Sir,—Lightner's Patent Boxes have been used on the Cheshire R. R. about a year, and have given the highest degree of satisfaction.

All the Passenger Cars now in use, and a considerable number of Merchandize Cars are furnished with them, and they will take the place of the Common Boxes on all the cars as fast as circumstances will permit.

Very Resp't.

L. TILTON,

Supt. Cheshire R. R.

Boston and Worcester Railroad, }
Boston, April 1st, 1851. }

H. F. Alexander, Esq.,

Dear Sir,—Lightner's Patent oil saving box for railroad cars, has been adopted by this corporation; we are taking out the common and substituting the

Lightner's at the rate of fifty boxes per month; it will soon take the place of all others, as it is decidedly preferable to any heretofore used by this corporation.

G. TWITCHELL, Supt.

Statement of amount of oil used on 32 8-wheel freight cars, on the Boston and Providence Railroad (with Lightner's Boxes) from March 10, 1849, to February 27, 1851, and upon 12 8-wheeled passenger cars from September 8, 1849, to February 27, 1851.

FREIGHT CARS.							
Amount Oil.	No. months.	Amount Oil.	No. months.	Amount Oil.	No. months.	Amount Oil.	No. months.
1.—21 pts.	10	17.—23½ pts.	14				
2.—19 "	6	18.—23½ "	11				
3.—25 "	13	19.—36 "	21				
4.—18 "	7	20.—22 "	10				
5.—22 "	12	21.—38½ "	24				
6.—24 "	13	22.—29 "	23				
7.—20 "	11	23.—35½ "	23				
8.—21 "	11	24.—37½ "	23				
9.—23½ "	10	25.—51 "	23				
10.—21 "	9	26.—31½ "	24				
11.—20 "	9	27.—28½ "	23				
12.—21½ "	11	28.—36 "	23				
13.—19 "	8	29.—50½ "	24				
14.—25½ "	17	30.—50 "	23				
15.—20½ "	10	31.—41 "	23				
16.—31 "	18	32.—39½ "	23				

Total, 925½ pts. 510

PASSENGER CARS.

1.—19½ pts.	18	7.—30 pts.	18
2.—25½ "	18	8.—25½ "	18
3.—33½ "	16	9.—29 "	18
4.—19 "	15	10.—46½ "	17
5.—15 "	15	11.—9 "	9
6.—22 "	18	12.—65½ "	17

Total, 340 pts. 197

Averaging 1 4-5 pints of oil for freight, and 1 7-10 for passenger cars per month only!

All orders and enquiries promptly attended to.

BRIDGES & BROTHER,

No. 64 Courtlandt st., New York.

July 25, 1851.

Trautwine on R. R. Curves.

By JOHN C. TRAUTWINE, Civil Engineer, Philadelphia, Pa.

JUST published, accompanied by a Table of Natural Sines and Tangents to single minutes, by means of which all the necessary calculations may be performed in the field.

This little volume is intended as a field-book for assistants; and will be found extremely useful, as it contains full instructions, (with wood cuts) for laying out, and adjusting curves; with Tables of Angles, Ordinates, etc., for Curves varying from 13 miles, down to 146 feet Radius.

A portable Table of Natural Sines and Tangents to minutes, has for a long time been a desideratum among Engineers, independently of its use in laying out curves.

The volume is neatly got up in duodecimo; and handsomely bound in pocket-book form.

Sold by Wm. Hamilton, Actuary of the Franklin Institute, Philadelphia. Price \$1.

Also, "Trautwine's Method of Calculating Excavation and Embankment."

By this method, which is entirely new, (being now made known for the first time) the cubic contents are ascertained with great ease, and rapidity, by means of diagrams, and tables of level cuttings. Thin octavo; neatly half bound, \$1. For sale by Wm. Hamilton.

June 28, 1851.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff St.

CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by POWERS & WEIGHTMAN, manufacturing Chemists, Philadelphia.

Jan. 20, 1849.

To Chief Engineers, Directors of Railroads, Canals, etc.

A Civil Engineer and Surveyor, who has been professionally engaged under the British Government, East India Company, etc., is desirous of obtaining employment as an Assistant. No objection to the South or West. Address for one month to C. E. & S., American Railroad Journal office.

August 16, 1851.

To Engineers.

A NEW WORK on the Marine Boilers of the United States, prepared from authentic drawings, and illustrated by 70 engravings, among which are those of the fastest and best steamers in the country, has just been published by B. H. Bartol, Engineer, and is for sale at the store of

D. APPLETON & CO.,

Broadway

September 1, 1851.

Pneumatic process for making Foundations for Bridges, Piers, etc.

THE Attention of Engineers, Contractors, and Bridge Builders, etc., is directed to this method of forming secure foundations. Hollow Cylindrical piles from 8 inches to 10 feet in diameter may be sunk through sand, mud, clay, etc., to any required depth, and filled with concrete or masonry.

The efficacy and economy of the process has been demonstrated in the construction of numerous permanent works, at a much less cost than the use of any other method. (See evidence in Parliamentary enquiry, Railroad Journal, April 19, 1851.)

Contracts made, or licenses granted for the use of the invention in any part of the United States, by

CHARLES PONTEZ, N. Y.
34 Liberty street, N. Y.

LOWMOOR IRON.

THE LOWMOOR IRON COMPANY having appointed Wm. BAILEY LANG their sole agent in America and Canada, he is now prepared to receive and execute all orders for Railway Tire Bars, bent, welded, and blocked Railway Tires, Axles, Piston Rods, and Boiler Plates. Also, plain, angle, rivet and every other description of Lowmoor Iron.

All communications respecting the above are requested to be sent to Wm. Bailey Lang, at his Steel Warehouse, No. 9 Liberty Square, Boston, or to the Lowmoor Iron Works, Bradford, Yorkshire, England.

30th Sept., 1851.

RAILROAD SPRINGS.

Fuller's Patent India-rubber Springs.

PRICE reduced to 50 cents per pound. The owners of this Patent now manufacture the Springs in their own Factory, and guarantee that each spring shall perform its required duty.

Purchasers guaranteed against adverse claims. They may have full confidence in the working qualities of the springs.

The suits brought against Ray & Co., will soon be brought to issue, and we await the result with satisfaction, having full confidence in the pure administration of the Laws.

The long advertisements put forth by Ray & Co. about prior invention of the spring are worthless; he has not proved prior invention, and cannot sustain his patent in a Court of Law.

For the owners of Fuller's Patent,

G. M. KNEVITT,
23 Courtlandt st., New York.

October 7, 1851.

Railroad Iron.

THE undersigned, Agents for British Manufacturers, continue to sell Railroad Iron of the best quality, and of any weight or pattern required deliverable at any part of the United States or Canada.

They have now on hand, ready for delivery a New York:

2,000 tons of an approved pattern, weighing about 60 lbs. to the yard.

WM. F. WELD & CO.,
42 Central Wharf, Boston.

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Now being published in Twelve Parts, price 25 cents each, the **PRACTICAL MODEL CALCULATOR**, for the Engineer, Machinist, Manufacturer of Engine work, Naval Architect, Miner and Millwright.—By Oliver Byrne, Compiler and Editor of the Dictionary of Machines, Mechanics, Engine Work and Engineering, and Author of various Mathematical and Mechanical works—illustrated by numerous Engravings; forming, when completed, one large volume, octavo, of nearly 600 pages.

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THE Fourth Annual Exhibition of AMERICAN MANUFACTURES, by the MARYLAND INSTITUTE for the *Promotion of the Mechanic Arts*, will be opened in Baltimore on the 20th October, 1851.

The Exhibition will be held in the **SPLENDID NEW HALL** of the Institute, (fronting on Baltimore street) now being rapidly completed. Their edifice is centrally situated, chaste in its architecture, solid in its construction, and is by far the largest and most complete building in the United States, devoted to the *Mechanic Arts*. It may be added that this building is 355 feet long by 60 in breadth, with an average height of 68 feet, containing some twelve apartments, the largest of which is 255 feet by 60, and that the cost will be over \$70,000.

To this Exhibition, the Managers ask the attention of all engaged in industrial pursuits throughout the country, and cordially invite them to contribute specimens of their best productions for public inspection, and to compete for the prizes offered by the Institute. These prizes consist of **GOLD and SILVER MEDALS, DIPLOMAS**, etc., which were last year distributed as follows:—*Gold Medals*, 16; *Silver ditto*, 90; *Diplomas*, 60; besides 85 articles of Jewelry, etc., to ladies. *Fair play will be scrupulously observed towards all*, and every facility of Steam power, shafting, fixture, labor, &c., &c., will be amply provided *free of expense*. The machinery will be under a special superintendent, and a fine display of it is looked for. The last exhibition of the Institute was visited by more than 40,000 persons, and with their vastly improved accommodations and alterations, this number will be doubled at the coming display, embracing many Virginians, Pennsylvanians, and other strangers from the South and West.

Joshua Vansant, President.

Ed. Needles, } Vice Presidents.

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Samuel Sands, Rec. Sec'y.

Wm. Prescott Smith, Cor. Sec.

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(The last nine in *Italics* are the Committee on Exhibition.)

The Hall will be opened for the reception of goods on **MONDAY, 13th October**; on the next Monday, 20th, at 7 P. M., the Exhibition will be formally opened to the public, and will positively close on Wednesday, 19th November. Articles for competition must be in the Hall by **Thursday night, Oct. 16**, unless delayed in shipment after starting in ample time.

Those who intend depositing, will give the Committee or the Agent, notice as early as possible, stating the *nature of the goods*, and *probable amount of room required*, to exhibit them to advantage.

Circulars, containing a view of the new Hall and the full regulations of the Committee, with special information, if required, may be had promptly, by addressing the undersigned, or the Institute's Agent, J. S. Selby, Baltimore, *post-paid*.

ADAM DENMEAD,

Chairman Com. on Exhibition for 1851.

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Pints, " "	1 00	" " "	37 1/2
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This is the best Ink manufactured. It flows freely, is a good copying ink, and will not mould, corrode, precipitate or decay. Orders for export, or home consumption, carefully and promptly attended to by

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THEODORE LENT.

To Railroad Companies, etc.



The undersigned has at last succeeded in constructing and securing by letters patent, a **Spring Pad-lock** which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

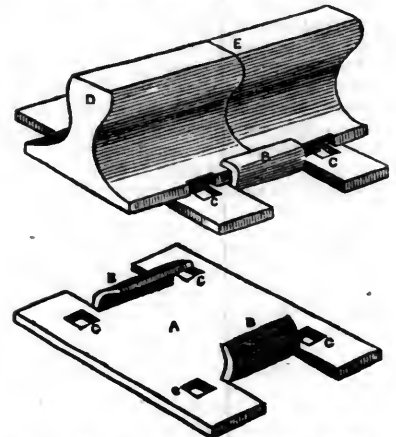
I also invite attention to an improved **PATENT SPRING LOCK**, for **SLIDING Doors** to Freight and Baggage Cars, now in use upon the Pennsylvania Central, Greenville and Columbia, S.C., Reading, Pa., and other Railroads.

Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH,
46 South 8th St. Philadelphia.

May 9, 1851.

The American Railroad Chair Manufacturing Co.



ARE prepared to make **WROUGHT IRON RAIL ROAD CHAIRS**, of various sizes, at short notice.

By use of the **WROUGHT IRON CHAIR**, the necessity of the wedge is entirely done away—the lips of the chair being set, by means of a sledge or hammer, close and firmly to the flange of the rail.

The less thickness of metal necessary in the Wrought Iron Chair gives much greater power and force to the spikes when driven—and consequently a much less liability to the spreading of the rails by reason of the spikes drawing or becoming bent.

The less weight necessary in the Wrought Iron Chair, will enable us to furnish them at a cost much below that of **CAST IRON CHAIRS**.

DESCRIPTION OF THE ABOVE CUTS.
Figure 1 is a perspective view of the rail secured in the chair, and fig. 2 is a perspective view of the chair itself. D, E, are sections of two rails placed together, and secured at the joint on the chair by the jaws B, B'. The chair is bolted down by spikes C, C'. In fig. 2, the chair is represented as made of a single block or plate A of wrought iron.

The chair is set in its proper place on the track, spiked down, and the ends of the two rails brought together within the jaws as represented in fig. 1.

For further information address,

N. C. TROWBRIDGE, Secretary,
Poughkeepsie, N. Y.

June 1, 1851.

Railroad Commission Agency.

THE Subscriber offers his services to Railroad Co's and Car Makers for the purchase of equipment and furniture of roads and depots and all articles and materials required in the construction of cars, with cash or approved credit. No effort will be spared to select the best articles at the lowest market price.

He is sole Agent for the manufacture of the **ENAMELED CAR LININGS**, now in universal use. The best Artists are employed in designing new styles, and he will make to order pieces with appropriate designs for every part of the car, in all colors, or with silver grounds and bronzed or velvet figures.

He is also Agent for Page's Car Window Sash Fasteners, which is preferred by all who have used it to any other.

CHARLES STODDER,
75 Kilby st., Boston.

June 20, 1851.

3m.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 136 NASSAU ST., NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.
SECOND QUARTO SERIES, VOL. VII., No. 46! SATURDAY, NOVEMBER 15, 1851 [WHOLE No. 813, VOL. XXIV.

PUBLISHED BY J. H. SCHULTZ & Co., 136 NASSAU ST.

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American Railroad Journal.

Saturday, November 15, 1851.

Having been applied to for some copies of the following article, published in our paper last year, which we were unable to supply, we concluded to re-publish the article, as the views there expressed have, we believe, been fully confirmed by the present state of our foreign trade:

Balance of Trade.

Influence of the Exportation of Specie on Production and National Wealth.

The idea, which was regarded as a fundamental principle by the early school of political economists, that the measure of a nation's wealth was the amt of precious metals it possessed, and that trade was favorable or unfavorable just in proportion as it increased or diminished this amount, has been long since exploded, and is now referred to only as proof of the crude notions which once prevailed upon this subject, and excites surprise that such an absurdity could so long have exerted a controlling influence over the public mind.

This, though a very absurd idea, was a very natural mistake for people to fall into. In the early discussion of any subject, we are apt to mistake phenomena for causes, and the apparent for the real. It was in this way that gold and silver came to be regarded as the only articles to which the

term *wealth* could be applied. In all times and among all people have the precious metals been objects of more universal desire than any other articles of property. As a general rule, men are always found willing to part with whatever they can spare for gold and silver, from the value which they possess in their eyes, either for ornament or use. The possessor of them was always certain of being able to supply any of his wants, and obtain any other article of property in exchange for these.

This quality of exchangeability, possessed by gold and silver to a much greater extent than any other values, naturally led people to the idea that the value of gold and silver was different in *kind* from all others. This mistake was further encouraged by the fact that all contracts were made payable in them, and that the possession of them was the end and object of trade and commerce of every kind.

Experience has long since exploded all such notions as these. Whatever can support labor and become the basis of production—whatever can administer to our wants and luxuries—is, in modern ideas, *wealth*; and the nation which is the best off in these respects, is justly regarded the richest.—Money is neither food nor clothing, and the only use of it is to obtain something which we can eat, drink or wear—something that adds to comfort; and the person who has purchased such articles, and exchanged for them his gold and silver, is just as rich after the exchange as he was before it took place.

Notwithstanding all this, we still find it to be the fact in the commercial world, that the nation which possesses most of the precious metals, wields, by virtue of them a very powerful influence, beneficial to itself, and prejudicial to the interests of all other members of the commercial confederacy.—We find in the United States, that the moment we begin to ship gold and silver to England, we feel the evil effects of it in commercial embarrassments. Money becomes scarce, just in proportion to the extent of the shipment; the value of all kinds of merchandise and property falls, and if the exportation is continued to a great extent, as in 1836–7, a commercial crisis and general insolvency is the result. The depreciation of property exceeds in value many times the amount of the specie shipped. If, on the other hand, an equal value in produce be exported, and its return received in gold and sil-

ver, the consequence would be an universal appreciation of prices, and general commercial prosperity. Now, if gold and silver, as a part of national wealth, are not distinguishable from wheat, or cotton, in any of their characteristics, as property, why should the exportation of it be attended with such different results? We will endeavor to explain the apparent anomaly.

As we stated in the outset, gold and silver are objects of universal desire, and, for this reason, enable the possessor to obtain whatever he may wish by their exchange. This characteristic which they have over all other kinds of property, naturally leads every person to desire to possess as much as possible; or, in other words, to convert into them all surplus of other kinds of property. All contracts, for the same reason, were made payable in them, and thus the value of every article of merchandise came to be measured by the amount of gold and silver it would command.

This is the leading cause which led to the adoption of the precious metals as a medium of exchange. It is based, not upon the caprice, nor upon the conventional agreements of mankind, but upon a law of our nature. Gold and silver possess other characteristics which peculiarly fit them for this purpose—such as the amount and regularity of supply, and the capacity they possess for extreme divisibility without impairing their value; but these are subordinate, and not the leading reasons for their adoption as money.

But though gold and silver are valuable in themselves, and make up a part of the aggregate of national wealth, they are, in one point of view, so much dead capital when employed as money. They are neither food for, nor are they instruments in the hands of labor. In themselves they do not aid in the office of re-production. They are useful only as agents to facilitate the exchange of articles of use or consumption; and could this exchange be effected without this agency, the amount now used as money might be withdrawn from its present office, and be made the basis of further production. This fact has led to the dispensing with as large an amount as possible from their employment as money, so that we find, that though all contracts are stipulated to be paid in gold and silver, not one in ten thousand are discharged in them. Nearly the whole machinery of commerce is carried on without their actual intervention, by the use of a credit of which they form the basis, while they are

seldom removed from the vaults where they are placed for safe keeping.

Were every contract in life necessarily paid in gold and silver, the result would be two-fold: the value of them would rise to an exorbitant degree, and business transactions would be curtailed to an equal extent. It would increase the cost of all kinds of merchandise, and diminish the ability of all to purchase. It would reduce production to a mere fraction of what we now witness, and exert a corresponding influence upon the present condition of society, for reasons which are perfectly simple and plain.

Economy of production has led to an almost infinite subdivision of labor; so that the most common articles of use pass through many hands in the process of their construction. Some, apparently the most simple, are the joint product of many hundred workmen; it being found that a minute division of labor secures a much greater amount of production, and a much more perfect article. The greater part of persons employed in manufacturing have no interest in the article upon which they may be employed; neither does their labor give it a marketable value, till it goes through the hands of the last person in the process. It is the aggregate labor of all that fits it for the market. The great body of workmen employed have no exchangeable value to offer. What they had done or added to any particular article has no marketable value detached from the article itself. They cannot directly exchange the result of their labor for what they must have for their support. They therefore must be paid in money, which they can exchange for whatever they may stand in need of.

If there were no such thing as money, and all exchange of products were effected by an "exchange of kind," this would to a very great extent put an end to division of labor, because each person would be compelled to confine himself to the production of exchangeable values: that is, to the complete production of one article. If he were a manufacturer of cloth, he would be compelled to perform every step in the process, because no one would buy the article half finished. We should thus lose all we have gained by division of labor. But the evil would by no means end here. The manufacturer, after he had fitted his article for the market, would be obliged to go in pursuit of a customer; and before the right person could be found, the maker would probably lose in time and expense, much more than the cost of production. Without any further illustration of this part of the subject, it is perfectly easy to see that without money, society could have made but little progress, and its disuse would at once reduce us to a semi-civilized state.

We have above spoken of the use of money in the ordinary affairs of life with which we are all conversant. The same views apply with an equal force to foreign as to domestic commerce.

Gold and silver when used as money, being so much dead property, it is for our interest to use only the smallest possible amount of such; and we find that a greater part of the transfers of property are effected without their actual intervention. The exchanges for the most part are effected by the use of credits. Take as a familiar illustration the case of a New England cotton manufacturer. After his fabrics leave his hands, they pass through those of perhaps ten persons before they reach the consumer. He first sends them to his agent in Boston.—He forwards them to a commission house in New York. The New York merchant sells to

some western trader, who in turn sells to another, and so they pass from hand to hand, till they reach the consumer. Now if every person connected with the transfer was obliged to pay the value of the goods to the person who preceded him in it, this fact would require the use of a capital in gold and silver ten times greater than the value of the goods. Each person would be compelled to charge not only for his own labor but a fair compensation for the use of his money. And this additional charge would be so much reduced from the profits of the manufacturer. To save this additional expense, he sells on such time as will allow the goods to reach the consumer, and the pay to come back through the same channel through which they were forwarded; and the only money used in the transaction is that paid by the last purchaser. The manufacturer is thus enabled to receive the full value of his goods, less only the cost of forwarding to the consumer; and provided only that trustworthy agents are employed, he makes a much larger profit than he could have made were every transfer effected by the use of money. Experience has proved that in the long run more is saved by giving credits than by selling for cash; and it is upon the reasons here laid down, that credits in mercantile transactions are based. The abolition of credits would to a great extent check the transfer of merchandise, and consequently stop production just in proportion to the additional amount of property that would be required to be changed from a productive to an unproductive state.

But we find that the system of credits is extended still further than in the case cited for illustration; so that the use of gold and silver is dispensed with even in the payments by the consumer, who pays in paper money, which is in itself a credit. Without here going into the history of banks, or the causes, which have built up the present system, we find that in the affairs of business the money used has no intrinsic and substantial value. It represents, it is said, *money*, but this is admitted to a certain extent to be a fiction. It is received as money from the credit attached to those who issue it; and that if they do not represent gold and silver, they are based upon substantial values—something that can be exchanged for them. This form of credit enables a community to withdraw an additional amount of the precious metal from its unproductive state as money, equal to the excess of the issue of bills over the amount of specie upon which this issue is based.

In this point of view banking credit adds directly to national wealth, as it enables us to avail ourselves for production of an equal amount of property which without such would be required for currency. Banking institutions are therefore of equal advantage to all classes, though they seem to be for the exclusive benefit of the rich as they diminish the rate of interest, facilitate the transfer of property, diminish the cost of products to the consumer, and turn a large amount of property to productive uses.

In popular ideas, bank bills are based upon specie. Though such is not absolutely the fact, yet they never would be received as money unless it was believed that they could be converted into gold and silver at an instant's notice. But as general experience proves that there is no probability that all the bill-holders will present them for redemption at the same time, it is considered a safe rule to issue bills to four or five times the amount of the specie held by the bank. So long as a bank continues in good credit and possesses convertible property

enough to eventually redeem its circulation, the bills are seldom presented for payment.—Money in the shape of bank bills is in a much more convenient form than in the precious metals, and consequently they are preferred to the latter so long as they can be used with safety.

We thus enumerated the causes that have led to the use of paper money, and built up the present banking system of the country. This system has been developed and matured by long experience, and we have a right to suppose that it is the one best adapted to the mercantile and business community, just as ships and railways are adapted to the office they are to perform. One is just as necessary as the other. Each profession is to be trusted in its calling, and the rules and regulations by which each are guided and controlled are entitled to respect from all others.

Supposing, for instance, that our banks possess a given amount of specie, say \$5,000,000, and that this amount forms the basis of a circulation of \$250,000 in bank notes, it is very easy to see, from what has gone before, why its exportation should cause a scarcity of money, even though the movement be very slight. The exportation of \$1,000,000 in gold and silver, withdraws at least five times that amount from circulation. The shipment of \$10,000,000, withdraws in the same way, \$50,000,000. Banks, having lost the principal, are obliged to call in the representative. "Money becomes scarce," as the phrase is, and, obeying the same law of supply and demand which regulates the value of all kinds of property, also rises in value, and those who are compelled to purchase it, are obliged to give in exchange an increased quantity of other property, proportioned to the rise; consequently are just so much the poorer.

Under our banking system, this is the whole history of the causes of the abundance and scarcity of paper money, and of the effect which its fluctuations exert upon the value of property, and explains the reason why any sudden acquisition, or loss, of a large quantity of the precious metals, produces so suddenly such widely different results. It also shows the importance that the amount of gold and silver set apart as the basis for our currency should be as nearly as possible a stated quantity; the amount regularly and gradually increasing to keep pace with the progress of business and trade. If this result could be obtained, we should completely avoid the violent fluctuations which are of so common occurrence, and always attended with the most disastrous consequences.

We have seen that all contracts creating indebtedness are payable in gold and silver, but that these, in fact, very seldom intervene in business transactions, between members of the same community; their place being supplied by credits, and bank paper. Gold and silver, as a general thing, is only used to liquidate the final balance found to exist between parties, and then but seldom. We employ credits in every possible case, for the simple reason of the greater economy of their use.—But what is true of trade carried on by members of the same town or State, by no means applies to that existing between different nations. Here gold and silver are used in most of the transactions which take place, and all balances must be discharged in them. In a community like that of New York, for instance, the transfer of \$1,000,000 from one side of the street to the other, produces no effect upon the currency or the money market, because in either place, it serves as the basis of a paper circulation. But if at the winding up of the business

of the year, we find ourselves indebted to a foreign country to the amount of \$1,000,000, this amount in gold and silver immediately goes abroad to pay the debt. The exportation of the same produces for a time the same effect upon business that the exportation of \$5,000,000 would cause, provided our currency were made up entirely of the precious metals.

The argument stated, places in a correct light the theory of the balance of trade, and shows the consequences of having it in our favor, or against us. If the trial sheet shows \$1,000,000 against us, we must contract our currency \$5,000,000 to square the account. The immediate effect of this contraction is the same that the loss of so much property would cause. But this is not perhaps the most injurious effect of having the balance of trade against us. The probability of such an event keeps the public mind in a constant state of feverish alarm, which may at the same time be without foundation, and produce all the evil consequences of a real indebtedness. Such a state of public mind which we have last described, are the results of almost daily observation.

From what we have said, we think that we have shown that the nation which can keep all others in its debt, and in this manner be in a position to control the gold and silver possessed by its debtor, must maintain, by virtue of this, commercial supremacy. As at present organized, no civilized community can sustain its industrial pursuits without the use of credits based upon gold and silver; and that community which can control the supply of these metals, possessed by another, holds all the material interests of the latter in its hands, and can crush them at will. And as every nation seeks to break down every branch of industry of a rival, that comes in competition with her own pursuits, we must expect all with whom we have business relations, to use their power, whenever they can obtain it, or in other words, as far as this country is concerned, whenever they can turn the balance of trade against us. We have admitted, or rather proved, that it is for the interest of a community to use as small an amount of gold and silver as money as is consistent with a sound and well regulated currency; and that all surplus, beyond this want, and what is used in the arts, may be profitably exported. If by such exportation we can keep the balance of trade in our favor, no injurious consequences will ensue, because we exchange so much *unproductive* for *productive* capital. If, on the other hand, we are compelled from overtrading to withdraw from our banks any portion of what we had set apart to form the basis of our currency, we then part with our *principal* instead of the *results* of our capital, with our *machinery* instead of its own fabrics, and deprive ourselves of the instruments necessary to production. To succeed, we must have the "balance of trade" in our favor. The early writers upon the subject by no means exaggerated the importance of this, though the grounds upon which their reasons were based were entirely erroneous.

We think that we have, in what has gone before, indicated the policy which should guide us in the regulation of the tariff, and upon which all parties, protectionists and free traders, can meet. The tariff man says, "all I want is that government should so regulate the duty as to keep us out of debt."—The free trader can ask for nothing more. In arranging a scale of duties, there can certainly be no objection to our giving such encouragement as we

may be able to the home manufacturer. Here, then is a common ground upon which all can meet. The policy we have laid down would serve as an unerring and safe guide under all emergencies. It would save us from the consequences of over trading, would afford an adequate protection to our manufacturing interests, and would allow the greatest amount of **FREE** trade consistent with our best good.

Ohio.

Steubenville and Indiana Railroad.—We gave in our paper of the 27th of September, a brief notice of this work. As the whole road has since been placed under contract, to be completed in about two years, and as the road occupies an important line, and connects itself with some of the leading roads in the west, and is soon destined to take rank among our most important enterprises, we now give a more detailed statement of its condition and prospects.

The proposed road extends from Steubenville, an important town on the Ohio, between Wheeling and Pittsburg, to Columbus. It will be connected with Pittsburg by a road now in progress, and cutting off the great bend of the Ohio, by a line of only 42 miles. At Columbus, the Steubenville and Indiana railroad will connect with all the roads centering at that point, and branching out in every direction. When built, it will form the shortest route between Pittsburg and central Ohio and Cincinnati, and its friends claim that it will form a portion of the shortest line between Philadelphia and Cincinnati. Whether this be so or not, it will occupy a very favorable position in reference to other roads, and when constructed must be in possession of a large through business.

The route of the road traverses the counties of Jefferson, Harrison, Tuscarawas, Coschocton, Muskingum, Licking and Franklin, all of which are known to rank in wealth, and in natural resources, among the first in the State. The following is a statement taken from the report of the company, and will show the amount and value of agricultural products on the line of the road:

Cattle..	107,799 head,	worth \$20 00..	\$2,155,980
Sheep..	600,449 "	" 1 50..	900,673
Hogs...	193,600 "	" 3 00..	580,800
Wheat..	5,041,212 bush.,	" 0 60..	3,024,727
Corn...	7,571,565 "	" 0 30..	2,271,469
Wool...	1,501,122 lbs.	" 0 35..	525,392

Making.....\$9,459,041

But no returns are here included of the number of horses and mules, and of the products of oats, rye, barley, hay, tobacco, potatoes, turnips, fruit, butter, cheese, culinary vegetables, poultry, etc.—Estimating these at \$2,500,000, we have, in round numbers, a total valuation of agricultural resources and products of \$12,000,000. From these data, we may also make an approximate estimate of the yearly surplus and value of the same, viz:

Wheat..	3,444,449 bush.,	worth \$0 60..	\$2,066,669
Corn...	2,000,000 "	" 0 30..	600,000
Wool...	1,501,122 lbs.,	" 0 35..	525,392
Cattle...	25,000 head,	" 40 00..	1,000,000
Hogs...	100,000 "	" 5 00..	500,000
Sheep...	50,000 "	" 1 00..	50,000
Other articles.....			1,258,000

Total in round numbers.....\$6,000,000

Reduced to freight the above enumerated products would yield.....184,255 tons.

Add \$ for articles not enumerated.... 61,415 tons.

And we have.....245,670 tons.

which is without any estimate of tonnage from coal or manufactured articles.

This result compares favorably with every other portion of the State. The report institutes the fol-

lowing comparison between the wealth and productions of the counties traversed by the Little Miami, Mad River and Lake Erie, the Columbus and Xenia, and the Cleveland and Columbus railroads, with those on the line of the Steubenville and Indiana railroad:

Comparative Statement of the population, agricultural products and valuation of an equal length of road from three important roads, and the Steubenville and Indiana road.

	Miles.	Populat'n.	Ratio.
Mad River and Lake Erie..	134	141,752	42
Columbus and Xenia.....	55	74,839	55
*Columbus and Cleveland..	135	173,788	64

Total.....	324	390,379	
Av. of these lines 149 miles long.....	149	170,526	50
Steubenville and Indiana..	149	233,474	62

	Cattle.	Sheep.	Hogs.
Mad River and Lake Erie..	82,404	291,030	134,036
Columbus and Xenia.....	48,982	111,210	55,503
*Columbus and Cleveland..	110,303	450,698	108,608

Total.....	241,689	855,938	338,147
Av. of these lines 149 miles long.....	111,147	393,628	155,505
Steubenville and Indiana..	107,799	600,449	193,600

	Wheat.	Corn.	Total tax value.
M. Riv. and L. E..	3,613,516	4,798,299	28,856,820
Colum. and Xenia..	1,120,420	4,155,472	22,395,346
*Col. and Clevel'd.	2,488,703	4,182,873	34,762,675

Total.....	7,202,639	13,136,644	86,014,841
Av. of these lines 149 miles long..	3,312,324	6,041,234	39,537,812
Steubenv. and Ind..	5,041,212	7,571,565	53,938,854

* Franklin county deducted, being included in the Columbus and Xenia line.

In addition to the agricultural resources of the country traversed, the route passes for a long distance through one of the most extensive coal fields in the State, and must receive a large income from the transportation of this mineral.

The report of the company, which is an admirably prepared document, contains a large amount of valuable statistics, adduced for the purpose of showing the probable earnings of the above work, compared with other roads in Ohio, now in operation. We hardly think it necessary to publish evidence of the probable amount of business of a western road, for the reason that all these matters are well understood by our business men and capitalists. We all know the unlimited capacity of the west for production, and when a road is built, and free from injurious competition, no one doubts that it must have an enormous business, compared even with our eastern roads.

In relation to its through business, we copy the following from the report:—

THE THROUGH TRADE.

Having indicated the sources from which the local, or way business of our road is to be derived, and shown the nature and present extent of resources in this respect, as well as something of the extent to which those resources may be expanded and developed by opening up new channels of trade, we will now, very briefly, examine its comparative merits as a means of connection between the west and seaboard. To compare advantageously with other lines, as a means of attracting a due proportion of the great internal trade of the country, which is growing so rapidly, and the future magnitude and importance of which can hardly be estimated, the road must possess equal, if no greater facilities as to the *time* and *cost* with which it can perform like service. Both time and cost depend on the comparative length, and general character of the road as to grades and curvatures; and the relative expense of working it, including the cost of the road itself. Much also depends on the nature and extent of the connections formed at

the western terminus and along the line of the road. In illustration of these several points, we present the following facts.

The distances here stated have been ascertained with as much accuracy as existing data will furnish. In most instances, they are the actual distances of located railways; in others, actual surveys of routes for roads in contemplation, and in instances where no surveys have been made, the distances by the supposed shortest route are given. For instance, no railroad between Wheeling and Marietta can be located, so as to make the distance less than by the river; simply because the road must be located along the valley of the river, and near the margin of the stream.

First—Comparative Statement of Distances from Cincinnati, and Columbus, Ohio, to New York, Philadelphia and Baltimore, by the several proposed lines of Railroad.

1st.—Cincinnati to New York. Miles. Loss. Gain		
Via Cleveland, Dunkirk and Piermont.....	883	127
" Parkersburgh, Baltimore and Philadelphia.....	782	101
" Columbus, Steubenville and Pittsburg.....	756	127
2d.—Cincinnati to Philadelphia.		
Via Marietta, Wheeling & Hempfield.....	686	27
" Parkersburgh and Baltimore.....	685	1
" Zanesville, Wheeling and Hempfield.....	674	12
" Columbus, Steubenville and Pittsburg.....	659	27
3d.—Cincinnati to Baltimore.		
Via Parkersburgh.....	587	76
" Wheeling and Baltimore and Ohio road.....	662	75
" Wheeling, Hempfield, and Harrisburgh.....	663	76
" Steubenville and Pittsburg.....	636	49
4th.—Columbus to Baltimore.		
Via Wheeling, Hempfield and Harrisburgh.....	545	27
" Wheeling and Baltimore and Ohio road.....	544	1
" Steubenville, Pittsburg and Harrisburgh.....	518	27
5th.—Columbus and Philadelphia.		
Via Zanesville, Wheeling and Hempfield.....	556	15
" Steubenville and Pittsburg.....	541	15

From these comparative distances, we may deduce the following conclusions:

1st. Philadelphia has an advantage in distance, over New York by the Erie road, for trade at Cincinnati, of 224 miles.

2d. The shortest route from New York to Cincinnati is through Philadelphia and Pittsburg.

3d. The next shortest is through Baltimore and Parkersburgh, the difference in favor of Philadelphia and Pittsburg being 26 miles.

4th. The shortest route between Philadelphia and Cincinnati is through Pittsburg, by 15 miles.

5th. Baltimore has an advantage over Philadelphia for trade at Cincinnati, of 72 miles.

6th. The shortest line from Columbus to Baltimore is through Pittsburg, by 27 miles.

It is also apparent, that the line of the Steubenville and Indiana road is the shortest and most direct, by which Philadelphia can reach Cincinnati and Columbus. And whilst Baltimore has an advantage over Philadelphia for trade concentrated at Cincinnati, Philadelphia has, through the line of our road, an advantage over Baltimore, from the sources from which all that trade is drawn from all parts of Ohio, Indiana and Illinois, being north of a line drawn from Columbus to Indianapolis, and thence to the Mississippi.

SECOND—General Character of the Road.—The highest grade on the road is 39½ feet per mile, and the shortest curve has a radius of 1910 feet. The maximum grade occurs but seldom, much the greatest portion of the road having grades ranging from 3 to 25 feet per mile.

On the Baltimore and Ohio railroad the minimum radius of curvature is 600 feet, and on the Western (Boston and Albany) and the Pennsylvania Central railroads, the minimum is 955 feet.—

Each of these roads has maximum grades more than double that of the Steubenville and Indiana railroad, and yet with these high grades and short curves they are worked with great ease and profit, accommodating a large freight and passenger traffic with a facility and regularity equalled by few other roads in the country.

With a minimum radius of curvature double and treble, and a maximum grade less than one-half that on the above roads, the Steubenville and Indiana railroad will be peculiarly well adapted for rapid and cheap transportation. For passenger trains a speed of thirty miles per hour, including stoppages, can be attained with comparative ease, and much heavier loads can be hauled over its light grades by locomotives of equal weight and power.

When the Steubenville and Indiana railroad is completed, the trip from Cincinnati to Pittsburg can be made in 10 hours, and from Pittsburg to Philadelphia in 14 hours, making the time from Cincinnati to Philadelphia 24 hours; and western products going eastward by this route no where encounter grades exceeding 53 feet per mile, and west of the Ohio river none exceeding 39½ feet per mile, exhibiting advantages which it is believed are afforded by no other line.

THIRD—Comparative cost of the road, and expense of working it.—It has been estimated by competent engineers, that each mile saved in distance is equivalent to a gain of \$50,000 in the cost of a railroad. By applying this rule of saving to the gain in distance which our road has, over any other between Philadelphia and Central Ohio, we obtain a material advantage in this particular, to start with. But in order to compare the original cost of two lines of railroad, it is essential that all particulars that go to make up the entire character of the works compared must first be determined and ascertained. Grades and curves on a railroad are distance in another form. Here it is the equated distance, distance equalized in all these particulars, that must be compared, in order to arrive at correct results. We have not the necessary facts to go into such a comparison, and will therefore only state our conviction, that no railroad can be constructed, extending from the Ohio river, above Portsmouth, to Columbus, that will be capable of maintaining any advantages, in these particulars, over our road. The first 25 miles of this, and all other roads extending from the upper Ohio river into the interior, is the most costly part of the road, and may reach, but will not exceed, \$25,000 per mile. After reaching the valleys of the Connotton, Stillwater, and Tuscarawas, the cost will be below the average cost of similar works in the interior of the State. As coal abounds on the line, fuel, one of the principal items of cost in working a railroad, will be obtained cheaper than on most other western roads.

FOURTH—Connections at the Western terminus, and along the line of the road.—Our present views and efforts are directed to the placing our road in connection with the several lines of railway formed and concentrated at Columbus. By these connections we unite, 1st, with Cincinnati, by the Columbus and Xenia and Little Miami roads. 2d. With Springfield, and thro' it with Indianapolis, Central Indiana, Illinois and St. Louis, all in a nearly direct line westward. No other railroad, whatever and however located, can connect Pittsburg and Philadelphia with these points, and this vast interior, by as short and direct a line as this.—Nature herself has formed it, and no skill in the science of engineering can substitute a better one. From Indianapolis, nine independent railroads are in process of construction, radiating from this central point in all directions to the margin of Indiana, from which common centre our line forms a direct eastern extension, diverging neither to the north nor south until after it passes Columbus, and thence nearly due east to Pittsburg.

3d. At Newark, which is 36 miles east of Columbus, we connect with the Mt. Vernon, Mansfield and Sandusky City road, now in operation, and through which we have access to the lakes.—

4th. At Dresden, which is about 20 miles east of Newark, our road is but 16 miles from Zanesville, itself one of the most important places in the interior of the State, and furnishing a large local business for a road. An extension of our road to

Zanesville will place it in connection with the Zanesville and Wilmington road, which connects with Cincinnati through a more eastern, but equally productive tier of counties than the Columbus and Xenia road. To prove the directness of this route, let a line be drawn on any good map, from Cincinnati to Zanesville, and thence through Steubenville to Pittsburg, and it will appear in a most striking light.

It is important to observe that, with the exception of the connection at Newark, all the rest form, with our line, continuous lines in the same general direction; that they are not mere intersections of roads, crossing the tracks of each other, and looking to different destinations, by routes forming strong angles with each other; on the contrary, they are but links in one great east and west chain of railways, uniting the Atlantic seaboard with the great west, through the very hearts of Ohio, Indiana and Illinois.

We have but one other fact to allude to as illustrating the comparative advantages of our road. Comparative distance is not the only element which determines the relative advantages of railroads. Large cities exert an attractive influence upon the course of travel and trade, similar to that of material bodies upon each other. They divert it from straight lines, when straight lines would not touch them. Pittsburg is such a point, in the course of trade between the east and west. Her influence in this respect must be admitted, and it would be just as wise to locate a road from Baltimore to New York, which should pass round Philadelphia, as to attempt to divert the trade between Philadelphia and the west from passing through Pittsburg. This influence results from her population, her position, her existing commercial connections and relations, and her manufacturing interests. To say nothing of the local trade secured to a road by its connection with all these interests, this population, the project of its immense manufactures in iron, glass, cottons and other articles, will not the interests of any railroad, as a through line, for the trade in question, force a connection with Pittsburg? Of the several lines of railroads above compared in respect to distance, the Steubenville and Indiana, and the Ohio and Pennsylvania are the only ones which touch Pittsburg in their course from the Atlantic cities to Cincinnati and the west; and the Steubenville and Indiana road effects this desirable object, not only at no disadvantage as to distance, which this important fact might still be sufficient to overcome, but with a positive saving in distance over any other route, except that from Baltimore to Parkersburgh, and thence to Cincinnati, but which does not reach Central Ohio, Indiana and Illinois.

Such, then, are the claims of the work entrusted to our management, to the confidence and support of its friends. We have endeavored, in all honesty of purpose, to state facts, and only facts, in illustration of its claims. It is not our purpose to draw doubtful inferences, or to state speculative estimates of the profits of an investment in this work. From the facts which we have endeavored to arrange in an intelligible shape, each one interested can draw his own conclusions. The important points which we have endeavored to establish are these, that the resources of the road, for local business, will compare advantageously with those of the most successful existing railroads in Ohio; and that its advantages, for through business, are such as to secure to it a fair proportion of the immense and rapidly growing internal trade and travel between the east and west.

It is but a few years, since the only outlet to this trade to the market of the world, was through the Mississippi and its tributaries, to New Orleans. The genius of CLINTON first gave a new, and opposite direction to this vast current of business, which greatly exceeds, in magnitude and importance, all foreign trade of the country. As soon as source of communication was opened between the waters of Lake Erie and the Hudson, the trade of the west began to move northward. The period of time since this movement began has been short; and yet in that short period, the State of Ohio has been traversed through its entire extent, from the Ohio river to Lake Erie, by four great artificial works; viz, the Ohio and Miami canals, and the Cincinnati and Sandusky city, and Cincin-

nati and Cleveland railroads. The amount of business is equal to the capacity of all of these. But one improvement has, as yet, been commenced, to traverse the State in an eastern and western direction; viz, the Ohio and Pennsylvania railroad. Its general course is north of west, looking particularly to northern Ohio, the Lakes, Indiana, Illinois and Michigan. We here present the claims and advantages of a second line, starting from the same point, and extending in a diverging line from the former, to the south west. Both of these lines will connect with the Atlantic cities, by a great saving in distance over all existing routes. We believe that the local business alone, would justify the construction of both. We see no necessary conflict in interest between them. Each has its distinct and proper use and purpose. If the trade to New York can sustain four routes, will not that to Philadelphia give profitable employment to two? And may not even a portion of the trade of New York and Baltimore be attracted by the superior advantages of the great middle route, between these and portions of the west? The west is the great centre of our country; not only its geographical, but its political centre; and the great source from which exhaustless agricultural products the basis of its wealth and of its commerce, are drawn. How many works of this kind may be constructed, radiating from this great centre to the eastern and western borders of the country, before their number will exceed the requirements of its external trade? Will not every gorge in the Allegheny mountains be occupied by such works, before their number will be too great?

For all the purposes here indicated, the powers and privileges conferred by our charter are ample. It expressly authorizes the construction of "a railroad from Steubenville to Mt. Vernon, in the county of Knox; thence by the most eligible line to the Indiana State line," and by an amendatory act passed February 24, 1848, the company is "authorized to construct a branch road from Coshocton, in Coshocton county, to Columbus, in Franklin county, by way of Newark, in Licking county." And by the same amendatory act, "the mayor and town council of the town of Steubenville, in Jefferson county, and all other incorporated towns, through, or near which, said road may be located; and the commissioners of Jefferson and all other counties, and the trustees of the several townships through which said road may be located, are each respectively authorized to subscribe to the capital stock of said railroad company, on behalf of said townships," on the same conditions, etc., as in other cases. The value of these provisions will be understood, when it is recollected that under the new constitution of Ohio, no such privilege can be conferred upon any county, city, township or town within the State. The power to do so is expressly withheld from the Legislature.

With these facts and general views of the objects and advantages of the work entrusted to us, we submit its claims to the judgement of those interested in its construction. It is not a work to be pushed through an uninhabited and uncultivated district of country, in order to reach something valuable beyond it. On the contrary, it traverses the most populous, the most productive, and wealthiest agricultural and mineral region of Ohio; it derives its means of construction mainly from the population along its track; it connects the country traversed by the shortest possible line of railroad with the markets of the east, and those markets with the products of the west; presenting to both, a direct east and west line, as a substitute for circuitous northern connections; and it unites the largest cities of the west with each other. Thoroughly convinced ourselves of the importance of the work committed to our charge; that its advantages are appreciated by those who will be benefited by it; that the wealth of the country it traverses is adequate to its construction, and its local resources alone sufficient for its profitable employment; that it will occupy a commanding position in reference to the great trade between the east and the west; that every interest requires the completion of the work at the earliest practicable period; and that our present subscriptions and future expectations justify the measure, we have advertised for proposals to be received up to the first of October next, for the grading and masonry of the entire

line between Steubenville and Newark. We therefore congratulate the stockholders and the public, that we are about to commence active operations; and assure them that nothing in our power shall be wanting, to carry it to a speedy and successful completion.

OFFICE OF THE STEUBENVILLE AND INDIANA RAILROAD COMPANY, Steubenville, Aug. 22, 1851.

Rapids Convention at Burlington, Iowa.

In our last we alluded to this convention, the report of the proceedings of which, we had not then received, they have since come to hand, and we give below the memorial to be presented to Congress, and the resolutions expressive of the sense of the convention.

The two great obstacles to the navigation of the Mississippi River are the Des Moines and Rock River Rapids. These in stages of low water, appear an almost impassable barrier to the passages of boats. It is claimed that a very small sum would remove the obstacles, and that the expense of their removal should be done by the General Government. It is hardly necessary to attempt to prove the last proposition. The Mississippi River is as prominent a feature in our geography as the Atlantic coast, and the commerce that is moved upon it, nearly if not quite equal, to the whole of our foreign trade. Certainly there can be no reason why the commerce of one should not receive the same attention and care as the other.

The convention was very numerous attended by delegates from Missouri, Illinois, Iowa, Wisconsin and Minnesota, and was addressed by some eloquent men from these States. The best feeling prevailed. A committee was appointed to prepare statistics of the trade and commerce of the river to accompany the memorial to Congress. The committee was of the following gentlemen, viz: H. W. Starr, David Rover, J. H. Tallant, J. C. Hall, L. D. Stockton, and W. F. Coolbaugh, all of Burlington.

It seemed to be a prevailing opinion in the convention that there was great danger that merchantile produce would leave the river for artificial modes of transportation, such as canals and railroads, and that the eastern cities were making rapid encroachments upon the trade of the leading towns on the Mississippi river.

MEMORIAL

To the Senate and House of Representatives of the United States, in Congress assembled:

Your Memorialists, a convention of two hundred and ninety-four delegates from the State of Wisconsin, Iowa, Illinois and Missouri, and the Territory of Minnesota, assembled at Burlington, in the State of Iowa, on the 23d and 24th days of October 1851, respectfully call the attention of your honorable body to the obstructions to the navigation of the Mississippi river, usually known as the Des Moines and the Rock River Rapids, and ask that the same be removed by the general government, so that a free and practicable channel be opened through them.

Your memorialists insist upon the seasonableness, the justice, and the perfect practicability of their request. The Mississippi being a great National Highway, this is a National work, and has been so regarded by a previous Congress, in making appropriations for the same object, which, though too small to complete the work, resulted in great benefit to the navigation of that river.

Your memorialists further refer your honorable body to the resolutions passed by this Convention and to statistics which will be embodied and furnished by a committee of this body.

Your memorialists further state, that the character of those obstructions is such as greatly to cripple the commerce of the river, during the larger portion of the time in which it is open for navigation; and that a removal of the same, while it

would conduce to the prosperity and convenience of the people dependent on the river as an outlet, would also enhance the value and facilitate the settlement of the government lands of the Northwest, situate above said Rapids, and would be economy to the government in the end, in a saving of cost of transportation of supplies and armament. Adopted in full convention, and signed by the officers of the convention, the 25th October, 1851.

RESOLUTIONS.

Resolved, As the opinion of this convention, composed of delegates from the States of Illinois, Missouri, Wisconsin and Iowa and the territory of Minnesota, that the river Mississippi is a great national highway, the control and jurisdiction of which have been reserved to Congress, and that it is the duty of the National Legislature to make such improvements in the navigation of said river as will place our commerce upon an equal footing with that of the Atlantic States of this Union.

Resolved, That the interests of nine States and one Territory imperatively demand the prompt action of Congress in making adequate appropriations for the removal of the obstructions to the navigation of the river Mississippi formed by the Des Moines and Rock River Rapids.

Resolved, That experience and testimony of the navigators of the Upper Mississippi, demonstrate the correctness of the surveys and the report made by Lt. Lee in the years 1837 and '38, and that no doubt is entertained by this convention of the practicability of the permanent improvement of the channel of the river at the Des Moines and Rock River rapids, if said plans should be carried out: but this convention at the same time that it gives this opinion, refers to the action of Congress and of the officers to whom the execution of the work may be entrusted, asking only, with all the earnestness that right and justice demand, that free and unobstructed navigation shall be guaranteed to us.

Resolved, That the Senators and Representatives in Congress, from the several States represented in this convention, be and they are hereby respectfully requested to use their personal and united exertions to secure the early appropriation of an amount of money which shall be adequate to complete the removal of the obstruction to a safe and speedy navigation of said river.

Improvement in the Steam Engine.

A Mr. Harris, of Boston, has patented an improvement in the steam engine, of which the Boston Atlas gives the following description:

"The engine may be constructed in any of the usual forms, except the mode of communication between the crank shaft and the cross head, or lever beam. In this the novelty and improvement of the invention consists. In the ordinary mode of producing a continuous revolving motion from a reciprocating one, a single crank and one connecting rod are used, the effect of which is an unequal leverage at corresponding divisions of the outward and return strokes. To counteract the effect of this a heavy fly wheel is added, which diminishes the effective power of the engine. These evils in a great measure are remedied, and at the same time produce a gradual check to the momentum of the piston by use of two cranks, placed at right angles with each other, connected by means of rods to the ends of an oscillating lever, whose fulcrum is a pin attached to and travelling with the cross head.

At the commencement of the stroke, the crank pins stand at equal distances above and below the central line drawn between the cylinder and crank shaft, consequently no motion can ensue, and the cranks are on the dead point. Now, if the shaft be turned in either direction, on the admission of steam to the cylinder, the majority of the power will be communicated to the crank which has the greatest leverage, and the shaft will revolve in that direction. When the cranks have made a quarter revolution, the leverage is nearly equal on both, and the piston has travelled over one half its stroke. On continuing the revolution, the crank which at the commencement had the greatest leverage now has the least, the majority of the power being transferred to the other, which continues to the end of the stroke, when the cranks assume their other dead point.

The office of the oscillating lever is to equalise or average the combined effects of the cranks on the piston.

In this engine the cylinder is one-sixth greater (or as 24 is to 29) than that of the common engines with a crank of the same length, and turns the dead points independent of the piston, which in a measure checks its momentum, and thus avoids the pressure upon the journals and boxes, and consequent wear of both."

American vs. English Railroads

"The American people number 23,000,000 of souls, to whom, besides the natural yearly native increment, an addition is made by emigration of between 400,000 to 500,000 settlers mostly in the prime of life, and many with hard cash in their pockets. Wages are in the States so high, and the whole population so well off, that they can afford to spend money in traveling more universally and to a greater extent, than the inhabitants of any other country. Intensely migratory, and proverbially locomotive themselves, the annual influx of strangers and emigrants passing on to their settlement, or traveling through the country, fill every medium of conveyance to every quarter, and to overflowing. Wood is to be had everywhere for the cutting. Irish navigators present themselves on the arrival of every ship. Land may be had for nothing—premiums even offered to railway projectors by proprietors to carry their lines through their properties. There are no lawyers and jobbers to run up enormous bills in Parliamentary contests. Economy is uniformly consulted—cheapness always commended. The result, reluctantly acknowledged, and hastily slurred over, by our stags, our capitalists, and the common jackalls of the press, is neither more nor less than this: Twenty-eight millions of British have 7,000 miles of railway, and 24,000,000 of Yankees have 10,000. The English paid £250,000,000 for their 7,000 miles, while the Americans constructed and furnished 10,000 miles for £66,654,000. In a word British railways cost £35,700 per mile, and Yankee railways average £6,500, or little more than one-sixth of the cost of our own. It is obvious, from these data, that if the London and North-western can afford to divide 5½ per cent. the line from New York to Albany or Buffalo should yield 33 per cent.; and it may, on the most assured evidence, be with great safety concluded, that the account contained in our last, of American dividends ranging from 6, 8, and 10 to 15, and even 19 per cent. scarcely comes up to the most moderate estimate of the probabilities of the case.—*London Despatch*.

Ohio.

Junction Railroad.—The iron way between Cleveland and Sandusky city is to be in operation early in 1853. Some twelve miles of the road from Olmstead west are now nearly ready for the iron, and the substantial bridge over the east branch of the Black River at Elyria is about finished. The contracts for building the road from the 12 miles spoken of to Sandusky city have been let, and the work is to be pushed forward vigorously. The contractors are to have their jobs finished by the 1st of January, 1853.

From Elyria the road is on a direct line to Amhurst Corners where it crosses the Beaver creek and thence to Vermillion river, which is crossed near its mouth. The line to Sandusky is very straight, of low grade, and the estimated cost of construction is less per mile, we understand, than the cost of the C. C. & C. road. The only portion of the road not under contract is from Olmstead to the mouth of the Cuyahoga. This we are informed is to be let soon.

From Olmstead to Rocky River the line of the Junction road is not far from C. C. & C. railroad, and to get a feasible place to bridge Rocky river it crosses the C. C. & C. road twice. Thence to the Lake the line is very straight, crossing the Ridge road to Elyria near Camp's tavern, west of Ohio city. The road is to reach the valley of the Cuyahoga by a grade along the lake bank, crossing the old river bed on the bar at its mouth and terminating on the island.

The Engineer of the road supposes some plan of extending the track across the harbor as often as is necessary can be adopted, which will not material-

ly interfere with the interests of navigation. The Depot grounds, machine shops, etc. are to be on the Ohio city side of the Cuyahoga.—*Cleveland Herald*.

Hamilton, Oxford and Indianapolis Railway.—Henry C. Moore, Engineer, has just completed a preliminary survey of that part of the proposed railway from Hamilton by Oxford, College Corners, Connersville and Rushville to Indianapolis, which lies in the State of Ohio. He finds a practicable line of easy curves and grades, and estimates the entire cost of preparing the work for the rolling machinery at \$15,000 a mile. The line pursues the Four Mile Valley to Oxford, and the College Corners, on the State line—the distance is 17 83-100 miles. This line approximates to that surveyed from a point near Rossville up Four Mile, to Richmond, Indiana, and occasionally crosses it. From this we infer that it will be for the interest of the parties, to make the greater portion of the distance a common road, with branches at the extremes of the common road to Hamilton and Rossville at one end, and to Richmond and Connersville at the other.—*Cincinnati Gazette*.

Ohio and Mississippi Railroad.—The Louisville Courier learning from "a source entitled to implicit confidence," that the entire line of the road has been constructed for by H. E. Seymour & Co. of this city.

Massachusetts.

Fitchburg Railroad—Watertown Branch.—The track of the Watertown branch was completed into Waltham on Monday morning, and makes a third track of the Fitchburg railroad into that town.—The double track of the Fitchburg railroad into that town passes through a part of West Cambridge, near the Watertown line, into Waltham, and the third track is an extension of the Fresh Pond and Watertown branch into the same village. A new and handsome brick depot has recently been erected at Waltham, at the point of junction. This third track will enable the Fitchburg company to furnish additional accommodations for manufacturing establishments at Waltham, on the Charles river, and will also afford additional accommodations to the travel to and from that thriving village. The trains will commence running over the new track about the first of next month.

The new depot, mentioned above, we understand was planned by Mr. Geo. A. Parker, and is a model structure, both in its style and finish. The roof projects over a brick side-walk, and affords good protection from the weather. The rooms are spacious, well arranged and lighted, and have a perfectly home look about them. The ladies room, having access like the other to the ticket office, is handsomely carpeted and furnished, and is an exceedingly pleasant apartment for their use. Altogether we regard it as a model depot, highly creditable to Mr. Parker's skill and taste.—*Bunker Hill Aurora*.

Tennessee.

Nashville and Mississippi Railroad.—We learn that Messrs. Hazelhurst and Greene, two able and energetic Engineers, accompanied by an efficient corps of assistants, set out yesterday for the purpose of making an instrumental survey of the contemplated railroad to connect Nashville with the Mississippi river at, or not far distant from Madrid Bend—at least we understand the base line first to be surveyed will extend to that point on the Mississippi.

This line of road is intended as a continuation of the east Tennessee and Virginia road, through the east Tennessee and Georgia railroad from Knoxville to Cleveland, or some other point, where a short line of road, (also in contemplation,) will connect it with the Nashville and Chattanooga road at Chattanooga—thus forming a continuous and direct line through the valley of Virginia, east, middle and western Tennessee to the great Mississippi; at the same time giving us access to the southern portion of Kentucky—and if we cast our eyes westward still further, we find it but a step as it were to unite us with the great Pacific railroad now in course of construction from St. Louis to the western limits of the State of Missouri.

Our readers will remember Mr. Hazelhurst as the Engineer, whose able report of a reconnaissance of this same line was published not long since, and which proved not only the practicability, but also the cheapness with which a road in that direction could be constructed.

We look to the early completion of this road to the Mississippi as of paramount importance not alone to Nashville, but equally so to all Tennessee. A mere glance at the map of the State, and a reference to the other lines of roads now completed, and in progress of construction, will, we feel convinced, satisfy others as it has us, that this is at least one of the most important enterprises of the kind which has yet been set on foot by our people.—*Nashville True Whig*.

New York.

Potsdam Railroad.—The Survey of this road is completed, and Mr. Broadhead, the Chief, will proceed at once to make the estimates and profile. A report will be made in the course of six weeks. We learn that the route is a most remarkable one, being almost in an air line and of easy grade; from this place to Antwerp there will not be at any one place three feet cutting; the surface of the soil being a grade line. Passing through a rich farming country, near extensive coal-bed, and in the vicinity of a large lumber tract, costing less than the average roads, it must prove a good and profitable enterprise. It must be built.—*Watertown Jeff*.

Virginia.

The annual meeting of the stockholders of the Orange and Alexandria railroad company, was held in Alexandria on Thursday the 6th inst. Resolutions were adopted complimenting the officers for the rapid progress made in the construction of the road. John S. Barbour, Jr. was elected President in place of Mr. Smoot, resigned. A resolution was offered by Mr. Wm. D. Massey, tendering the thanks of the stockholders to Mr. Smoot for the efficient manner in which he discharged the duties of his office while President of the company, which was adopted.

Illinois.

Peoria and Burlington Railroad.—We learn from Mr. O. Houston, one of the contractors on the Peoria and Burlington railroad, that the work under his charge, is getting along finely. One mile of the road, commencing at Clark's, three miles from Peoria, and leading towards the city, is completed. Mr. Houston is working about 50 hands, and so far, he says the labor is performed without the least difficulty. This week Mr. H. intends adding to his number of hands, so that he may prosecute his work with greater rapidity.—*Peoria press*.

Baltimore and Ohio Railroad.

Through line to Cincinnati.

We would call the attention of steamboat and stage proprietors to the advertisement in this evening's paper of the General Superintendent of the Baltimore and Ohio railroad, inviting their co-operation in establishing a through line from Baltimore to Cincinnati. About the 1st of next month the railroad will be opened to Cheat river, from which a line of stages may run (five miles) to the northwestern turnpike, and thence to Parkersburg; and on the 1st of April next the road will be completed to Tygart's Valley, on the northwestern turnpike, about one hundred miles from Parkersburg. A daily line of cars will then be run to Tygart's Valley, and the line of stages, over the northwestern turnpike, will take passengers to Parkersburg, whence a daily line of steamboats will take them to Cincinnati.

It is expected that the time required to carry passengers over this route, from Baltimore and Washington to Cincinnati, will not exceed forty-eight hours, and that the charge will not be over \$12 50 to \$13 50.

That the road will be completed and open for travel, on the days heretofore fixed by the Chief Engineer, is certain. There are now five thousand laborers employed actively on the line—the Kingwood Tunnel (a mile in length) is within three hundred and fifty feet of being opened through, and every where along the whole line the utmost

activity prevails—so that by the 1st of May next the road will be opened for travel to Fairmont, on the Monongahela river, in Marion county, Virginia, when the daily line of cars will run to that point.
—*Patriot*.

Coal for Locomotives.

We copy the following from the Pittsburgh Gazette, in reference to the use of coal for locomotive engines.

To Ellwood Morris, Esq., Engineer Chartiers Company;

Sir—Agreeably to your instructions, I weighed upon my tender last week two tons or 60 bushels of coal, from the Chartiers mines, (Pittsburgh coal,) and using a few chips of wood for lighting the fire only. I ran the Baldwin engine "John Thompson" of 15 tons weight, (6 drivers connected,) with the 60 bushels of coal, a lineal distance of 60 miles, drawing the usual loads over our grade of 145 feet per mile, and curves of 550 feet radius, firing up 5 separate times.

This quantity of coal was burned in firing up, running, and standing under steam, while performing the above distance of 60 miles.

Making one bushel per mile run, Pittsburgh coal being used exclusively, and no wood carried on the tender.

I find this coal makes a very free, hot, and manageable fire, very well adapted to locomotive purposes.

Very respectfully,
EDMOND MAHONY,
Engineer of locomotive.

Mr. Morris states, in a communication to the Pittsburgh Gazette, that "the amount of coal required for the propulsion of this 15 ton freight engine has been only one bushel per mile run."

At the present rates of coal in this market, therefore, the cost of fuel per mile run by locomotives, may be reduced, by using Pittsburgh coal, to four cents per mile travelled.

This is the first time (I believe) that Pittsburgh coal has been used in firing locomotives, and its success has been complete."

Indiana.

Railroad from Goshen to Peru.—The Koskiesco Republican of a recent date says:—

"On last week the Directors of the Koskiesco, Elkhart and Miami railroad company met at Warsaw and appointed James S. Frazier Treasurer of the company, and David R. Pershing Secretary—Mr. Pershing was also appointed an agent to procure releases of right of way along the route."

From the determination shown by the people along the line of this road, we have no doubt of its speedy completion.

The stockholders in the northern Indiana road are greatly interested in the construction of this road, and will, no doubt, aid in completing it so soon as they get through their controversy with the Central Michigan road."

Operations in Hurl Gate Channel.

Lieut. W. A. Bartlett, of the United States navy, reports that he made a thorough examination of Pot Rock on Friday, and found not less than eighteen and a quarter feet of water on any part of the rock at low tide. At the commencement of operations the rock was 54 feet high, and stood in water 62 feet deep on one side and 60 on the other, being within 8 feet of the surface at mean low water. Mr. Grinnell's subscription of two thousand dollars becomes due when this rock is removed to the depth of twenty feet, and he has also promised a further sum of three thousand dollars when it is removed to the depth of twenty-four feet. To obtain the results so far accomplished, one hundred and forty-three submarine charges have been fired, consuming 16,429 pounds of powder, and it is estimated that one thousand kegs of powder will yet be required to remove the rock to the desired depth of twenty-four feet.

Ten charges have been fired on Frying Pan, and five charges on Way's Reef. A shaft has been

sunk in Way's Reef, 8 inches in diameter, and nine and a half feet deep. This will be charged with a canister of powder seven feet long, and fired under water by means of a galvanic battery. The tripod and drill have been placed on Hallett's Point, and the drilling of that rock has been commenced.

Cleveland Steam Engines.

For many years the best steamboat and propeller engines manufactured in the West, have been made at the Cuyahoga works. They have been unpuffed save in their own puffing, but their finish, power and excellent performance, have given their builders an enviable reputation. This establishment is constantly receiving orders which it is unable to fill, and others are springing up here which turn out superior work. We notice by the Monroe (Wisconsin) Sentinel, that Messrs. J. Franklin & Co., of this city, have recently put in operation at Monroe two of their engines, which we are informed are not in any respect surpassed by engines from the most celebrated Eastern works. The Sentinel says:

"We were highly gratified yesterday afternoon in witnessing the first efforts of the new engine in the steam mill. The announcement that the engines would start at 3 o'clock drew as crowded a house as one of Jenny Lind's concerts could possibly have done. The effort was eminently successful, and gave entire satisfaction to all present. The engine is one of the very best we ever saw, and will puff that establishment in the most substantial manner. The new mill will be ready to work in three or four weeks, and when completed will be highly creditable to our enterprising town, but more especially so to the public spirit of its energetic proprietors.—*Cleveland Herald*."

Indiana.

Richmond and New Castle Railroad.—This important line of railway (says the Indiana State Journal,) is being prosecuted with great energy.—It runs through a rich and beautiful country—the Garden of Indiana. A great part of the road is in the hands of contractors. The contractors on that part between Richmond and Hagerstown—sixteen miles—are obliged to have their work ready for the iron by the first of next July, and those on that part between Hagerstown and New Castle—twelve miles—by next fall. The four principal towns on the route are Richmond, Washington, Hagerstown and New Castle—all thriving and business places. At Hagerstown, the present terminus of the Whitewater canal, the railway and canal intersect. The country through which the road passes is abundantly able to construct it, and there is no doubt that it will be done.

Central Indiana.

There is perhaps no part of the Mississippi valley more productive, than that of central Indiana. This section is especially adapted to the production of wheat, corn, cattle and hogs, and is being well cultivated, supplying a large surplus product for export, this surplus has until the present time found its way to a southern market, down the natural channels. It is however very evident, that there is soon to be a change in the direction of the surplus productions of this fertile region, highly beneficial to us, as well as to Indiana. The people there are directing their attention to our lakes, canals, and railroads, as channels through which their products are to find an eastern market, when our canals shall be enlarged, and our railways matured. The cost of transporting western produce, must be greatly reduced, and when the Indiana railways shall be constructed, connecting our lakes, canals, and railroads through the Ohio roads, with the capital of Indiana the cost of transportation by the northern route to the eastern sea boards, must be much less, than by the southern, or New Orleans route, independent of the risk from the

climate, through which it must pass on that route. If these views shall be realized, it requires no spirit of prophecy to foresee that the cheap and substantial railways of Ohio and Indiana when completed, in a continuous line, uniting the lake with the capital of Indiana, must do a large and profitable business.

Memphis and Charleston Railroad.

We briefly alluded in our last to Mr. Brinkley's having effected his mission for the purchase of iron for this road. The purchase was made at \$31 50 per ton. Eight thousand and five hundred tons have been bought, enough for the road from Memphis to Lagrange, and from Decatur to Tusculumbia. The iron is of the best quality of T rail, and was purchased of Mr. George Peabody, London. It is to be delivered at Lafayette, above New Orleans, in equal quantities, at the beginning of each month, from the first of December, until the whole shall be delivered. The duty on each ton—2240 lbs.—will be \$6 84, making the cost of the iron per ton \$38 34; and the entire cost at Lafayette \$325,890 00.

We learn from Mr. Davidson, the contractor for grading the road between this point and Lagrange, that operations have already been commenced on thirty-five miles, and he will in a few days have about three hundred hands at work. He expects to have the grading finished two months before the expiration of the term of his contract, by the 1st of August.

The cars for the road are to be built at Memphis. Forty freight cars have already been contracted for, to be built by Messrs. Kay, White, Curtiss and Knap. The Memphis Eagle states that W. C. Bradford, Esq., one of their enterprising citizens, is now at the north making the necessary examinations preparatory to deciding whether or not to establish a connection with his foundry, a shop for building locomotives.

Blue Ridge Tunnel.

The engineer of the Blue Ridge railroad writes us, contradicting the report that the work on the tunnel is to be abandoned on account of the hardness of the rock, or that there is any idea of doing so. He informs us "that, although the rock is of the hardest kind, being solid trap or greenstone with veins of flint, yet we progress at the rate of about one hundred feet per month from the two ends; it being impracticable to avail ourselves of shafts at the depth of 700 feet below the Blue Ridge mountain, especially through so hard materials. I can assure you that there is not, and has never been, any intention on the part of anyone to abandon the work. The tunnel will be 4,260 feet long; we have penetrated, in the aggregate, 800 feet. We rise to it on the east side, for nearly fourteen miles, at the rate of 70 feet per mile, and descend on the west for three miles at the rate of nearly 70 feet; which is, besides the grade of the tunnel, towards the east. The work is very heavy on both sides."

Indianapolis and Sandusky.

The distance from Indianapolis to Sandusky, on Lake Erie, by the Bellefontaine line, will be 236 miles. There are now in use, over a heavy T rail, 143 miles of this line, leaving 93 miles to be completed next year by the Ohio and Indiana companies, 40 by the Indiana company, and 53 by the Ohio company. These 93 miles, we learn, will be ready for the superstructure and iron early in the spring. When this road shall be opened, our time from this city to the lake will be about nine hours,

and to New York about thirty-eight hours. This will give Indianapolis great advantages as to position, as a starting point for the East, and must give a new direction to our eastern travel and business.—*State Journal*.

American Railroad Journal.

Saturday, November 15, 1851.

Mr. Whitney's Railroad Project.

Mr. Asa Whitney delivered an address before the Geographical Society of New York on Saturday last upon his plan of a railroad to the Pacific. The address contained nothing new, and as we have laid the substance of it before our readers so many times when writing upon his project we deem it useless to repeat the old story. Mr. Whitney proclaimed his unshaken constancy to his plan, and expressed his determination to live and die for it. We confess we can see but little encouragement for him. We admire his perseverance, but his zeal for his own plan is the great obstacle to his success. He can look at nothing but this. He sees no difficulties in the way, because he knows comparatively nothing upon the subject to which he has committed himself—consequently cannot feel the propriety of availing himself of the experience of others. Those persons who have the most extensive acquaintance with any subject are always the most anxious to avail themselves of the experience of others. They best appreciate the obstacles to success in every enterprise, and are, consequently, those most anxious to possess themselves of whatever light others may have, where their own practice furnishes no precedent. Any other course but this is foolhardiness, not conduct. In Mr. Whitney's case we are tired with words, and now want something that is tangible and satisfying. Let him give less prominence to himself, if only for a brief hour; and, instead of his own, let us have the opinions of such men as Mr. Latrobe, or J. Edgar Thompson, or Mr. Kirkwood, or Mr. Garnet, or Mr. Morton, or Mr. Seymour, or some other eminent engineer, upon his plan, and let us hear what they say. Our people do not allow themselves to undertake the most trivial affair, where engineering is concerned, without consulting these men and being guided by their opinion; and what we consider to be necessary in small things, certainly is equally so in those of great magnitude. We will not depart from this wholesome rule, for Mr. Whitney nor any other schemer; and the sooner he understands this, the better all round. Mr. Whitney is a man of great enthusiasm and some inspiration, but these qualities alone cannot give us the grade necessary to ascend a mountain, nor calculate the quantity of excavation in a deep cut, nor the extreme limit to the strength of iron. All such matters must be vouched for by the proper persons, and we cannot take Mr. Whitney's word in the engineering matters connected with his project; and he will so find it. Let him come before the public with his scheme well certified by men whom we are accustomed to trust, and whose advice we follow, and we will be bound he shall have all that he asks. No one man is wiser than all others, but he is the wisest and the strongest, who adds to his own, the wisdom and experience of all others.

Louisville and Nashville Railroad.

We see by the Louisville papers, that the president of this road, L. L. Shreeve, Esq., and the chief engineer, L. L. Robinson, Esq., are now in Nashville upon business connected with the above work.

Pneumatic Pile Driving.

We learn that there is a strong probability, that the contract for the piers of a bridge over the Great Pedee river, in the line of the Wilmington and Manchester railroad, to be constructed upon the above principle, will be taken by a Northern house extensively engaged in the foundry business, and abundantly able to execute a contract of this kind. We hope to see the above mode of sinking the foundations of bridges resorted to in this country, as we are satisfied that it is in every respect much better and cheaper than the old mode of laying them by the use of coffer-dams.

Kentucky.

Harrodsburg and Frankfort Railroad.—The projectors of this road have determined to adopt the route to Frankfort. At a meeting recently held at Harrodsburg, one of the directors of the Louisville and Frankfort company offered in behalf of that company, to build the above road, provided a good subscription of \$500,000 could be raised—say \$400,000 by counties, and \$100,000 by private individuals—the company to receive the subscription and make the road, and admit the subscribers of the new stock as joint stockholders in the whole road, both main stem and branch.

The meeting resolved unanimously to recommend to the several counties represented, to raise, under the sanction of a vote of the people, and upon the credit of each county respectively, the following sums of money for the construction of the road, according to the proposition of the Louisville and Frankfort company: Mercer, \$200,000; Anderson, \$50,000; and Franklin, \$200,000; and recommended that the vote upon the proposition to raise the respective sums of money be taken in each county upon the first Tuesday of December next.

Stock and Money Market.

The favorable aspects noted in our last in reference to greater ease in the money market have not been confirmed, and money is nearly as tight as it has been at any time since the recent pressure commenced. We have commenced shipping specie in large amounts, which has had the tendency to depress stocks very rapidly, as will be seen by our quotations. There is a general feeling of distrust and uncertainty as to the future, and a belief that "times must be worse before they are better."

The grand cause of the present pressure is our foreign indebtedness. "The balance of trade" is against us, which compels us to use the *basis* of currency to pay it. We have, in another column, endeavored to show in what manner the balance of trade, when against us, affects our business operations. We beg leave to call the attention of the reader to the article referred to.

In the present state of the money market, it is worse than useless to attempt to sell bonds—the securities of new works cannot be sold at any reasonable rates. Our roads are now seriously feeling the results of over-trading, and many of them must check their operations unless money becomes more abundant.

Cleveland, Columbus and Cincinnati Railroad.—The receipts on this road for the month of September last, from passengers and freight, were 72,505 47 dollars.

New York and New Haven Railroad.—The receipts on this road continue to show the considerable improvement on the business of last year, which has been before noticed. The earnings were in October:

Passengers.....	\$53,688 47
Commutation.....	637 54
Freight.....	8,000 00

Total.....	\$62,326 01
Paid Harlem Road.....	4,326 51

Net receipts.....	\$57,999 50
October, 1850.....	44,785 07
October, 1849.....	34,377 74

The receipts show a gain of nearly 33½ per cent.

Macon and Western Road.—The receipts of this road in October were..... \$21,732 62
October, 1850..... 20,108 99

Increase..... \$1,623 62

The receipts for the week ending 2d of November were \$7,397, showing a very large business.

Delaware and Hudson Canal.—The amount of coal transported over the Delaware and Hudson canal during the week ending Nov. 8 1851, was, 31,230 Quantity previously received..... 664,805

Total tons.....	696,035
Up to the same period in 1850.....	460,114

Increase this year..... 235,921

The receipts of the Morris Canal Company were:—

Week ending 1st inst.....	\$3,529 34
Same week last year.....	2,622 75

Increase for October, 1851.....	\$906 59
Total to 1st November, 1851.....	\$96,282 09
do. do. 1850.....	75,006 85

Increase in 1851..... \$21,265 24

Ogdensburg Railroad.—The official statement of the earnings of this road for the month of October, is as follows:

Freight.....	\$29,526 08
Passengers.....	10,760 84
Rents.....	262 54

Inc.	\$40,549 46
In corresponding month of last year....	22,732 66

Gain this year, 78 per cent..... \$17,817 40

The Evening Journal gives the annexed statement of the quantity of flour, wheat, corn and barley, left at tide water during the 1st week in November in the years 1850 and 1851, as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1850. . .	152,990	228,296	43,941	78,875
1851. . .	154,080	251,145	206,620	183,155

Inc.	1,090	22,849	Inc. 162,679	104,280
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The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 7th Nov., inclusive, during the years 1850 and 1851, is as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1850. . .	2,401,852	2,468,940	3,143,678	1,408,072
1851. . .	2,885,204	2,678,423	7,295,069	1,216,245

Inc.	483,352	209,483	4,152,381	dec. 191,827
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The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 7th Nov., inclusive, during the years 1849 and 1851, is as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1849. . .	2,589,940	2,018,611	4,767,282	1,105,080
1851. . .	2,885,204	2,678,423	7,295,059	1,216,245

Increase.	345,264	660,812	2,528,777	111,165
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By reducing the wheat to flour, the quantity of the latter left at tide water this year, compared with the corresponding period of last year, shows an increase of 525,240 bbls. of flour.

850.....	8,471 19
increase, 20 per cent.....	81,584 84

"	"	6's, 1856.....	85
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Peru Railroad.—The extension of this road from Noblesville north is progressing, and the engineer of the company, W. J. Holman, informs us that the grading of the remaining 50 miles, through to Peru, it is ascertained from the recent estimates, can be completed by five hundred hands in fifty days. The bills of sawing for the superstructure are all taken by the different mill proprietors along the line, and it is expected, by Messrs. Tomlinson & Stewart, undertakers, to have the White River bridge, at Noblesville, completed in time to commence at that point laying track as early as the first of May next.

California.

San Francisco and San Jose Railroad.—The new State of California, among her numerous other enterprizes, has commenced the building of railroads. Her first important project of this kind is a road from San Jose to San Francisco, a distance of 51 miles. The charter for the road was obtained at the last session of the Legislature, and the company was organized on the 6th of September last, by the choice of the following gentlemen as directors, viz:—

Davis Divine, Esq., J. Alex. Forbes, Esq.,
Hon. E. O. Crosby, Dr. James C. Cobb,
Capt. W.D.M. Howard, Peter J. Davis, Esq.,
Daniel Murphy, Esq., P. Van Caneghan, Esq.,
Thos. O. Larkin, Esq., Sherman Day, Esq.,
Sam. J. Hensley, Esq., Joseph C. Palmer, Esq.,
Hon. Joseph C. Sram.

At a subsequent meeting of the directors the following officers were chosen, viz:—

President—Davis Divine, Esq., of San Jose.
Vice President—J. Alex. Forbes, Esq., of Santa Clara.

Secretary—Charles E. Allen, Esq., San Jose.

Chief Engineer—Wm. J. Lewis, Esq.

Asst. Engineer—T. Arrowsmith, Esq.

An Executive Committee, consisting of the President, and Messrs. Crosby, Van Caneghan, P. J. Davis and Day, were chosen at the same time.—Also a Finance Committee, consisting of Dr. J. C. Cobb, Joseph Aram and Capt. W. D. M. Howard. The commissioners to open books of subscription to the capital stock, are Capt. W. D. M. Howard, Joseph C. Palmer, Samuel J. Hensley, Dr. J. C. Cobb and Charles White.

Subscriptions to the amount of \$150,000 have been obtained, and sufficient paid in to defray the expenses of survey, etc. Two routes for the road have been partially surveyed, one running through the heart of the valley of Santa Clara, near the Bay of San Francisco, and the other on a higher level, near the foot of the Coast Range. Both routes are very eligible.

The following extract from an address issued last February shows the practicability of such a railroad, together with the statistics of business and travel then existing.

"The valley of San Clara, with its tributaries, contains about 900,000 acres of as fine tillage land as the agriculturalist need desire. This land has yielded one hundred fold increase of wheat, and has been equally prolific in other products. One of the committee on this address has raised 900 bushels of potatoes this year on one acre. We speak advisedly when we say that in two years, with the aid of a railroad, this valley will be able to supply San Francisco with all the produce she can use. Our teeming acres will pour forth a bounteous supply for our population when it shall have risen from 20,000 to 200,000 inhabitants.

"Even with the present population of the valley, a profitable business can be done on such a road. During the last seven months, the amount of passenger travel between this place and San Francisco has not been less than 10,500, at an average expense of \$16 each, making a total of \$168,000.—During the same time about 2,000,000 feet of lumber were brought to the Embarcadero, at an average cost of \$15 per thousand feet, amounting to \$30,000. To this must be added \$30,000 for other freight. In this enumeration we omit the immense quantities of hay, wood, bricks, potatoes, quicksilver, cattle, and other articles which have been transported to San Francisco by water or land. To this we must add the cost of carting to and from the Embarcadero. Some estimate may be formed of the enormous amount of this item of expense, by the fact that one firm, and that not one of the largest, has paid, during six months, over \$3,000. These facts justify the supposition that

the expense of transportation for the six months ending Dec. 31, 1850, has not been less than \$30,000.

English and American Iron.

The Philadelphia Ledger gives the following as the result of the experience of the Reading railroad company, in the use of American and foreign rails upon their road:—

The average yearly per centage of rails worn out on the road for the two years ending on the 1st of December, 1849, has been as follows:—

English 45 pound rail, 1 3-10 per cent per annum.

Do. 52 " " 1 4-10 " " "

Do. 60 " " 6 3-10 " " "

Phoenixville Pa.,

60 " " 7-10 " " "

This statement, however, does not exactly indicate the relative value of the several kinds of iron mentioned. The 45 and 52 lbs. rail, are both on the light track; yet it is the 10 or 11 years' wear of the former which compares with the 7 and 8 years of the latter, and the 5 and 6 years of the 60 lbs. rail, which are compared with the average of the first three years wear of the Phoenixville American 60 lbs. rails; both of which latter patterns are on the loaded (coal) car track.

The following is given as the comparative wear of rails on the Reading railroad:

English, 4 1-10 per cent. per annum.

American, 1 4-10 " " "

Difference in favor of the American, 2 7-10 per cent.; or otherwise stated, the cost of repairing these rails *per annum*, (considering the damaged iron taken out as worth half as much as the new iron put on the track) will be as follows:

Repairing Eng. iron per ton per yard, 82 cents.

Do. American, " " 28 "

Difference in favor of American rails, 54 cents.

North Carolina.

Wilmington and Manchester Railroad.—We gave last week a statement of the financial condition of this road. We have received the annual report, which presents the following general view of the condition of the company.

The road is now in excellent order to carry on its ordinary operations. It is well stocked with locomotives, passenger and freight cars, all in good condition. The steamboats are likewise in very good condition, with the exception of the Dudley, which will require repairs before the close of the year. There has been a large increase on receipts from railroad freights, showing that the expenditures in this department were judiciously made.

The road is being relaid with the heavy iron rail, and so far as it is finished, compares with the best roads in the country. The superiority of this rail over the old flat bar is acknowledged by all who pass over the road. During the past year a contract was made to embank as much of the truss work at Rockfish and Neuse river, as it was deemed safe to close up. The embankment on the south side of Rockfish is now nearly completed, and that on the north side in a state of forwardness, the contractors expecting to complete it by the middle of December.

The board have also contracted for an extension of the warehouse in Wilmington, the present warehouse being found to be too small to hold the goods offered for transportation.

They have also made a contract with the Washington and New Orleans Telegraph Company to put up posts for a line of telegraph wires, from the junction with the Petersburg railroad to Wilmington.

This work has been paid for in stock of the telegraph company, sixty-five shares at \$50 a share.

The receipts of the present year exceed those of last year by \$39,222 74, most of which increase is derived from the local business of the road, and it is to local business, in the opinion of the President, that the board must look for a steady and healthful support.

From the present good condition of the company, and their flattering prospects for the future, the board have felt warranted in declaring a dividend of profits of three dollars on the share to stockholders.

For the American Railroad Journal.

H. V. POOR, Esq.

DEAR SIR:—In your valuable paper of Nov. 1st I noticed an article relative to the "Ohio and Indiana" railroad, copied from the Fort Wayne Times, the editor having been furnished with the facts by J. R. Straughan, Esq., the Chief Engineer. I desire to call attention to the following paragraphs which occur in that article.

"At Crestline, twelve miles east of Bucyrus, a point on the Cleveland and Columbus railroad, about three miles north of Galion, the Ohio and Pennsylvania road terminates, and then begins the Ohio and Indiana road which runs to Fort Wayne, 131½ miles long."

"This is the third link in the great chain of railroads from Philadelphia to the Upper Mississippi, and is the only legitimate extension of the eastern road at Crestline, as the Bellefontaine and Indianapolis road comes to Galion, and does not connect; thus giving the Fort Wayne road the sole advantage of this connection, although the Ohio and Pennsylvania company has located its road three miles farther south than a direct line, which they could have preferred in order to accommodate the Bellefontaine company."

The particular point to which I wish to refer is, the impression intended to be conveyed by these paragraphs, viz:—that the Ohio and Indiana road is the only legitimate western continuation of the Ohio and Pennsylvania railroad, and that the Bellefontaine and Indiana road "does not connect," and therefore is not to be regarded as a western continuation of the Ohio and Pennsylvania road. This by no means corresponds with the view hitherto held out to the public by the Ohio and Pennsylvania company. In their second annual report, published in January, 1850, occur these words.

"At the contemplated terminus of your road, and where it will intersect the Columbus and Cleveland road, the directors of the Bellefontaine and Indiana railroad, now being located, intend to commence their road, which connects with the Indianapolis and Bellefontaine railroad, now under rapid continuation, to the flourishing capital of Indiana, and thence to Terre Haute on the western border of the State, forming one continuous central railroad from the Delaware to the Wabash, appropriating to itself the business of all the roads constructed and in progress from the Ohio to the Lakes."

And in the third annual report, published in January, 1851, the annexed paragraphs will be found "as the second link in the great central chain of railroads, from Philadelphia to St. Louis, by the way of Indianapolis, our road occupies a highly important position; and the companies comprising the chain, have aided each other, by mutual efforts, to draw public attention to the vast consequences

which will flow from bringing together the several links of this grand communication, which is now advancing to a speedy and successful consummation."

"The whole length of the Ohio and Pennsylvania railroad will be 185 miles from Pittsburgh to its point of intersection with the Cleveland, Columbus, and Cincinnati railroad at *Crestline* near *Galion*. On the map accompanying this report, *Crestline* (a proposed new town) and *Galion* are represented as almost in contact; and in the skeleton map of Ohio, published by J. R. Straughan Esq., resident Engineer, and approved by S. W. Roberts, Esq., Chief Engineer of the Ohio and Pennsylvania railroad company, the terminus of the Ohio and Pennsylvania is shewn at *Galion*.

I can find nothing in any of the reports of the Ohio and Pennsylvania company, calculated to create the impression that the Bellefontaine and Indiana railroad is not the direct continuing link in the great chain leading to Indianapolis, etc.

Are the stockholders of the Ohio and Pennsylvania company prepared to endorse the statement that the Bellefontaine and Indiana railroad is *not* the legitimate extension of the great chain so often adverted to, and in such glowing terms?

Galion was the point of junction first designated by the Ohio and Pennsylvania company. In January, 1850, the Ohio and Indiana railroad company did not exist. The Bellefontaine and Indiana company located their road to *Galion* before any location had been made on the Ohio and Pennsylvania railroad west of Mansfield, and the Ohio and Pennsylvania company, (apparently attaching more importance to the northwest connection towards Chicago, than to the great central line towards Indianapolis,) afterwards located their line to a point on the Cleveland and Columbus railroad, 4 miles from *Galion*. Should it be constructed on the route as now located, it will involve the necessity of making 4 miles of connecting track, or, using 4 miles of the Cleveland and Columbus railroad, which latter alternative would of course be attended with decisive disadvantages to the Ohio and Pennsylvania company, and operate directly in favor of the route towards Cleveland and New York and Boston instead of the route through Pittsburgh and Philadelphia.

If the Bellefontaine and Indiana road is to be regarded as the principal continuation of the Ohio and Pennsylvania line, the connection should be made with that view. If the Ohio and Indiana line is to be considered its main extension, the location viewed in that light, is now right. It is for the Ohio and Pennsylvania railroad company to decide, though the stockholders in the Pennsylvania railroad company are also interested in the operation.

EXAMINER.

Canada.

Quebec and Richmond Railroad.—The city council of Quebec has passed the ordinance granting a loan of £100,000 in aid of the Quebec and Richmond railroad, by which a communication will be formed between that city and the Atlantic and St. Lawrence railroad, at a distance of about 70 miles from Montreal. It was stated a short time since that a contract had been made for the grading of this road, to be commenced this autumn, subject only to the contingency of this loan being granted. The Montreal Gazette says that the business which has been done by the St. Lawrence and Atlantic railroad since it was opened to Richmond, has been twice as much as its most sanguine friends had anticipated.

Influence of Artificial Means of Communication upon Commerce.

So long as natural water courses were used, as the cheapest and most expeditious routes for the transportation of property, large towns were of necessity located upon navigable river, or so situated as to be accessible by shipping from the ocean. Towns grow up upon the most convenient location for the depot of the produce of the inhabitants of a particular section of country, and from which they can most readily procure their supplies of foreign merchandise; and as the primitive mode of transportation was by water, so far as this can be made available, all large cities are almost invariably so situated, as to enjoy this mode of transportation.

But a new element is at work in the science of locomotion, which is completely overriding the laws which gave birth to, and located our older cities. Rivers were formerly used as routes of internal commerce, by reason of superior economy to any other mode. If we can supersede rivers by routes still cheaper, and more expeditious, new cities must spring up on the new lines of intercommunication, and those which rely solely upon their old avenues, must inevitably retrograde, if not entirely sink into insignificance.

As short as has been the time since the introduction of railroads, our own experience is full of illustrations of the truth of the above remarks.—Those of our cities which led off in the construction of these works received a new impulse, and shot rapidly ahead of all their neighbors and rivals. The effect was soon seen, and the cause admitted by all. Nearly every town in this country of any considerable importance, or that aspires to become so, has been forced to construct, or to commence the construction of, railroads, as the only means of protecting its trade from the encroachments of their more enterprising rivals, who led off in this new movement.

The northern States, from their greater wealth and dense population, first commenced the construction of railroads, and for the same reason still maintain their superiority. The roads from the leading northern cities have now reached distant sections of the country, and we begin to see illustrations on a larger scale of what was before confined within a much smaller sphere. While railroads were in their infancy, their influence was confined within the narrow limits of a few miles, and was seen in the growth or decadence of rival villages and towns. With the wider extension of the system, though but yet very imperfectly developed, we see them begin to exert their influence upon cities thousands of miles apart, in adding to the already overflowing business of some, and in threatening to sap the very foundation of the prosperity of others.

These general views are strikingly confirmed by comparing the present condition of New York and New Orleans. The latter is situated at the mouth of a river, having, with its branches, more miles of navigable water than any other in the world, and draining the largest and most fertile valley on the globe. For this great valley, the Mississippi is the only natural outlet, and the city of New Orleans has been the only depot of its immense products. So favorable is the position of New Orleans for commercial greatness, that should any person be called upon to point out on a map of the world, the site where should grow up the greatest city, he would certainly select that occupied by New Orleans—so superior are the advantages in her favor over all others.

How is it, on the other hand, with New York? She, to be sure, possesses one of the most magnificent and convenient harbors to be found in the world, and the majestic Hudson, which, though hardly excelled by any other river in the excellence of its navigation, and the splendor of its scenery, brings her in contact with a very small extent of country. With all the advantages which we have named, the trade of New York was confined to a small territory, watered by the Hudson. She was even cut off from nearly all connection with distant parts of our own State, from the almost impassable condition of our common roads. The west to her was a *terra incognita*, so long as her trade was limited to the narrow belt of country bordering the Hudson. She occupied, both as regarded her population and commerce, a secondary position in the rank of American cities. Philadelphia was regarded, at home and abroad, as a much more important town, and was in possession of the greater part of the trade of the country, and the entire trade of the west, which is now regarded as the true source of wealth and prosperity by all our Atlantic cities.

New York showed nothing more than the ordinary growth of a town, keeping pace only with the growth of the surrounding country, until the opening of the Erie canal. This work was built at a time when water carriage was believed to be superior to every mode, as it was, to every known one. The effect which followed the opening of this great work was immediate and decisive. The trade which formerly went to Philadelphia, over the ordinary wagon roads, was immediately turned into new channels, and from that time New York shot ahead of all her rivals, and soon left them far behind in the race for commercial supremacy. She has ever since steadily enlarged the sphere of her influence, until she has nearly driven all her rivals out of the most coveted field, the west, and is now in the almost exclusive possession of that portion of it bordering upon the great lakes, and is rapidly attracting to herself that portion of it which has been accustomed to use the Mississippi as their outlet to a market, and to receive through New Orleans their supplies of foreign merchandise.

The Erie canal opened a water line from New York to the great lakes. These virtually carried that great work a thousand miles further west, to Chicago. To avail themselves of this new route, the people of Ohio, Indiana and Illinois have constructed four extensive lines of canal, from different points on the lakes, to the navigable waters of the great valley, the Ohio and the Illinois rivers. The Erie canal being the cheapest outlet for these States, and the different works of which we have spoken, gave the inhabitants of almost every portion of the State we have named, a comparatively cheap and expeditious outlet to the seaboard. The immense trade immediately thrown upon the Erie canal, enabled our people to steadily reduce the tolls, till these at last reached a figure far below what was once believed to be possible. The effect of the low rates was to attract an increased business, which promoted still more the rapid growth of our city; thus adding at the same time to its value as a market for the produce of the west.

It never entered into the heads of the projectors of this work, that a different direction could be given to the commerce of the Mississippi river, nor had this idea been seriously entertained by any one,

* Her canal is nearly completed to the Ohio river.

till within a comparatively recent period. The fact had to be *proved*, before the idea could gain any credence. New York has now entered the lists with a new rival. She is now disputing with New Orleans the supremacy for the trade of the Mississippi valley, and success thus far has been as marked, and the corresponding effect upon her rival is as palpably visible, as they were in our contest with Baltimore and Philadelphia. Already has New York struck a decisive blow at the business of New Orleans, which is rapidly being reduced, by the loss of the trade of the upper portions of the great valley, which is being drawn through the channels of which we have spoken, to New York.

The result already produced is most marked, and has caused a corresponding consternation and dismay among the people of New Orleans. They feel and acknowledge the inroad already made upon their trade, and they are endeavoring to arouse themselves to some effort to ward off the danger which threatens such disastrous consequences.

The results which have thus far been accomplished, have been effected entirely through the medium of the New York and the western canals. The Ohio canals gave us the trade of that State. The Wabash canal has exerted the same effect in Indiana, as fast as its different divisions have been opened. The completion of the Illinois canal has produced the same result there, and has extended the sphere of our influence to the Mississippi. On this account, the Illinois canal may perhaps be regarded as of more importance to this city than either those of Ohio or Indiana. The effects that followed the opening of these was, in a measure, confined to the immediate section of country traversed by them, but the Illinois canal carries us to the very centre of the great valley, and taps the grand artery through which has flown its life's blood, which has built up and sustained the cities and towns upon its banks. The Illinois canal is rapidly changing the course of trade in the west. Through this route, the whole Lake region receives its supplies of sugar, molasses, hemp, and all the products of the Southern States consumed at the north; and on the other hand, northern and eastern manufactures and foreign merchandize takes the same route to the southern and western consumer. The Illinois river is well known to be one of the best for navigation in the United States, and this river in connection with the canal brings New York into direct intercourse with a very large section of country that formerly used the Mississippi as the only means of procuring their foreign supplies, and sending their produce to a market. A merchant at Quincy, or at Peoria for instance, instead of going to St. Louis or New Orleans for his goods, comes directly to New York and purchases at first hand and saves the commission formerly paid to the western jobber. The course of trade instead of being parallel with the river is now at right angles to it. The tendency of this will be to divide it among a larger number of smaller towns instead of concentrating it at a few points.

If the results which we have stated have been brought about through the agency of canals, how much more emphatic will be the change when the railroad shall have superseded the canals, and when the numerous lines, now in progress shall reach the Mississippi. At least six lines of railroads, are in progress, which, will strike that river between the mouth of the Wisconsin and the Ohio, three of them based upon Lake Michigan.

These at the several places, at which they touch

the Mississippi, will intercept the trade arriving at such points, and transport it direct to eastern markets. These roads all coincide with the natural direction of trade in the west, while the Mississippi for most articles is at right angles to it, and it is not difficult to see that trade will in the end follow its appropriate routes.

If the views we have expressed are correct, it certainly becomes the leading to cities on the Mississippi, New Orleans and St. Louis for instance, to make use of all the means in their power to maintain their trade against the encroachments of New York. The longer this is delayed the greater will be the difficulty of meeting them. New Orleans in particular must now act with promptness and energy or her culminating point will soon be passed.

Cincinnati and Mississippi Railroad.

Great satisfaction is expressed by the people of St. Louis and Cincinnati at prospect of the early completion of this extensive line of railroad, which has been recently placed under contract to a New York company, headed by Mr. Seymour. The whole road will be about 330 miles long. The iron alone at \$45 per ton, delivered, will cost about \$15,000.

Should the Illinois division of this road be vigorously pushed, it can be completed in less than two years. Such we presume will be the case, as the work can, with equal convenience be commenced at both ends, at the same time. Should the Evansville railroad be extended to Terre Haute within the same time, a railroad route will be opened to St. Louis much sooner than has been anticipated. In about one year from this time the Great Western line will have reached Terre Haute, and until a direct line from that place, shall be carried across the States, travel will take the route indicated. We have no doubt that in less than two years the road between Vincennes (a point on the Cincinnati road) and Terre Haute will be constructed, while we see but little prospect of the early opening of a road in Terre Haute, Alton or St. Louis, Missouri.

Iron by way of the Lakes.

If any one is desirous of seeing a lively state of things, says the Sandusky Commercial Register, let him take a stroll up town and see the landing of railway iron on Sheldon's dock. The following vessels are now unloading: New Haven, Paragon, Albatross, Westchester, Monsoon, Palestine and Niagara. The Florence and Castalia are in the bay.

We learn that before the arrival of the above vessels, there were about 10,000 bars on the dock, and when they have discharged their cargoes, there will be from 16,000 to 20,000. Besides these, there are three or four vessels on their way up, laden with iron. It is sent up the road as fast as possible. The iron is principally for the Mad River road, and the balance for the Cincinnati, Hamilton and Dayton, and the Cincinnati and Hillsborough roads.

Railroad Iron.

THE undersigned offer for sale 1000 tons Railroad Iron, (about 56 lbs. to the yard,) now at Brooklyn.

CHOUTEAU, MERLE & SANFORD,
Oct. 1, 1851. 51 New st.

M. B. Hewson, Civil Engineer,
(Open to a New Engagement.)
Memphis, Tenn.

To Railroad Companies.

H. & F. BLANDY, Proprietors
LOCOMOTIVE ENGINE WORKS,
ZANESVILLE, OHIO.

RESPECTFULLY give notice to Railroad Companies that they are now prepared to furnish Engines of the most approved construction and finish, which, for capacity, speed and durability, are not excelled in this country.

Also, all other Railroad machinery, of both wrought and cast iron, pertaining to the road, stations or machine shops.

Terms as favorable as any other builders in the United States.

The facilities for transportation from Zanesville are as good as from any other point in the Union, having steamboat navigation to the Ohio river, and Canal boat and Railroad connection with the Ohio river and Lakes.

One of their Engines, the "MUSKINGUM," on the Central Ohio Railroad, may be referred to, or others, at their works. The attention of those interested is invited, and orders solicited.

Oct. 30th, 1851.

Notice to Contractors.

ENGINEER'S OFFICE, CIRCLEVILLE, }
October, 29, 1851. }

SEALED PROPOSALS will be received by the undersigned, at the Office of the Cincinnati, Wilmington and Zanesville Railroad Co., in this place, until 5 o'clock, P. M., of Monday, the 17th of November next, for the clearing, grubbing, grading, bridging and masonry of all that portion of said road lying between the towns of Morrow, in Warren county, and Lancaster in Fairfield county, a distance of 89 miles.

Bids, including with the above the ballasting, furnishing and laying down the ties, and laying the track of said road, will also be considered.

Bills specifying a per centage of stock and county bonds, or both, to be received in payment, are also invited.

The maps, plans, profiles and the line itself are now ready for examination. The work submitted comprises a large amount of good work, and the attention of contractors generally is solicited.

By order of the board,

TRACY McCracken,
Chief Engineer C. & Z. R. R. Co.

To Contractors.

OFFICE OF THE E. AND L. R. R. Co., }
Evansville, Oct. 23d, 1851. }

SEALED PROPOSALS will be received at this office from the 13th to the 23d day of December next, for the grubbing, grading and bridging of that portion of the Evansville and Illinois railroad, lying between Princeton and Vincennes, a distance of 24 miles.

This work includes two bridges; one across White River, about 600 feet, the other across Patoka, about 200 feet.

Contractors will state what proportion of the Stock of the Company will be taken in payment.

Plans, profiles and specifications, will be exhibited, and all requisite information given at the Office of the company in Evansville, on and after the 13th day of December next. By order of the Board of Directors.

SAM'L. HALL,
President.

RAILROAD SPRINGS.

Fuller's India-rubber Springs.

THESE are now made in our own Factory, of the best materials. Each spring is guaranteed to perform the required work. Purchasers guaranteed against adverse claims.

Car Builders will save great expense by calling at the office of the Company.

23 Courtlandt St., New York.

To Railroad Companies.

THE undersigned has discovered and patented an imperishable, cheap, and sufficiently elastic substance, to be introduced between the sill and rail, so that the stone sill can be used in place of the wooden sill: entirely overcoming that rigidity where the rail is laid directly on stone. Address

J. B. GRAY, Philadelphia.

July 10, 1851.

4m

To Stone Masons.

THE NEW ALBANY AND SALEM RAILROAD Company have about 10,000 c. yards of Abutment Masonry to let at private contract, to be completed by the 1st of July, 1852.

To contractors who can produce testimonials of character for ability as **STONE MASONS**, fair, remunerating prices will be given.

Early applicants, by securing the work now offered, will gain advantages over competitors for the erection of an additional 15,000 yards, to be let out early next spring, in bridging the streams between Bedford and Michigan City, via Bloomington, Gosport, Crawfordsville and Lafayette, (the most productive and healthy region in Indiana,) by the knowledge they will have acquired of the resources of the country.

Application may be made in person, or by letter addressed to the undersigned, at New Albany, Indiana.

S. B. WILSON, Engineer.
Engineer's Office, New Albany,
Sept. 29th, 1851.

Engine Waste.

CLEAN WASTE for Locomotive and Steam-boat Engines, in lots as wanted; also, superior Steam Packing. Orders, with explicit directions for forwarding, should be addressed to

J. MORTIMER HALL,
36 South st., New York.

November 1. 3m

Notice to Contractors.

Atlantic and St. Lawrence Railroad.

THE Sixth and last Division of the Atlantic and St. Lawrence railroad will be placed under contract on the 10th day of November next, and proposals will be received until that date by the subscribers, at Sargeant's Tavern in the town of Northumberland, N. H.

Plans and profiles will be in readiness for examination at the Engineer's Office in Northumberland, on and after the 1st of November.

This Division extends from the Connecticut River in the town of Stratford, N. H., to the boundary line of Canada, a distance of about forty miles.

No Spirituous Liquors will be allowed on the work, and bids of contractors who have heretofore failed to pay their laborers, on this, or any other work, will not be considered.

Cash payments will be made monthly, reserving ten per cent. until the final completion of the contract.

JOHN M. WOOD & CO.

October 14th, 1851.

To Contractors.

OFFICE WILMINGTON & MANCHESTER R. R. Co., }
Marion C. H., S. C., October 18, 1851. }

SEALED PROPOSALS will be received until the 15th of December next, for the Piers of a Bridge across the Great Pee Dee River. The job comprises four piers, one a very heavy pier for a draw, and the sinking of cast iron hollow piles by "Dr. Pott's Pneumatic Process," for forming foundations. The plans and specifications of the piers will be exhibited by the Secretary of the Company at Marion Court House, and by the Resident Engineer, L. J. Fleming, Esq., at Wilmington, North Carolina.

WALTER GWYNN,

Chief Engineer Wilms. and Man. R.R.

November 1.

Richmond, Va.

Best Cast Steel Axles & Tires,
(A NEW ARTICLE.)

For Railroad Carriages and Locomotives.

THE quality of this Steel is sufficiently attested in the announcement that it has carried off the first prizes awarded at the World's competition of 1851, in London. The axles are in general use on the Continent, and are now offered in competition with any other that can be produced; and to be tested in any way that may be desired by the Engineers of the United States, either by impact or by torsion. This Steel is manufactured by Fried Krupp, Esq., of Essen, in Renish Prussia, represented in the United States by

THOS. PROSSER & SON,
28 Platt st., New York.

November 1.

Railroad Iron.

THE undersigned are prepared to enter into contracts now at specific prices, to deliver Railroad Iron during the coming Winter and Spring, free on board at the shipping ports in Wales, or at ports in the United States.

CHOUTEAU, MERLE & SANFORD,
Sept. 30, 1851. No. 51 New st.

Notice to Bridge Builders.

PROPOSALS will be received at the Engineer's Office at Charlottesville, Va., on the 14th of November, for the construction of a bridge over Mechum's river, on the Virginia Central Railroad. The length of the Bridge will be 350 feet, in three spans. Height of Bridge above the river 70 feet. Bids will be received on Howe's plan and Town's lattice. The work to be finished by the first of July, 1852, but the timber to be procured at once. Plans and specifications will be ready to be exhibited on the 28th inst.

T. COLDEN RUGGLES,

Civil Engineer Va. Central R. R.

Charlottesville, Oct. 11, 1851.

N. B.—Good timber may be procured in the vicinity of the line of the road, which will be in operation to a point 3 miles from the bridge.

SIX HUNDRED THOUSAND DOLLARS
NORTHERN INDIANA RAILROAD 7 PER
CENT MORTGAGE BONDS.

The Northern Indiana railroad company offer for sale \$600,000 of their 7 per cent. mortgage bonds with interest coupons annexed.

They are in sums of \$1,000 each, payable August the 1st, 1861, with interest at 7 per cent. semi-annually on the 1st of February and 1st of August, payable at the Mechanics' Bank in this city, where the principal is also payable, and are secured by a mortgage to Shepherd Knapp, Esq., of New York, in trust for the bondholders.

They are issued under acts of the Legislature of Indiana, authorising their issue and the mortgage as above, to secure the same. The amount of bonds to be thus issued under the mortgage, is limited to One Million of dollars, \$400,000 of which have been disposed of, and \$600,000 are now offered for sale.

The mortgage covers the whole road of the company in Indiana, and is the first and only lien thereon.

This embraces the entire line from its connection at the State line of Michigan with the Michigan Southern road (of which it is an extension) through Elkhart, Mishawaka, South Bend, and Laporte, to the boundary of Illinois, about 100 miles; a line to and from Michigan city of about 25 miles, connecting with the same, and a line of 10 miles from Elkhart to Goshen—making in all about 135 miles of road.

The company hold also, by lease and contract, a line from the western boundary of Indiana to Chicago, of about 13 miles.

By an existing contract between this company and the Michigan Southern company, a continuous line of railroads is formed from the head of Lake Erie, at Monroe and Toledo, in a very direct course through Southern Michigan and Northern Indiana to Chicago—a distance from Monroe of 246 miles, and from Toledo of 243—all to be under one superintendence and management, and for all practical purposes forming one joint interest.

At Chicago this line of road connects with the "Chicago and Rock Island road," to be extended to the Mississippi river, at Rock Island, 180 miles long, and which is under contract.

Also, with the Chicago and Galena railroad, about 84 miles of which is now about completed and in use, the entire line of which, it is expected will be completed to the Mississippi river in all next year.

Also, with the Illinois Central railroad, to run from Cairo, at the mouth of the Ohio river, to Chicago.

At Toledo it unites with the great chain of railroads along the shore of Lake Erie to Cleveland, Dunkirk and Buffalo. This whole south shore line will probably be completed in the course of the next season, and parts of it will be opened for use the present year.

The whole line of roads of this company is under contract; the grading and bridging on 60 miles are completed, and the rails laid on 50 miles of it. The iron has been purchased for the whole road from the boundary of Michigan to Chicago, and most of it is delivered on the line ready for use. The road is finished 30 miles to South Bend, to which point the cars are now running from Monroe and Toledo, and the work of laying down the rails is in active progress upon the residue of the line. The main line from the East to Laporte (some 56 miles) will be opened next month, and the whole road from Lake Erie to Chicago, in March next, when the journey from Lake Erie to Chicago, may easily be made in 8 hours.

The means for the construction and equipment of the Northern Indiana road are provided by stock and bonds.

Nearly one million of dollars are subscribed to the stock, about \$850,000 of which is taken in New York and the Eastern States, the remainder along the line of the road. An average of 50 per cent. has been paid on these subscriptions, and the residue is being regularly paid at the call of the company.

For providing the remaining means required to complete the work, the company have issued their Mortgage Bonds to the amount of one million of dollars in all, as above stated, proceeds of most of which are wanted to pay for iron rails, machinery, &c.

The mortgage empowers the trustee, in case of failure to pay either interest or principal, to take possession of the road, with its equipments, and receive its earnings, or to sell the same, on due notice, and apply the proceeds in payment.

That this road will prove one of great usefulness and profit will at once be seen by reference to a map of its line and connections, being an essential link in the great chain of railways from the city of New York to the Mississippi river along the southern extremity of the two great Lakes, traversing as it does one of the most productive agricultural regions in the United States, while its cost per mile will be less than one-half the usual cost of railroads of the same class in the Eastern States. As a local road alone, giving an outlet to the productive region it traverses, it is confidently believed that it will pay a large profit upon its cost without reference to its connections.

The proof of this is found in the earnings of the Michigan Southern railroad for the past five months which, until its connections are formed is to be regarded as a local road, and is of about equal length with the Northern Indiana road, and traverses a country not more productive, viz:—

For May, 1851, \$24,427	For August, 1851, 24,196
For June, do.... 22,511	For September, do, 35,217
For July, do.... 20,603	

Total..... \$126,954

It will be thus seen that the security offered is of the highest character.

Sealed proposals will be received for any amount not less than \$1,000, until the 12th day of November next, at 3 o'clock P. M.

Proposals may be addressed to **WINSLOW, LANIER & CO.**, No. 52 Wall-street, or **E. C. LITCHFIELD**, Treasurer of the Company, No. 47 Beaver-st., indorsed "Proposals for Northern Indiana Railroad Bonds."

Twenty-five per cent. of the purchase money will be required to be paid immediately upon acceptance of the bids; and the remainder in equal payments on the 25th of November and the 10th of December next. Any purchaser will be at liberty to pay in full at once, and interest upon the bonds will run from date of payment.

Three hundred thousand dollars (one-half the amount now offered) will be disposed of absolutely and without reserve, to the highest bidders.

The company reserve the right to withdraw the remainder, if the offers are not satisfactory.

All necessary information in relation to the bonds together with maps, may be obtained by the calling on Winslow Lanier & Co., or E. C. Litchfield, at either of which places copies of the bonds and mortgage may be had.

GEORGE BLISS JOHN STRYKER.
EDWIN C. LITCHFIELD, CALVIN BURR,
HUGH WHITE, Committee of the Directory,
New York, Oct. 20, 1851.

Bridges & Brother, DEALERS IN RAILROAD AND CAR FINDINGS,

61 Courtlandt street, New York.

Having established a general Depot for the sale of articles used in the construction of Railroads, Locomotive Engines and Railroad Cars, we would invite your attention to our establishment. We have already in store a good assortment of CAR FINDINGS and other articles used in the trade, and feel justified in saying, that should you desire anything in our line, we can supply on terms perfectly satisfactory, and in the event of your desiring to order, you may feel assured that your terms will be as good as though you were here to make your own purchases.

Among our goods may be found Railroad Car Wheels, Axles, Jaws and Boxes, Nuts and Washers, Bolts, Brass Seat Hooks and Rivets, Window and Blind Springs, Lifters and Catchers, Door Locks, Knobs and Butts, Ventilators and Rings, Car Lamps, Coach and Wood Screws, Jack and Bed Screws and Babbitt's Metal; also Plushes, Damask, Enameled Head Linings, Cotton Duck for Top Covering in width sufficient without seams, Curled Hair and all other articles appertaining to cars.

Also a new and valuable CAR DOOR LOCK, well adapted to the Sliding Door. This is decidedly the best yet introduced.

LOCOMOTIVE ENGINE LANTERNS, the best article made in the country. Whistles, Gauge and Oil Cocks, Hemp Packing, American, Russian and Italian. We are also agents for Lightner's Patent Journal Box for Car Axles, that invaluable invention, for the economical use and preservation of Car Journals.

Coach VARNISH and Japan of the best quality.

We would also offer our services for the purchase as well as for the sale of goods on commission.—Both members of our firm have had the experience of many years in the manufacture of Railroad Cars, and our Senior was a member of the well known house of DAVENPORT & BRIDGES, Car Manufacturers, Cambridgeport, Mass. With our knowledge of matters pertaining to Railroads, we feel quite confident in giving satisfaction to both buyer and seller, and hope that through assiduity and attention to any business entrusted to our care we shall merit a continuance of confidence and patronage.

BRIDGES & BROTHER.

July 22, 1851.

Lightner's Patent Axle Boxes.

THE Undersigned are Agents for, and offer for sale, *Lightner's Patent Axle Boxes*, for Railroad Cars and Tenders, which have, by thorough experience, been demonstrated to be one of the most valuable improvements ever introduced in Locomotion. The saving effected in oil alone, will in a few months pay the first cost of these boxes, independent of other advantages. They are now in use upon the following, among other roads, viz:

Boston and Worcester, Nashua and Lowell, Providence and Fitchburg, Northern, N.H., Cheshire, Manchester and Lawrence, Concord, N.H., Concord and Claremont, Ogdensburg, (Northern, N.Y.) Stonington, New London, Willimantic and Palmer, New Jersey Central, New Hampshire Central, Worcester and Nashua, Fitchburg and Worcester, Connecticut and Passumpsic, Lowell and Lawrence, Salem and Lowell, Wilton Branch, Newburyport.

Below will be found the certificates of a number of gentlemen, whose opinions will be good authority in every part of the country.

Office Boston and Prov. R. R.,
Boston, Dec. 28, 1849.

Mr. JOHN LIGHTNER,

Sir,—It affords me pleasure to say, that after two years' trial of your boxes, I am fully and entirely satisfied of their superiority over any other pattern we have used. This superiority consists in economy of oil and freedom from "heating." I have tried every pattern of box in use, of any note, and do not hesitate to say, that you have devised one which in every respect combines greater advantages than any other within my knowledge; these advantages are so manifest, that I am fitting up all

our cars with your boxes, as fast as practicable.

Annexed, is a statement of an experiment with your boxes, the result of which may be of use to your interests.

Ten passenger cars, running 72 wheels, fitted up with Lightner's boxes used 41½ pints of Patent Oil, at 50 cts. per gallon, ran 43,099 miles, equal to 5-18 pints per wheel for 43,099 miles. Speed, 30 to 40 miles per hour.

Very respectfully yours,

W. RAYMOND LEE, Supt.

I have examined the above statement of Mr. Lee, and fully concur with him in his opinion of the superiority of Lightner's box.

GEORGE S. GRIGGS,
Supt. Machine Shop B. & P. R. R.

Boston, July 26, 1849.

This is to certify that J. Lightner's axle boxes for railroad cars and locomotive tenders, have been in use on the Boston and Worcester railroad one year, and I unhesitatingly pronounce it, in my opinion, the best and most economical one in use, requiring less oil, of easy application, not susceptible of derangement, as in most kinds in use. When requiring repairs or renewal, the same may be done in one-fourth of the time usually occupied for that purpose. The box requires oiling not oftener than once a month—is kept quite free from dust, and consequently wears much longer than those generally in use.

D. N. PICKERING,

Supt. Motive Power, B. & W. R. R.

Office of Boston Locomotive Works,
December 12th, 1849.

The Boston Locomotive Company have been using J. Lightner's patent axle boxes under the tenders of their engines for several months, and find them more highly spoken of by the railroad companies that have used them in regard to economy in the use of oil, their durability and their ease of adjustment, than any other boxes which they have used. We therefore do not hesitate to recommend them to all railroad companies.

DANIEL F. CHILD,

Treas. Boston Locomotive Works.

Taunton Locomotive Works,
Taunton, July 7, 1849.

Mr. H. F. ALEXANDER,

Dear Sir,—Your favor of yesterday came to hand in which you ask what success we have met with, in using Mr. Lightner's patent box for cars, engines, &c.

We have put it in use on the Boston and Providence railroad, New Bedford and Taunton Branch railroad, Central railroad, N. J., Norfolk County, Rutland and Burlington, and as yet we have not had one complaint from them; and from what we have used of it, and witnessed, we do not hesitate to say that it is superior to anything in use for that purpose. It is simple in its construction, and easy of access, and the reservoir is held close to the shaft, and the oil and journal is perfectly secure from dust; they will run from four to six weeks without replenishing the oil. The brass in the box is changed very much easier than by any other plan that we have seen.

Very resp. yours,

W. W. FAIRBANKS, Agent.

Office Providence & Worcester R. R. Co.,
Providence, Dec. 17th, 1850.

H. F. ALEXANDER, Esq.,

Sir,—The "Lightner patent boxes" for cars and locomotives have been in use under a portion of the passenger cars and engines of this company for upwards of two years, and have given very great satisfaction.

Though combining many excellent qualities, their great superiority consists in the economy of oil.

The result of experiments upon this road shows the consumption of oil by the use of this box, to be not more than one sixth part the quantity consumed by the use of the common box.

With the common box, eight passenger cars, 64 wheels, running 90 miles per day, consumed in 12 months 520 gallons of oil, being an average of 8½ gallon per wheel per annum.

With the Lightner box the same cars running the same number of miles per day, during the same space of time consumed 73½ gallons of oil, being an average of 1½ gallon per wheel per annum.

So manifest are its advantages over any other box used by this company, it is intended to place it under all our cars as soon as practicable.

Besides the saving of oil, as they afford complete security from dust, we think them more durable than any other box in use.

Another advantage resulting from the use of this box is, cars run more easier than with the common box. The saving in fuel which it would effect, would of itself, we think be a sufficient inducement to use this box in preference to any other known to us.

Very respectfully,

ISAAC H. SOUTHWICK, Supt.

JOHN B. WINSLOW,
Supt. Machine Shop, P. & W. R. R.

Cambridgeport, April 5th, 1851.

H. F. ALEXANDER, Esq.

Sir,—This may certify that I have been engaged in the manufacture of railway cars since 1834, and have built for the different railroad companies cars of all descriptions to the amount of three millions of dollars, and have used on the above cars all kinds of journal boxes, and find that none give better satisfaction than the "Lightner patent box," both on account of the saving of oil and the arrangement for taking out and re-placing the composition by means of the sliding key, and other conveniences which no other box possesses.

Yours respectfully,

CHARLES DAVENPORT.

Worcester, March 17th, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—This is to certify that I have been for some years past engaged in building cars, and that I have tried most, if not all of the patent boxes, and have found Lightner's patent superior to all others as far as the saving of oil is concerned, also the ease with which they are fitted and exchanged in case they get out of order.

For the last three years, I have put them under all of the cars I have built, and in every instance they have given the most entire satisfaction.

Yours truly,

OSGOOD BRADLEY.

Office Union Works, So. Boston,
May 23d, 1851.

This certifies that I have applied Mr. J. Lightner's patent axle boxes to my locomotives and tenders for the past two years. I consider them superior to all others,—economical in their use, and possessing many important advantages not found in any other boxes.

SETH WILMARTH.

Office 15, R. R. Exchange, Boston,
June 1, 1851.

This is to certify, that we have known the success of Lightner's patent journal boxes upon various roads in New England the past three years, and have been led to examine their peculiar construction.—We are well satisfied of their merits, and have adopted them upon our small gravel cars, and take pleasure, as we ever have done, in recommending their use upon all roads where we are employed in the construction.

GILMORE & CARPENTER,
Contractors.

Amoskeag Manufacturing Co. Machine Shop,
Manchester, May 31, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—We are using the Lightner box on all the engines and tenders we build, and we are satisfied that it is the best box in use, and recommend the same to all those who purchase engines at our works.

Yours respectfully,

O. W. BAYLEY, Agt.

This is to certify that the Fitchburg railroad company having become satisfied of the superiority of J. Lightner's patent Axle Boxes for Railway Cars and Locomotive Tenders adopted the same

and are bringing them into general use upon their road.

One year's experience with the above improvement, has fully convinced me that there has never been anything offered to the public for that purpose which possess such intrinsic value; in fact, this is an improvement which seems to overcome all the difficulties found in all the various kinds now in use. It possesses very many advantages over all others. Some of which are [first] the first cost is much less than that of most boxes in use. [Secondly] 75 per cent is saved in oil; one gill applied to each Journal once a month, or one quart to an eight wheel car, is all these boxes require per month [Thirdly] no dust can gain access to the Journal, which is constantly lubricated with clean oil; hence the saving in repairs of Journals and composition bearings, is a matter of importance. [Fourthly] its construction is truly simple—not complicated, having nothing liable to become loose by constant and severe service. [Fifthly] for convenience there is nothing which approaches this improvement.—The composition bearings may be removed from the Journals of an eight wheel car, by one man, and returned, or duplicates, in twenty minutes, while under the car: the same would require two men, at least half a day with other boxes in use.—The trucks and wheels using these boxes, are free from oil and dirt, usually seen upon all railroad cars, at great expense to the corporation.

NATH'L JACKSON.

Supt. Car Building and Repairs, F.R.R. Co.

Boston, March 9, 1849.

I hereby certify, that I have examined a box for Car Journals, invented by Mr. Lightner of Roxbury, Mass, and I have thought so well of it that I have adopted it on our railroad, I have known of its success on other roads.

S. M. FELTON,

Supt. F. R. R.

Office of the Central R. R., N. J.,
Elizabethtown, May 1849. }

H. F. ALEXANDER, Esq.,

Dear Sir:—Your favor, [wishing to be informed how we liked Lightner's patent axle boxes for R.R. Journals,] has been duly received; in answer we would say, we have used the boxes on Locomotive tenders one year, more or less, and on our cars some six months. I consider them the best boxes in every respect, I have ever used, or even seen used on any other roads—for safety, durability and the economy pertaining to all the details connected with the boxes and Journals of R. R. Car wheels; and we shall adopt them upon this road.

Yours Respectfully,

JOHN O. STEARNS.

Supt. Central Railroad Co., N. J.

Manchester, N. H., Nov. 1st, 1850. }

H. F. Alexander, Sir,

I have used "Lightner's Boxes" under all the Cars of the Manchester and Lawrence railroad, and feel no hesitation in saying that I think them to be the best boxes now in use.

Yours, &c.,

THEODORE ATKINSON, Agent.

Cheshire R. R. Office, Keene, }
March 5th, 1851. }

Mr. H. F. Alexander,

Sir,—Lightner's Patent Boxes have been used on the Cheshire R. R. about a year, and have given the highest degree of satisfaction.

All the Passenger Cars now in use, and a considerable number of Merchandise Cars are furnished with them, and they will take the place of the Common Boxes on all the cars as fast as circumstances will permit.

Very Resp'tly,

L. TILTON,

Supt. Cheshire R. R.

Boston and Worcester Railroad, }
Boston, April 1st, 1851. }

H. F. Alexander, Esq.,

Dear Sir,—Lightner's Patent oil saving box for railroad cars, has been adopted by this corporation; we are taking out the common and substituting the

Lightner's at the rate of fifty boxes per month; it will soon take the place of all others, as it is decidedly preferable to any heretofore used by this corporation.

G. TWITCHELL, Supt.

Statement of amount of oil used on 32 8-wheel freight cars, on the Boston and Providence Railroad (with Lightner's Boxes) from March 10, 1849, to February 27, 1851, and upon 12 8-wheeled passenger cars from September 8, 1849, to February 27, 1851.

FREIGHT CARS.

Amount Oil.	No. months.	Amount Oil.	No. months.
1.—21 pts.	10	17.—23½ pts.	14
2.—19 "	6	18.—23½ "	11
3.—25 "	13	19.—36 "	21
4.—18 "	7	20.—22 "	10
5.—22 "	12	21.—38½ "	24
6.—24 "	13	22.—29 "	23
7.—20 "	11	23.—35½ "	23
8.—21 "	11	24.—37½ "	23
9.—23½ "	10	25.—51 "	23
10.—21 "	9	26.—31½ "	24
11.—20 "	9	27.—28½ "	23
12.—21½ "	11	28.—36 "	23
13.—19 "	8	29.—50½ "	24
14.—25½ "	17	30.—50 "	23
15.—20½ "	10	31.—41 "	23
16.—31 "	18	32.—39½ "	23

Total, 925½ pts. 510

PASSENGER CARS.

1.—19½ pts.	18	7.—30 pts.	18
2.—25½ "	18	8.—25½ "	18
3.—33½ "	16	9.—29 "	18
4.—19 "	15	10.—46½ "	17
5.—15 "	15	11.—9 "	9
6.—22 "	18	12.—65½ "	17

Total, 340 pts. 197

Averaging 1 4-5 pints of oil for freight, and 1 7-10 for passenger cars per month only!

All orders and enquiries promptly attended to.

BRIDGES & BROTHER,

No. 64 Courtlandt st., New York.

July 25, 1851.

Trautwine on R. R. Curves.

By JOHN C. TRAUTWINE, Civil Engineer,
Philadelphia, Pa.

JUST published, accompanied by a Table of Natural Sines and Tangents to single minutes, by means of which all the necessary calculations may be performed in the field.

This little volume is intended as a field-book for assistants; and will be found extremely useful, as it contains full instructions, (with wood cuts) for laying out, and adjusting curves; with Tables of Angles, Ordinates, etc., for Curves varying from 13 miles, down to 146 feet Radius.

A portable Table of Natural Sines and Tangents to minutes, has for a long time been a desideratum among Engineers, independently of its use in laying out curves.

The volume is neatly got up in duodecimo; and handsomely bound in pocket-book form.

Sold by Wm. Hamilton, Actuary of the Franklin Institute, Philadelphia. Price \$1.

Also, "Trautwine's Method of Calculating Excavation and Embankment."

By this method, which is entirely new, (being now made known for the first time) the cubic contents are ascertained with great ease, and rapidly, by means of diagrams, and tables of level cuttings. Thin octavo; neatly half bound, \$1. For sale by Wm. Hamilton.

June 28, 1851.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff St.

CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by POWERS & WEIGHTMAN, manufacturing Chemists, Philadelphia.

Jan. 20, 1849.

To Chief Engineers, Directors of Railroads, Canals, etc.

A Civil Engineer and Surveyor, who has been professionally engaged under the British Government, East India Company, etc., is desirous of obtaining employment as an Assistant. No objection to the South or West. Address for one month to C. E. & S., American Railroad Journal office.

August 16, 1851.

To Engineers.

A NEW WORK on the Marine Boilers of the United States, prepared from authentic drawings, and illustrated by 70 engravings, among which are those of the fastest and best steamers in the country, has just been published by B. H. Bartol, Engineer, and is for sale at the store of

D. APPLETON & CO.,

Broadway

September 1, 1851.

Pneumatic process for making Foundations for Bridges, Piers, etc.

THE Attention of Engineers, Contractors, and Bridge Builders, etc., is directed to this method of forming secure foundations. Hollow Cylindrical piles from 8 inches to 10 feet in diameter may be sunk through sand, mud, clay, etc., to any required depth, and filled with concrete or masonry.

The efficacy and economy of the process has been demonstrated in the construction of numerous permanent works, at a much less cost than the use of any other method. (See evidence in Parliamentary enquiry, Railroad Journal, April 19, 1851.)

Contracts made, or licenses granted for the use of the invention in any part of the United States, by

CHARLES PONTEZ,

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LOWMOOR IRON.

THE LOWMOOR IRON COMPANY having appointed Wm. BAILEY LANG their sole agent in America and Canada, he is now prepared to receive and execute all orders for Railway Tire Bars, bent, welded, and blocked Railway Tires, Axles, Piston Rods, and Boiler Plates. Also, plain, angle, rivet and every other description of Lowmoor Iron.

All communications respecting the above are requested to be sent to Wm. Bailey Lang, at his Steel Warehouse, No. 9 Liberty Square, Boston, or to the Lowmoor Iron Works, Bradford, Yorkshire, England.

30th Sept., 1851.

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Fuller's Patent India-rubber Springs.

PRICE reduced to 50 cents per pound. The owners of this Patent now manufacture the Springs in their own Factory, and guarantee that each spring shall perform its required duty.

Purchasers guaranteed against adverse claims. They may have full confidence in the working qualities of the springs.

The suits brought against Ray & Co., will soon be brought to issue, and we await the result with satisfaction, having full confidence in the pure administration of the Laws.

The long advertisements put forth by Ray & Co. about prior invention of the spring are worthless; he has not proved prior invention, and cannot sustain his patent in a Court of Law.

For the owners of Fuller's Patent,

G. M. KNEVITT,

23 Court and st., New York.

October 7, 1851.

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THE undersigned, Agents for British Manufacturers, continue to sell Railroad Iron of the best quality, and of any weight or pattern required at any part of the United States or Canada.

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Now being published in Twelve Parts, price 25 cents each, the **PRACTICAL MODEL CALCULATOR**, for the Engineer, Machinist, Manufacturer of Engine work, Naval Architect, Miner and Millwright.—By Oliver Byrne, Compiler and Editor of the Dictionary of Machines, Mechanics, Engine Work and Engineering, and Author of various Mathematical and Mechanical works—illustrated by numerous Engravings; forming, when completed, one large volume, octavo, of nearly 600 pages.

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THE Fourth Annual Exhibition of AMERICAN MANUFACTURES, by the MARYLAND INSTITUTE for the Promotion of the Mechanic Arts, will be opened in Baltimore on the 20th October, 1851.

The Exhibition will be held in the **SPLENDID NEW HALL** of the Institute, (fronting on Baltimore street) now being rapidly completed. Their edifice is centrally situated, chaste in its architecture, solid in its construction, and is by far the largest and most complete building in the United States, devoted to the Mechanic Arts. It may be added that this building is 355 feet long by 60 in breadth, with an average height of 68 feet, containing some twelve apartments, the largest of which is 255 feet by 60, and that the cost will be over \$70,000.

To this Exhibition, the Managers ask the attention of all engaged in industrial pursuits throughout the country, and cordially invite them to contribute specimens of their best productions for public inspection, and to compete for the prizes offered by the Institute. These prizes consist of **GOLD and SILVER MEDALS, DIPLOMAS, etc.**, which were last year distributed as follows:—*Gold Medals, 16; Silver ditto, 90; Diplomas, 60; besides 85 articles of Jewelry, etc., to ladies. Fair play will be scrupulously observed towards all, and every facility of Steam power, shafting, fixture, labor, &c., &c., will be amply provided free of expense.* The machinery will be under a special superintendent, and a fine display of it is looked for. The last exhibition of the Institute was visited by more than 40,000 persons, and with their vastly improved accommodations and alterations, this number will be doubled at the coming display, embracing many Virginians, Pennsylvanians, and other strangers from the South and West.

Joshua Vansant, President.

Ed. Needles, } Vice Presidents.

F. A. Fisher, }

Samuel Sands, Rec. Sec'y.

Wm. Prescott Smith, Cor. Sec.

F. J. Clare, Treasurer.

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(The last nine in *Italics* are the Committee on Exhibition.)

The Hall will be opened for the reception of goods on **MONDAY, 13th October**; on the next Monday, 20th, at 7 P. M., the Exhibition will be formally opened to the public, and will positively close on **Wednesday, 19th November**. Articles for competition must be in the Hall by **Thursday night, Oct. 16, unless delayed in shipment after starting in ample time.**

Those who intend depositing, will give the Committee or the Agent, notice as early as possible, stating the nature of the goods, and probable amount of room required, to exhibit them to advantage.

Circulars, containing a view of the new Hall and the full regulations of the Committee, with special information, if required, may be had promptly, by addressing the undersigned, or the Institute's Agent, J. S. Selby, Baltimore, post-paid.
ADAM DENMEAD,
Chairman Com. on Exhibition for 1851.

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Quarts, per dozen,	\$1 50	6 oz. per dozen,	\$0 50
Pints,	1 00	4 " "	0 37½
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On draught per Gallon, 20 cents.

This is the best Ink manufactured. It flows freely, is a good copying ink, and will not mould, corrode, precipitate or decay. Orders for export, or home consumption, carefully and promptly attended to by
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To Railroad Companies, etc.



The undersigned has at last succeeded in constructing and securing by letters patent, a **Spring Pad-lock** which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

I also invite attention to an improved **PATENT SPRING LOCK**, for **SLIDING Doors to Freight and Baggage Cars**, now in use upon the **Pennsylvania Central, Greensville and Columbia, S.C., Reading, Pa., and other Railroads.**

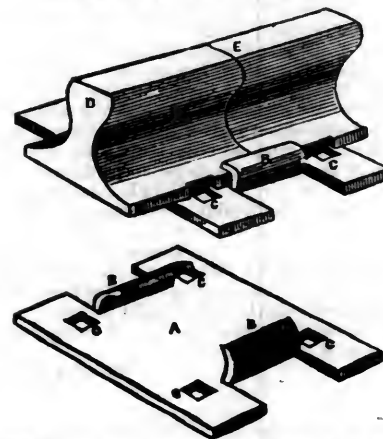
Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH,

46 South 8th St. Philadelphia.

May 9, 1851.

The American Railroad Chair Manufacturing Co.



ARE prepared to make **WROUGHT IRON RAIL ROAD CHAIRS**, of various sizes, at short notice.

By use of the **WROUGHT IRON CHAIR**, the necessity of the wedge is entirely done away—the lips of the chair being set, by means of a sledge or hammer, close and firmly to the flange of the rail.

The less thickness of metal necessary in the Wrought Iron Chair gives much greater power and force to the spikes when driven—and consequently a much less liability to the spreading of the rails by reason of the spikes drawing or becoming bent.

The less weight necessary in the Wrought Iron Chair, will enable us to furnish them at a cost much below that of **CAST IRON CHAIRS.**

DESCRIPTION OF THE ABOVE CUTS.

Figure 1 is a perspective view of the rail secured in the chair, and fig. 2 is a perspective view of the chair itself. D, E, are sections of two rails placed together, and secured at the joint on the chair by the jaws B, B. The chair is bolted down by spikes C, C. In fig. 2, the chair is represented as made of a single block or plate A of wrought iron.

The chair is set in its proper place on the track, spiked down, and the ends of the two rails brought together within the jaws as represented in fig. 1.

For further information address,

N. C. TROWBRIDGE, Secretary,
Poughkeepsie, N. Y.

June 1, 1851.

Railroad Commission Agency.

THE Subscriber offers his services to Railroad Co's and Car Makers for the purchase of equipment and furniture of roads and depots and all articles and materials required in the construction of cars, with cash or approved credit. No effort will be spared to select the best articles at the lowest market price.

He is sole Agent for the manufacture of the **ENAMELED CAR LININGS**, now in universal use. The best Artists are employed in designing new styles, and he will make to order pieces with appropriate designs for every part of the car, in all colors, or with silver grounds and bronzed or velvet figures.

He is also Agent for Page's Car Window Sash Fasteners, which is preferred by all who have used it to any other.

CHARLES STODDER,

75 Kilby st., Boston.

June 20, 1851.

3m.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 136 NASSAU ST., NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE
SECOND QUARTO SERIES, VOL. VII., No 47! SATURDAY, NOVEMBER 22 1851 [WHOLE No. 814 VOL. XXIV.]

PUBLISHED BY J. H. SCHULTZ & Co., 136 NASSAU ST.

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American Railroad Journal.

Saturday, November 22, 1851.

Railroad Convention at New Haven.

On Wednesday, the 12th instant, a convention of the friends of the air line railroad, between New York and Boston, was held at New Haven. The meeting was called by the Mayors of the cities of New Haven and Middletown, and Hon. C. R. Alsop, President of the proposed road, in pursuance of votes of the Common Councils of the cities of New Haven and Middletown, and of the directors of the New York and Boston railroad company.

The object of the convention was to call public attention to the importance of the proposed work, and to secure additional subscriptions to the capital stock. The sum of \$800,000 has already been subscribed. It will require about \$3,000,000 to complete the road. There was a very large number of persons in attendance from New York, Boston and the towns along the line of the proposed road.—The convention was organized by the choice of the following officers:—President, Hon. A. N. Skinner, Mayor of New Haven; Vice Presidents, Hon. Benj. Douglass, Mayor of Middletown; Hon. N. P. Wilder, of Boston; Professor W. C. Fowler, of Amherst, Massachusetts; Wedworth Wads-

worth, of Dunham; Secretaries, Alsted H. Terry, Esq., of New Haven; Dennis Sage, of Middletown.

After the organization was completed, the convention was first addressed by the Mayor of New Haven, who congratulated them upon the large audience that had assembled, and the deep interest taken in this great work, the New York and Boston railroad, commonly called the air line. He said that the people of New Haven were not so excited upon the subject as its friends from other towns. This was not owing to their want of interest in the undertaking, but to the variety of other projects they had been called upon to carry into effect. He hoped they would now offer the enterprise their warmest support and encouragement.—He said that New Haven had been hitherto cut off from the eastern part of the State, but this would no longer be the case. The road which was now in contemplation would pass directly through that portion of the State, which would be a great thing for Middletown and other towns, in a business point of view; but it would be still greater as regards the interests of literature, morality, and religion. The travel between New York and Boston would pass over this route, because it was the shortest and most direct. There was no doubt, then, that the line would command a large amount of business, just in proportion as it would contribute to the advancement of human happiness.

Hon. C. R. Alsop, President of the road, was then called upon. He said that it had been proposed to establish a direct line of railroad between the great cities of Boston and New York. Every improvement in steamboats and railroads, by which distance can be shortened, is regarded as of great advantage to the whole public. This road when completed would be the great highway of the east and south, and also of the west, when its connection with the Erie road should be established.—This being the most direct route, it would change the direction of travel, through the State of Rhode Island. Various other lines that were projected and were supposed to be antagonistic to the line would prove to be only feeders, and their construction should be hailed as the greatest advantage.

Mr. Amidon, who next addressed the convention, thought the new line would prove a good business road; for he had examined the country through which it was to run, and found it to be as rich and

productive in local business as any in New England. The various miscellaneous productions—the handicraft, the agricultural, and the mechanical of every kind—were as fully developed as in the vicinity of any line in Massachusetts. There was a larger amount of cotton, wool, boots and shoes manufactured on the first 30 miles of line than in any 30 miles of line in New England, excepting the line embracing Boston and Lowell, there being but 26 miles between those cities.—The local business of the road he thought, would afford it ample support, but the lateral business would afford it still greater support, and the through business which would pass over it, in consideration of its being at least 28 or 30 miles shorter than any other route between Boston and New York, would crown all, while the saving of expense in the building of that 30 miles of railroad would be equal to the interest of the entire one-third of the capital.

Hon. Albert Smith, from Maine, next addressed the convention. He said that the State of Maine was among the three first in the Union for commercial importance, and built more steamships and merchant vessels than any three States.—Three-quarters, if not seven-eighths, of these merchant vessels were for merchants of New York and Philadelphia. There was a constant travel, therefore between those States and Boston. He said that nearly all the ships built in Maine were built from the timber of other States, such as Maryland and Virginia. The travel, therefore, to the State of Maine alone would pay the expenses of this railroad, and a handsome profit besides.

Hon. Mr. Russell, of Boston, Professor Silliman, of Yale, and Professor Fowler, of Amherst College, followed in order. Mr. Russell alluded to the cheapness of the road, the whole expense of which would not be equal to that of tunnelling 4 miles of the Hoosic railroad. He thought it would be profitable, because cheap. The saving of time was also a great consideration. Many of the routes that are at present constructed, are built with reference to this; as, for instance, the European and North American railroad, to save the time now occupied in the passage of the steamships, and the Hudson River Railroad, constructed along one of the most beautiful and navigable rivers in the world, in order to shorten the time between New York and Albany. Professor Silliman spoke of

the greater prosperity, and the superior intelligence which prevailed in those countries where railroads were numerous. He contrasted the miserable condition of the people in those parts of Italy, particularly the Pope's dominions, where railroads did not exist, with that of the inhabitants of Tuscany and Lombardy, where railroads prevailed.

After the addresses were concluded, the following resolutions were unanimously adopted:

Resolved, That in the opinion of this convention the public interest imperatively demands the construction of the shortest possible railroad route between New York and Boston, whose lines of steamers form the regular communication of this continent with Europe.

Resolved, That the local business on the line of this road would alone justify its construction.

Resolved, That the following reasons, in the opinion of this convention, fully warrant the belief, that the stock of this road must necessarily prove one of the most productive of any in this section of our country:

1st. It is the shortest possible route between the two great commercial emporiums of the north.

2d. Its unity under one board of directors.

3d. Its numerous tributaries, bringing Worcester, the great railroad centre of Massachusetts, some 20 miles nearer to New York than by any other existing roads; the Hartford and Providence road, affording to the inhabitants west of Willimantic along its line from Hartford, the shortest road, by about 14 miles, to Boston, and to the country east of Willimantic from Providence, a route to New York, some 12 miles less than by any other road; the New London and Palmer road, with its business, to New Haven and New York.

4th. Its cost of construction being estimated at \$3,000,000, only one-third of the cost of the present land route from New Haven to Boston.

After these resolutions were taken, the meeting adjourned.

From the Journal of the Franklin Institute.

RULE FOR CALCULATING THE WEIGHT THAT CAN BE SAFELY TRUSTED UPON A PILE WHICH IS DRIVEN FOR THE FOUNDATION OF A HEAVY STRUCTURE. BY JOHN SANDERS, BRET. MAJO U. S. ENG.

A simple empirical rule, derived from an extensive series of experiments in pile driving, made in establishing the foundation for Fort Delaware, will doubtless prove acceptable to such constructors and builders as may have to resort to the use of piles, without having an opportunity of making similar researches. I believe that full confidence may be placed in the correctness of this rule, but I am not at present prepared to offer a statement of the facts and theory upon which it is founded.

Suppose a pile to be driven, until it meets such an uniform resistance as is indicated by slight and nearly equal penetrations, for several successive blows of the ram; and that this is done with a heavy ram, (its weight at least exceeding that of the pile,) made to fall from such a height that the force of its blow will not be spent in merely overcoming the inertia of the pile, but at the same time not from so great a height as to generate a force which would expend itself in crushing the fibres of the head of the pile. In such a case it will be found that the pile will safely bear, without danger of further subsidence, "as many times the weight of the ram, as the distance which the pile is sunk the last blow, is contained in the distance which the ram falls in making that blow, divided by eight." For example, let us take a practical case in which the ram weighs one ton and falls six feet, and in which the pile is sunk half an inch by the last blow; then as half an inch is contained 144 times in 72 inches, the height the ram falls, if we divide 144 by 8, the quotient obtained, 18, gives the number of tons which may be built with perfect safety, in the form of wall, upon such a pile.

From the London Times, September 27th.

Railroads in the World.

COMPARATIVE SYNOPSIS OF RAILWAY TRANSPORT.

Having briefly sketched the railway communications executed and in progress in different countries where, that species of locomotion has been adopted, we shall now bring into juxtaposition the principal results of our calculations, and show the comparative progress which different nations have made in this important art. In making such a comparison, it is especially necessary to consider, not merely the length of railway, but the capital which has been invested in its construction—for two lines of communication receiving the common denomination of "railway," may differ from each other extremely in their utility and value. Such a line of communication, for example, as that which connects, or lately connected Portsmouth, in the State of Virginia, with Weldon, in the State of North Carolina, and that which connects London and Birmingham, both receive the common name of railway, nearly in the same manner as the log cabin of a Missouri settler and Blenheim palace receive the common designation of dwelling house. The most exact measure of the relative utility or efficiency of two lines of railway is, therefore, cost. It is not, however, to be forgotten, that even in adopting this test, regard must be had to the relative cost of land, material, and labor, in different localities.

The extent of railway communication, and the expense of its construction, may be compared with reference to the population whose commerce it subserves, or to the territorial extent of the country through which it is carried.

In the following table, taken with some modifications, from the work already noticed, are given, according to the most recently published returns, the population and territory, and ratio, between them, for the several States in which railways have been constructed.

Table showing the population and territory, and their relation, in the several Countries where railways have been constructed.

	population.	Extent of Territory. Square mile.	pop. per. Square mile.
United Kingdom,	28,000,000	121,050	231.40
Germanic States including Denmark and Holland	45,753,000	268,548	170.00
United States	25,000,000	3,314,365	7.20
France	35,400,000	204,708	173.00
Belgium	4,335,000	11,256	382.00
Russia	54,000,000	1,892,478	28.60
Italy	47,600,000	312,774	152.00
Totals & average	239,088,000	6,125,179	39.03

It appears from the official returns that the total length of railway under traffic in the United Kingdom on the last day of 1850 was 6,621 miles, which were distributed as follows:—

	Miles.
England and Wales	5,132
Scotland	951
Ireland	538

Total length..... 6,621

The length of railway at that date in progress of construction, consisting of extensions of existing lines, branches or new lines, is not ascertained with precision, but was certainly under 1,000 miles. Of this a part has, of course, been completed and brought under traffic since the commencement of the present year. Now, as 625 miles of new line were brought under traffic in 1850, we shall not be far from the truth if we assume that since the commencement of the present year, between 300 and 400 miles more have been completed. This would give a total length of railway of 7,000 miles now complete and in operation.

By the returns of the Railway Commissioners it appears that on the 1st day of 1850 the total amount of capital which had been expended on the railways was £220,000,000 sterling. But this sum included a certain unascertained amount absorbed by the railways then in progress, which the commissioners roughly estimated at £20,000,000. This, with

another small deduction, £197,500,000 chargeable to the railways at that date in operation. But, on the other hand, it is considered that railways after they are opened continue for a considerable time to absorb capital before they attain the entire completion. When first opened, stations are imperfectly furnished, some not yet erected, rolling stock is complete, depots for engines and carriages, still in progress, and some not yet commenced, turn-plates, sidings, water tanks, coke ovens, and a thousand other accessories require the lapse of some years to be fully completed and supplied. We shall not, therefore, over-estimate the capital absorbed by the railways open on the 1st January, 1850, if we leave to its account the amount which the commissioners deducted as representing the capital which had been expended on the railways in progress but not then opened. Thus we shall assume that the railways open on the 1st of January, 1850, whose total length amount to 5,996, represent a total capital of £220,000,000.

Allowing a proportional amount of capital for the 1,000 miles opened since that date, we shall find that the 7,000 miles of railway now open will represent a total capital of £250,000,000.

This result, combined with the calculations and returns given in Dr. Lardner's work, (Railway Economy, p. 496,) supplies data from which the following table has been computed:—

Table showing the extent of Railways under Traffic, and the extent of capital invested in them, in the several Countries in which railways have been constructed:

	Railways completed. miles.	Cost of construction and equipment.
United Kingdom	7,000	£250,000,000
Germanic States	5,342	66,775,000
United States	10,289	66,654,000
France	1,018	48,781,000
Belgium	532	9,576,000
Russia	200	3,000,000
Italy	170	3,000,000

Totals..... 24,551 447,786,000

It must be admitted that we have here sublime results of human industry and enterprise. If sublimity can be applied with propriety to such a class of phenomena.

Within the brief period of twenty years the population of the above named parts of the world, amounting, in aggregate numbers, to about 240,000,000 of souls, have constructed and brought into operation a length of railway which, if continuously laid, would exactly surround this planet, and have expended in the accomplishment of this work, an amount of capital of nearly £448,000,000 sterling.

It appears, also, that there is still in progress a length amounting to about sixty per cent of that which has actually been executed; so that, when the whole shall have been completed, we shall have an entire extent of about 40,000 miles of railway, upon which a capital of £700,000,000 sterling will have been expended.

The gross expenditure made within twenty years being £448,000,000, is at the average annual rate of £22,400,000; but as the chief part of this has been expended within the last thirteen or fourteen years, the actual annual expenditure in this period could not have been short of from £27,000,000 to £28,000,000.

The most remarkable feature about this astounding phenomenon, is the proportion in which the expenditure of this enormous capital is distributed among the different countries above named—It appears from the above results that 57 per cent. of the whole amount is expended in the United Kingdom, while only 15 per cent of it has been expended in the Germanic States, an equal amount in the United States, and 10 per cent in France, insignificant fractions being appropriated to the other States.

But it must be remembered that the expenditure of British capital in these enterprises has not been confined to the United Kingdom. No inconsiderable share of the capital absorbed in foreign railways, not excepting those of the United States, has been derived from this country, and we shall certainly not exaggerate its amount if we assume that 70 per cent of the total capital expended upon the railways of the world has been supplied from the

accumulations of British industry.—Thus it would appear that within twenty years England has not only paid £250,000,000 for the construction of her own railways, but has contributed somewhere about £50,000,000 to the construction of railways elsewhere.

The net profits realised by the railways in general may be taken at the average amount of 3½ per cent on the cost of construction and equipment. It follows, therefore, that supposing these annual profits to be re-invested with equal advantage as they become receivable, the capital sunk in the railways of the world, prodigious as it is in amount and small as is the net profit realised upon it, would be reproduced in the short period of twenty years. and even without such re-investment, and without the influence of compound interest, it would be replaced by the mere passive accumulation of dividends in thirty years.

On comparing the distribution of railway capital with that of population, it appears that for every 100 individuals of the population, the capital expended in railways is as follows:—

United Kingdom.....	£803
United States.....	277
Belgium.....	221
Germanic States.....	166
France.....	138
Italy.....	6
Russia.....	5

It follows, therefore, that in proportion to its population, the capital expended on railways in the United Kingdom is more than three times the amount expended in the United States and about five times the amount expended in Belgium.

By a comparison of the length of railway open with the population, we find the following results:

LENGTH OF RAILWAY PER MILLION OF POPULATION.	
United States.....	428 miles.
United Kingdom.....	250 "
Germanic States.....	116 "
Belgium.....	123 "
France.....	51 "
Russia.....	3.7 "
Italy.....	3.6 "

It will be observed that while the total length of railway in operation in the United States exceeded the length open in the United Kingdom in the ratio of 103 to 70, the capital invested in the English railways exceeds that invested in the United States in the ratio of 125 to 33.

The comparative cost of construction and stock per mile in countries where railways to any considerable extent have been established, is as follows:—

COST PER MILE FOR CONSTRUCTION STOCK.	
United Kingdom	£35,700
France	26,800
Belgium	18,000
Germanic States	12,500
United States	6,500

Thus it appears that the average cost per mile of the British railways, has been one-third more than the French, twice that of Belgium, three times that of the Germanic, and nearly six times that of the American.

Owing to the want of reliable general data, we are unable to supply an approximate estimate of the average receipts on the American railways.

The following table exhibits an approximation of the average length of railways under traffic, the gross receipts, and the receipts per mile, during 1850, in the countries in Europe in which this system of locomotion has been, to any considerable extent, established:—

	Mile under traffic.	Total receipts.	Receipts per mile.
United Kingdom.....	6,400	£12,755,000	£1,990
Germanic States.....	5,342	5,893,000	1,100
France.....	1,764	3,776,000	2,130
Belgium.....	532	891,000	1,670
	<u>14,038</u>	<u>£23,315,000</u>	<u>£1,689</u>

By comparing these receipts with the average receipts of past years, it appears that, since 1848, the receipts per mile on the British railways have decreased from £2,744 to £1,980, being 25 per cent; while the receipts on the French lines have

augmented, in the same interval, from $\pm 1,930$ to $\pm 2,130$, being 11 per cent; and those of the Germanic lines have increased in a still greater ratio.

The traffic returns have supplied the necessary data for a near approximation to the net profits on the capital invested, except in the case of the United States, where the financial results are extremely various and uncertain. A correspondent has charged us with understating both the financial value and the mechanical efficiency of the American railways. Nevertheless, we see no reason either to modify our estimates, or to retract the opinions we have expressed. It is quite true that some lines are solidly constructed, and some railways yield 10 or 12 per cent dividends. Nothing in what we have stated is at variance with this, but when we come to spread these high dividends of a few lines over 10,000 miles of railway, the result is greatly modified. It appears from the reports obtained by Dr. Lardner, for 1,160 miles of the most active and profitable railways in the States, that the net profit on the capital was 8.6 per cent, but a large proportion of the railroads open returned no dividend at all, while a great number of them made small dividends. (*Railway Economy*, p. 408.) It may, perhaps, therefore, be assumed that the American lines, taken one with another, do not yield a net profit of more than one-half that produced by the 1,160 miles of railway, the reports of which are given by Dr. Lardner.

In 1848, the expenses on the Belgium and French lines amounted to 63 per cent of the receipts. Since that time the receipts on the Belgium lines have been stationary, but the French have been increased about 11 per cent. It is probable, therefore, that the proportion of expenses to receipts has continued unchanged in the former case, and is somewhat diminished in the latter.

On the Germanic lines the average expenses, as we stated in our recent article on this subject, appeared from returns obtained from 3,000 miles of railway under traffic, to amount to 48 per cent of the receipts. Since the epoch of the returns to which we then referred, the receipts per mile have increased from £788 to £1,100, being nearly 50 per cent, notwithstanding the greatly augmented length of railway open. This has had, of course, a most favorable effect on the profits, and we may fairly assume that a considerable decrease has taken place in the ratio of the working expenses to the receipts.

To approximate, therefore, to the average profits on the capital invested, we shall assume that the working expenses are 45 per cent of the receipts in the United Kingdom, 63 per cent in Belgium, 60 per cent in France, and 40 per cent in the Germanic States. By comparing the profits arising from the mileage receipts, above stated, with the cost of construction and equipment per mile, we shall obtain the following estimate of the average profits and capital:

	<i>Per Cent of Capital.</i>		
	Receipts.	Expenses.	Profits.
United Kingdom.....	5.57	2.51	3.06
United States.....	—	—	4.30
Belgium.....	9.30	5.86	3.44
France.....	7.95	4.77	3.18
Germanic States.....	8.80	3.52	5.28

The estimates here given of the profits of the Germanic lines will be found to be higher than that given in our former article, which referred to a preceding epoch. Since writing that article, we have obtained returns of the traffic to the commencement of the present year, which show the large increase above stated.

In the case of the United States the above estimate must be received as a very rough approximation, which, however, we consider not to be under the truth.

It appears from the above table that the average profits on capital invested in the railways of the United Kingdom are lower than in any other country where railways have been constructed and brought into operation.

The following are the average tariffs exacted per passenger per mile:—

United Kingdom.....	54d.
United States.....	1.47d.

Belgium.....	0.80d.
France.....	1.03d.
German States.....	0.93d.

It appears that of the actual number of passengers, booked, 47 per cent are third-class passengers in England, 65 per cent in Belgium, 68 per cent in France, and 74 per cent in the Germanic States, while 14 per cent of the passengers are first-class in the United Kingdom, 11 per cent in Belgium, 7 per cent in France, and 3½ per cent in the Germanic States. There is no distinction of classes in the United States.

The number of engines which upon an average pass daily over every mile of railway is—in England 20, in Belgium 18, and in France 14.

The average distance travelled by each passenger booked is—in England, 15½ miles; in the United States, 18 1-5 miles; in Belgium, 22 6-10 miles; in France, 25 miles; and in the Germanic States 19 6-10 miles.

It appears from the preceding calculations that during the past year twenty-three millions and one-third sterling have been expended on locomotion by railway in these countries, of which more than the half has been expended within the small compass of our own islands.

Of this amount, about 60 per cent has been expended on personal locomotion, and forty per cent on the transport of goods of every denomination.

The movement of the locomotive engine in executing this traffic has been as follows:—

	Miles run by engines.
United Kingdom.....	40,162,000
Germanic States.....	23,572,000
France.....	10,041,000
Belgium.....	4,540,000

Total distance travelled by locomotive engines in 1850..... 78,315,000

The engine therefore moved over 78,000,000 miles within the year, being at the average rate of 215,540 miles per day, of more than half of which prodigious amount of locomotion this kingdom was the theatre.

In the performance of this work, the total quantity of coal consumed was a million and three-quarters of tons—a quantity whose cubical bulk would fill a space greater by one half than the Crystal Palace.

This movement being shared between passengers and goods in the ratio above indicated, we find that the distances moved over by the passengers and goods trains respectively, were:—

	Miles.
Distance travelled by passenger trains ..	31,000 000
" " goods " ..	31,000 000

Since each passenger car transported on an average 70 passengers, and each goods train 60 tons, it follows that the locomotion of persons within the year was equivalent to 3,300,000,000 persons carried one mile, and the transport of goods to 1,860,000,000 tons transported one mile. More than one-half of this vast social and commercial movement was limited to the area of the United Kingdom.—The number of locomotive engines employed in executing this movement was about 5,000, of which 2,436 were employed on the British railways, and about 3,700 were constructed in England.

Ohio,

Wilmington and Zanesville Railroad.—The Wilmington Republican speaks of the advertised letting on this road on the 17th as a *probability*—we had supposed it a certainty—and adds, if let, there will, before winter sets in, be one thousand hands at work on the line. The contingencies on which the letting is set down as only probable are, first, that they obtain the right of way, some of which has not been obtained; and second, an increased subscription to the stock required to make the Fairfield county subscription available. This the counties along the line should fill up at once. The officers appeal to the people for this aid, and they ought to receive it and be cheered onward in this great work.

From the London Times, October 20.
Relation of Railroads to the Great Exhibition.

One of the most wonderful facts of the great London Exhibition is the mode in which its visitors came to it. How did they all get there? The total number of visits was 6,201,536, and supposing that on the average each person went twice, there were more than three million visitors. The arrivals from the continent during the whole period of the Exhibition did not exceed, it is said, 70,000; and it also said there were not more than 4,000 names entered on the American visitors book; but of our own people a very fair proportion came from the manufacturing districts in the midland and northern counties, and other still more distant parts of the empire. Now, how did they come? Had it been proposed thirty years ago, or even twenty-five years ago, to get up an Exhibition in London, on the speculation that three million persons would come up to it, and a half a million of money would be taken at the doors, the most practical men of the day would have laughed the proposition to scorn. When it was rumored during the struggle on the Reform bill that fifty thousand men from Birmingham were about to present a petition in person, a great authority asked, "Where will they find shoes?" Everybody must remember what a difficulty it was to move a few score persons a few score miles in that age of stage-coaches, wagons and canal-boats. When a manufacturer brought a hundred men as many miles across a country it was a thing to be remembered, a sort of *Élie migration*; and the annual concourse of strangers described by our school-books at the great fair at Leipzig almost exceeded belief, though hardly amounting to one dull day at the Exhibition. Thirty years ago we doubt if there were ten coaches a day from Manchester to London, even including three routes; and as the stage-coaches only took fifteen passengers, and the mails only nine, the existing capabilities did not exceed one thousand through passengers a week. The actual number fell very far short. The capabilities of all the other great roads were very much less.—What, then, would have been thought, in those days, of a scheme to bring up three millions of people to town, within twenty-three weeks, from an average distance of a hundred miles? As the great stream did not set in till the first week of June, the average weekly arrivals of provincial visitors from that day was about a hundred thousand. Thirty years ago we doubt whether all the public conveyances centering in the metropolis were capable of a tenth of that number. It is evident, then, that the Exhibition would have been impossible in those days; and Prince Albert, Mr. Cole, Mr. Paxton, and Messrs. Henderson and Cox, would have been thought very proper subjects for Bedlam.

Railroads have literally paved the way for the exhibition. The artisans of Birmingham have achieved their threatened march to the metropolis on shoes of iron; and, as it happens, they are by no means the most remote or the most numerous of our visitors. There have been times in history, and those not very remote, when the roads and conveyances, the beasts of burden and the shipping of a country, were seldom surveyed and summed up, except for the purpose of calculating how many men could be conveyed in a given time to the work of destruction. Would the roads bear the passage of heavy artillery? Was there forage for cavalry and wagon horses? Were the rivers fordable, or did there exist the materials for temporary bridges? A Cæsar or Napoleon had a wonderful faculty for mastering the physical resources of a country with a view to that great exhibition of a pitched battle. We will not venture to say how many an embryo Napoleon is turning an evil eye on the rail, and calculating its capacity for military traffic, but hitherto its mission has been happily peaceful. How much more may be done in way of peace—how far what has been done this year may be repeated every year—how far the railway companies may now be enabled to lower their fares to meet a larger traffic—and how far it may be the interest of the metropolitan railway companies to provide, at their own expense, objects of attraction in the metropolis, are among the great questions suggested by the marvellous success of this experiment. Next to

the Exhibition itself, and the numbers brought to it by the railways, the next most striking fact of the year is the extraordinary profit that has flowed into their exhausted exchequers.

Prior to the opening of the Exhibition the increase in the traffic of the eight metropolitan lines over the corresponding period of last year amounted to £156,037, or 9.05 per cent. The increase in the other lines of railway in the United Kingdom up to that date amounted to £305,904, or 14.30 per cent. During twenty-three weeks of the Exhibition, a very great change took place in these proportions, for, instead of the traffic on the metropolitan lines being only 9 per cent., as at the commencement of the Exhibition, it gradually rose to 28 per cent., while the traffic on the other lines of the United Kingdom, which was 14.30 at the commencement, gradually receded to 8.42 per cent.—The total increase of the railways of the United Kingdom for the seventeen weeks, ending May 3d, amounted to £461,941, and for the twenty-three weeks, ending October 11, to £1,107,180; of which £821,863 was the increase on the metropolitan lines, leaving but £285,317 for the increase of the other lines. Had the rate of increase during the first seventeen weeks of the year continued during the twenty-three weeks of the Exhibition, the increase for that period would have been £264,380, which, deducted from £821,863, the actual increase as above stated, leaves £557,483 as the extra receipts from the Exhibition as compared with those of the corresponding period of 1850. It thus appears that immense as have been the receipts of the Exhibition itself, the receipts of the eight metropolitan lines from the same source have been greater. Nay, it is evident that it would have answered their purpose to defray all the expenses of the Exhibition, and hand over the whole of the £505,000 received for admission, &c., to the Royal Commissioners, to be applied as they please. If this suggestion is too late for this year, it is in good time for another, and for many more yet to come.—Notwithstanding the great reduction of fares made by all the railways to meet the general class of visitors, that reduction may be carried still further, or rather the accommodation given for the same fares may be greatly increased, and yet leave a handsome profit to the companies. Further, we beg to suggest, whether it will not answer the purpose of the metropolitan railways to contribute towards maintaining periodical and even permanent attractions of the same sort; such, for example, as would be implied in the notion of a winter garden used occasionally for entertainments and exhibitions. Of course it would be ridiculous to expect that so great an occasion as that we have witnessed could be sustained; but something on a less scale, and varying from year to year, might answer the purpose.

The total increase of £821,863 for the twenty-three weeks ending October 11, is divided among the metropolitan lines in the following proportions: The Eastern Counties, £18,150; Great Western, £162,723; Great Northern, £176,537; London and Northwestern, £259,010; London and Blackwall, £7,249; London, Brighton and South Coast, £29,631; South-western, £87,068; South-eastern, £81,596. Though a considerable part of this increase has been absorbed in additional expenses, still there can be no doubt that the railways had received the lion's share of the profits. Nor has the Exhibition traffic been accompanied with a positive loss of traffic in other directions, except in a few special instances. The aggregate traffic of all the railways of the United Kingdom from January 1 to October 11 is greater than for the same period of last year, by no less an amount than £1,581,604, and nearly three millions greater than that for the same period of 1849. To what extent the expenditure of the Exhibition visitors has been withdrawn from other objects it is difficult to say; but it is certain, from the returns of the Board of Trade and the revenue tables, that the general consumption of imports and excisable articles has been greater than usual this year. It is also satisfactory to know, as we are informed from various quarters, that the money spent on the Exhibition by its provincial visitors has been generally rather saved beforehand than borrowed at the time; so that we need not apprehend a reaction such as usually follows an improvident expenditure.

Virginia.

Northwestern Railroad.—we copy the following from the pamphlet just issued by the above company, for the purpose of showing its present condition, and the relative object their road bears to other lines:—

The Northwestern Virginia railroad company was chartered by the Legislature of Virginia on the 14th of February, 1851, "for the purpose of constructing a railroad from Parkersburg in the county of Wood, to intersect the line of the Baltimore and Ohio railroad, at some eligible and convenient point at or near the mouth of Three Fork in the county of Taylor." Its capital stock, as fixed by the charter, is \$1,500,000, but may be increased at the pleasure of the company; and it has power to borrow money for the completion of its work, to any amount it may deem proper, and to pledge its property for the payment.

The incorporation was to take effect when three thousand shares, of fifty dollars each, were subscribed. Books were opened in Virginia in July last, when 3,326 shares were taken at Parkersburg, 46 at Clarksburg and 75 at Weston, making an aggregate of 3,477 shares, or \$172,350. On the 2d of August, the company was duly organized by the election of a President and five Directors. The board immediately appointed Benjamin H. Latrobe, Esq., the experienced Chief Engineer of the Baltimore and Ohio company, to the same office in the new company, and directed him to organize, as soon as possible, at least three engineering parties, and cause a thorough examination of the country lying between the termini fixed by the charter to be made, with a view of determining the best and most practicable route for a railroad between these points. Surveys have accordingly been in progress since the beginning of September, and, so far as they have progressed, they indicate that the country is more favorable than had been anticipated.

The mouth of Three Fork creek is made a point in the act authorising the extension of the Baltimore and Ohio railroad to Wheeling. It lies nearly due east of Parkersburg, 86 miles distant by an air line, and on the direct line from that place to Baltimore. The B. and O. railroad will be opened to the mouth of Three Fork next spring, and to Wheeling within one year thereafter. Whatever advantages may be derived from the extension to Wheeling, they are not those which Baltimore has been so long seeking and expecting, and are besides in danger of being greatly diminished by the new route projected through Pennsylvania. Cincinnati is now, and is destined to remain, the great commercial metropolis of the west; and to that point all the western improvements converge. It is a connection with that city, for which Philadelphia, New York and even Boston, are striving; and Baltimore has not failed to perceive, that her peculiar interests call for similar exertions, with stronger assurances of complete success.

Parkersburg lies very nearly on the direct line between the mouth of Three Fork creek and Cincinnati. Any divergence from this line must necessarily increase the distance to be travelled between its extremes; and as it is now ascertained that railroads, leading from Parkersburg to the point named, can be constructed without any unusual deviation from their true line of direction, it follows, that the route from Three Fork to Parkersburg and thence to Cincinnati, will afford to Baltimore the shortest possible connection with that city.

The advocates of the proposed routes from Philadelphia to Cincinnati have failed to show, that there is any shorter practicable route between those cities than by way of Baltimore, and Parkersburg. Should such a route hereafter be discovered, Cincinnati and the great valley of the Ohio will still be many miles nearer to tide water at Baltimore than to any of her commercial rivals. This gives to Baltimore an immense advantage in competing for the trade of the Western States. Their productions are bulky, and whether destined to supply the consumption of foreign countries, or of the Atlantic States, all experience assures us they will seek the shortest avenue to tidewater, as the cost of transportation to their eventual destination will thereby be greatly diminished. Baltimore will not

only become the port whence these commodities will be shipped, but also the principal market for their sale. With these advantages so palpably within our grasp, and in view of the active exertions of her competitors for this great trade, Baltimore will act a suicidal part if she neglects, or even delays, to complete her connection with the great west.

Cars will be running between Cincinnati and Hillsborough, a distance of sixty miles, on the route to Parkersburg, in December next; and an additional twenty miles has recently been put under contract. This leaves 95 miles west of Parkersburg, now being surveyed under a resolution of the Hillsborough and Cincinnati railroad company, directing their engineer "to make the necessary explorations and surveys for the determination and ultimate location of a line of railway, upon the shortest and most practicable possible route from Hillsborough to Belpre, opposite Parkersburg." A prompt and liberal subscription by the city and citizens of Baltimore to the stock of the Northwestern road, by giving assurance of its speedy completion, will tend to render certain, the early, if not contemporaneous, completion of the road west of the Ohio.

To show more succinctly the advantages of the route here proposed, the railroad distances between the several points named, derived from the most reliable sources, are given in tabular form:

From Baltimore to Cumberland, [completed].....	179 Miles.
From Cumberland to Three Fork, [nearly completed].....	101 "
From Three Fork to Parkersburg, not exceeding.....	115 "
From Parkersburg to Hillsborough, [20 miles under contract].....	115 "
From Hillsborough to Cincinnati, [23 miles completed, 38 nearly].....	60 "
Distance from tide water at Baltimore to Cincinnati.....	570 "
Deduct for Knobly cut-off, near Cumberland.....	10 "
And there is left.....	560 "
Add railroad distance from Philadelphia to Baltimore.....	98 "
Distance from Philadelphia to Cincinnati by this route.....	658 "

The following tables show the distances between the same points by the Pennsylvania and Hempfield railroads, and different routes west of the Ohio:—

Via Ohio Central Railroad.

From Philadelphia to Greensburg.....	325 Miles
From Greensburg to Wheeling.....	83 "
From Wheeling to Cincinnati.....	263 "
Total.....	671 "

Via Marietta and Cincinnati Railroad.

From Philadelphia to Wheeling, as above.....	408 Miles.
From Wheeling to Marietta.....	80 "
From Marietta to Cincinnati.....	199 "
Total.....	687 "

These statements show a difference in favor of the Baltimore, Parkersburg and Hillsboro route, of 13 miles in the one case, and 29 miles in the other, and they also show, what is still more important, that Cincinnati is nearer to Baltimore than Philadelphia by 98, 111 and 127 miles, according to the route selected. The number of miles of railroad yet to be constructed to complete the first route, does not exceed, if it equals, that of either of the others.

The position of Parkersburg also presents some peculiar advantages. It is some 40 miles west and 50 south of Wheeling, and, as before remarked, very nearly on the direct line from Three Fork to Cincinnati; and thus while its railroad distance from Baltimore exceeds that of Wheeling by not more than 15 miles, it is, as shown by the above table, 88 miles nearer to Cincinnati, and by the roads usually traveled, about equidistant from Zanesville and 20 miles nearer to Columbus. It is 96

miles lower down the river than Wheeling, and its railroad distance from Baltimore is 13 miles less than from Philadelphia to Wheeling; and consequently passengers and merchandise, using the river in passing to or from the seaboard, save at least 7 hours in descending and 10 hours in ascending by embarking or landing at Parkersburg, when the navigation is impeded by low water or ice. In other words, passengers and merchandise, in leaving Parkersburg by railroad, can be at Cumberland before they can reach Wheeling by steamboat. The disparity is greatly increased when the water is low, for not only are the obstructions generally more formidable above than below Parkersburg, but there are, of course, more of them to be encountered by those who take or leave the river at Wheeling; while the difference in latitude diminishes the delays caused by fast or floating ice. It is evident, that under any circumstances, the river will continue to be used for the transportation of heavy goods. Parkersburg has one of the best and most commodious harbors on the Ohio, and steamboats can easily make two trips a week between there and Cincinnati, stopping as usual at the intermediate ports.

The northwestern Virginia railroad, being in fact the extension of an established road between great commercial marts, offers to those disposed to subscribe to its stock, the certainty of early dividends; and it may be added with equal confidence, that its dividends will, from the beginning, exceed the legal rate of interest. The reinvested surplus of the Baltimore and Ohio company for the year ending October 1st, 1850, was equal to nearly eight and a half per cent. upon the cost of the road east of Cumberland, including the reconstruction and improvements east of Harper's Ferry. Can it be doubted that the receipts of the new road will be at least equal, mile for mile? The cost of the former was nearly \$49,000 per mile, while that of the latter is estimated at only \$25,000, and owing to the cheapness of provisions and materials in the country through which it will be located, may fall below this estimate; and thus, with equal receipts per mile, its dividends will be declared upon a cost per mile, less by one-half than that of the road with which it is compared.

It is hardly necessary to remind the citizens of Baltimore of the fact, that the completion of the proposed extension must necessarily greatly increase the revenues of the Baltimore and Ohio company. The city, in its corporate capacity, being a principal stockholder in that company, is called on by considerations of pecuniary advantage, if there are no others, to aid in the extension. Her revenues from that source must be increased to an amount equal to the interest on a liberal subscription to the stock of the new company; and the surplus revenue from both must be sufficient rapidly to absorb the debt created for the purpose, leaving her afterwards in the receipt of a permanent revenue to be applied to the reduction of her taxes, or the aid of other works in which she has an interest. But this is among the least of the benefits she will derive from a line of railroad to Cincinnati. Increased population and business, with a corresponding rise in the price of property, and advantages, of which what she has already done gives her the most reliable assurance.

As to the restrictions found in the seventh section of the charter, it is sufficient to observe, that it is now morally certain the Baltimore and Ohio railroad will be completed to Wheeling, in the manner prescribed, at least twelve months before the northwestern road could be put in operation were the funds for its construction now in the hands of the company. The so-called restrictions are therefore a mere nullity.

Ohio.

Junction Railroad.—The Junction railroad company has made a contract for the entire construction of their road from Sandusky east forty-two miles, to be completed by the 1st of January, 1853. This, with the distance already under contract, completes the connection with the Cleveland and Columbus road at Olmstead. The line west from Sandusky to Port Clinton, including the transit of the Bay, is ready for letting. Beyond Port Clinton the line will be ready as soon as the point on the Maumee river shall be fixed upon.

Railroad Routes through Southern Ohio.

We copy the following from the Scioto Gazette, in reference to the rival routes through southern Ohio. The Gazette we may here state, is the organ of the Marietta and Cincinnati railroad company. The article we understand is in reply to that part of the late report of the Baltimore and Ohio railroad, which refers to its western connections, and favors the idea of the extension of the Hillsboro railroad to the Ohio at Belpre. The Gazette claims that the Marietta and Cincinnati railroad occupies the only practicable line. It says:—

1. The route pursued by the Marietta and Cincinnati railroad, from the Queen city, across southern Ohio, to the Ohio river, is the shortest and, in regard to cost, only practicable route that could be followed. The line hinted of by Mr. Swann, from Hillsborough, straight to Belpre, would pass over a very rough hilly country, fully as difficult as that of western Massachusetts, the whole distance, save about 20 miles. The line of the M. & C. company, through Chillicothe, has thirty miles more of plain country to pass over before it strikes the hill region east of the Scioto;—that is, in the same distance, the Chillicothe route has the level plain for thirty miles, where the imaginary rival route would have to "cut" diagonally across barren hills.

2. The M. & C. road will be under contract, from Marietta to the Little Miami road by May next. It is now under contract from the Mineral Region, to the western limit just indicated, [except a few miles on the western extremity;]—and will begin to pay so soon as the iron is down from Chillicothe westward. In order to put any other line on as good a footing, in regard to eastern connections, it will be necessary to begin anew, on over 100 miles of route, get the right of way, raise the money, tunnel hills, bridge streams, fill up valleys which do not exist on the M. & C. line—in short, attempt a new, difficult and expensive enterprise.

3. The present route of the M. & C. line is, within less than five miles, as favorable for the Baltimore connexion, as would be the originally contemplated route to Belpre; and immensely more favorable in point of gradients and equated distance, than any "straight" route from Cincinnati to the Parkersburg terminus that could be made south of us. It is, therefore, both idle and impolitic for the Baltimoreans to talk about such rival lines, or to foment a feeling of rivalry among the friends of railroads in this part of the country. While the present route of the Marietta and Cincinnati company, and the acceptance of the Marietta subscriptions holds forth the prospect of early reaching Wheeling, and connecting, through that city, with Philadelphia;—at the same time, as we are firmly convinced, it opens the best and earliest and only feasible route for Baltimore to connect with Cincinnati and the south west. If the north western Va. railroad be constructed to Parkersburg,—and we hope and trust it may—an addition of ten miles on the western end will interlock it with the Marietta and Cincinnati line. Again by coming down Middle-Island creek, in Virginia, the Baltimore interest may make even a cheaper, straighter and better connexion with the west than through Parkersburg. Thirdly, Baltimore will connect with the Marietta and Cincinnati, as well as the Ohio lines, at Wheeling.

Coal in the Valley of Virginia.

The Staunton Messenger states that coal "of the best quality" has been discovered in Augusta county, "on the north fork of North river, about six miles north of Mt. Solon." The vein is from one and a half to three feet thick, and dips to the northwest at an angle of about 45 degrees. It appears to have been unheaved with the hill or mountain in which it is found. The vein or stratum is imbedded between large masses of rock, which renders it somewhat difficult and expensive to work, but no shaft is necessary to reach the coal, as it crops out of the hill side. The indications are that the supply is inexhaustible—the field seemingly extending over a large district of territory.

Finances of Kentucky.

In the message of Governor Powell, of Kentucky, the following items concerning the financial condition of the State are given:—

The actual and supposed receipts of the sinking fund, for the year ending Jan. 1, 1852, are..... \$592,416 47
The actual and estimated amount of disbursements for the same period, are..... 615,025 31

Estimated deficit Jan. 1, 1852..... \$22,608 84
" " Jan. 1, 1853..... 22,572 34
" " Jan. 1, 1854..... 21,335 84

The following is a statement of the public debt of this State:—

There is now due of the public debt. \$445 00
Of bonds bearing 5 per cent interest there will fall due in 14 years the sum of.... \$221,000 00
In 15 years the sum of. 100,000 00
In 20 years the sum of. 165,000 00
In 32 years the sum of. 100,000 00

Total amount of 5 per cent bonds..... \$586,000 00

Of bonds bearing 6 per cent interest, there will fall due in 17 years, the sum of..... \$1,250,000 00

In 19 y'rs the sum of. 447,500 00

In 20 and 21 years the sum of..... 1,738,000 00

In 23 years the sum of..... 150,000 00

In 25 and 27 years, redeemable after 15 years, at the pleasure of the State..... 69,000 00

In 30 years, Southern bank bonds... 150,000 00

The Cradock fund, 6 per cent..... 6,592 81

Total amount of 6 per cent bonds. 3,811,092 81

Amount of bonds held by the Board of Education..... 1,326,770 01

Total amount of public debt.... \$5,724,307 82

Of the school bonds the sum of \$1,259,270 01 bears 5 per cent interest, and the sum of \$67,500, 6 per cent.

To pay this debt the State has the following resources, if they could be applied to that purpose:—\$939,000 stock in the Bank of Kentucky; \$290,000 of stock in the Northern Bank of Kentucky; \$40,600 of stock in the Bank of Louisville, and \$150,000 of stock in the Southern Bank of Kentucky; to which may be added \$150,000 of stock in the Lexington and Frankfort railroad, and \$76,420 25 bonds on the Louisville and Frankfort railroad company—making in all the sum of \$1,646,020 25. The State has, in addition, \$2,694,239 93 stock in turnpike roads—supposed to be worth about twenty-five or thirty cents on the dollar—besides her investments in rivers, etc.

Railroad Convention.

A convention of counties and corporations favorable to the extension of the Alexandria and Manassas Gap railroad, from Strasburg, in Shenandoah county, Virginia, to intersect the Baltimore and Ohio railroad, at Paddytown, in Hampshire county, Virginia, will be held at Romney, on Tuesday, November 25th. A number of counties and corporations interested have already made provisions to send proper delegations to this convention. The several coal and iron companies of Allegheny county, and all other corporations of that county interested in the object of that convention, are earnestly invited to send representatives to the same.

Reading Railroad.

The intelligent correspondent of the Philadelphia Ledger, "Observer," in a letter from Reading, speaking of the immense business on the railroad between Pottsville and Philadelphia, says:—

"The Reading railroad employs, in all, about fifteen hundred persons, at salaries and wages respectively of about \$60 000 a month, or \$720,000 per annum. It consumes materials in value of \$20,000 a month, or about \$5,000 a week, causing in all (consumption of materials, salaries, and wages,) an annual outlay of \$840,000, all expended on its own ground. Some of the items of its manufacture are particularly interesting and striking. Thus, it manufactures thirty wheels a day to perpetuate its machinery and cars, and requires annually from seven to eight hundred tons of new rails, for repairs only. It consumes daily 450 cords of wood, and evaporates in the same space of time half a million gallons of water.

Yet, with all the expenses of the road, the employment of so many hands, the consumption of fuel, labor, repairs, etc., the cost of transportation falls yet short of 62 cents per ton, such is the enormous quantity of coal brought down every year for consumption. Indeed, the Reading railroad transports more tons of merchandise, and receives more per mile than any railroad in the world, and exceeds, in this respect, both the Great Western and the London and Birmingham railroads in England."

Hempfield Railroad.

The Engineer of this road, Charles Ellet, Jr., reports to the directors, that surveys of three several routes have been completed, viz:—

1. By the way of Wheeling Creek, Washington, Mingo Creek, Monongahela City, and Big Sewickley..... 77 7-10 miles.
2. By the way of Wheeling Creek, Washington, Peter's Creek, Elizabethtown, and Little Sewickley..... 78 1-10 miles.
3. By the way of Wheeling Creek, Washington, the North Fork of Pigeon Creek, Maple Creek, and Belvern..... 78 7-10 miles.

The surveys commence at the Central railroad company's depot at Greensburg, and terminate at the eastern abutment of the Wheeling bridge.

The maximum grade encountered is 66 feet to the mile.

The report recommends the immediate commencement of work upon the first division, from Wheeling to Washington, and advises, that the second division, from Washington to Monongahela river, be placed under contract, as soon as \$150,000 more shall be subscribed to the stock of the company, so as to bring the amount up to \$900,000.

In pursuance with the above recommendation, the board of directors at a meeting held on the 5th instant, adopted the following resolutions:—

Resolved, That the President and Chief Engineer be authorized to contract for the grading of the first division of the road, from Wheeling to Washington, as soon as the plans and estimates can be prepared.

Resolved, That the Chief Engineer prepare for grading the second division from Washington to the Monongahela river, as soon as additional stock to the amount of \$150,000 can be raised and the route determined; and that the President and Chief Engineer be authorized to contract for the heavy jobs on that division so soon as the additional subscription of \$150,000 be procured.

Resolved, That the third division, from the Monongahela river to Greensburg, will be placed under contract so soon as the requisite additional stock can be procured.

Virginia.

Central Railroad.—The annual meeting of this company was held at Louisa Court House on Saturday, the 8th inst. The president's report stated that the receipts for transportation for the year ending 30th September, 1851, were \$143,801 64, being an increase over last year of \$52,722 81. The profits being equal to 7 per cent. of the capital invested, which have been applied to construction of new road, furnishing the same with motive power, etc.

The president's salary was raised from \$1,500 to \$2,000. John H. Timberlake and David Anderson, of Richmond, were elected directors. The Charlottesville Jeffersonian says:

The road to Woodville, eight miles west of Charlottesville, the report says, will certainly be done during the month of November.

The tunnel at Rockfish Gap is prosecuted with unabated energy and industry; and from the improved character of the rock, it is believed by the contractors that the whole work may be completed in three years from this time.

Indiana.

Terre Haute Road.—Since the commencement of laying the rails on the Terre Haute and Indianapolis road, we have, from time to time, advised our readers of the progress still made in the work. Everything has gone on well; the work on both ends is fast advancing to a close. Only about fifteen miles of the road, we understand, separates the two advance parties of workmen—and of course that much only unfinished; and this distance shortening every day. The prospect now is that the road will be completed for use by the middle of December.

A new passenger car locomotive, called Vigo, is already at the depot in this place; and another or two every day expected. Splendid passenger cars have been built at Columbus, and will be on the road by the time it is finished. Thus we can almost now hear the whistle and bell, and the cry of "all aboard," as the cars steam away for Indianapolis.

We understand arrangements are being made to have the western mail, which now passes by the way of Louisville, immediately changed to this road, as soon as completed, and carried by way of Terre Haute to St. Louis. It is contemplated by the present stage company immediately on the completion of the road, to take off their stages and stock now on the line between Terre Haute and Indianapolis, and place the same west, on the road to St. Louis; thereby doubling the daily line between Terre Haute and St. Louis. These arrangements will give great facilities in travelling, besides a fresh impulse to business.

In connection with this change of mails and increase of business, we suppose it will become necessary for the department at Washington to convert the Terre Haute office into a distributing office; a change which has long been desirable here—and which must now become indispensable.—*Terre Haute Courier.*

Indiana.

Ohio and Indiana Railroad.—The engineers have completed the survey of this work. Several different lines have been run through our streets, but as yet the location of the depot has not been determined. Estimates of the expense of the various routes will be prepared and submitted to the board of directors, who will then decide the question. In making this decision, we repeat the hope expressed by us last week, that the directors will look solely to the interests of the company, and the convenience of the general trade of the city, without any bias in favor of particular individual interests.

At the recent Ohio election a vote was taken in Van Wert, on the question of that county's subscribing \$50,000 to the stock of the company, and carried by a large majority.

Should the present stringency in the money market subside, so that the bonds of the company could be negotiated, we see no reason to doubt that the work may be put under contract this winter, or

early in the spring. We do not despair of being able to take a railroad trip to Philadelphia within three years from this time.—*Fort Wayne Sentinel.*

Ohio.

Steubenville and Indiana Railroad under contract.—We are requested to state that the entire road, from Steubenville to Newark, a distance of 116 miles, has been contracted for on the most advantageous terms to the company. The contracts embrace not only the graduation and masonry, but the superstructure and equipments of the road, inclusive of ten first class locomotives, ten first class passenger cars, and suitable trains of burthen cars. The necessary turnouts and the branch roads to Cadiz, New Philadelphia and Dresden are also provided for. The entire work from Steubenville to Newark is to be in complete and full operation in two years from the 1st of January next. The graduation, &c. of the first 28 miles has been let in sections to responsible and experienced workmen, some of whom have just completed heavy jobs on the Pennsylvania and Ohio road. The residue of the work, including the superstructure and equipments for the entire road, has been taken by Messrs. Dillee & Co., who are possessed of ample means and all necessary experience in railroad work, to ensure the fulfilment of their part of the undertaking. We congratulate the company, the public, and all parties concerned, on this auspicious result; for which they are doubtless mainly indebted to the ability and untiring industry of the able President of the company, D. Gilgore, Esq.—*Steubenville Herald.*

Cincinnati, Hamilton and Dayton Railway.—The Cincinnati, Hamilton and Dayton railway in an unfinished state was partially opened on the 20th of September. It has been run since that time in its unfinished condition, by two passenger trains a day. No freight train has yet been placed on the road, and there has been very little travel through from Sandusky. The business done on the line has been altogether local. The earnings of the road in this condition for the
Ten days in September were\$2,577 25
October.....16,838 84

Total, one month, and ten days.....\$19,176 11

This income is but an earnest of what the road will earn when in full operation, and it goes far to confirm the opinion heretofore expressed, that this road, when finished and put in complete operation, will be one of the very best paying roads in the United States.—*Cin. Gaz.*

Canada.

Another Railroad from the St. Lawrence to Lake Huron.—A project of building a railroad from Prescott, on the St. Lawrence, to Lake Huron, is attracting considerable attention in Canada. From Prescott to Georgian Bay, the distance is 270 miles. It is easy to see that such a road would shorten the distance very materially from Boston to the Lake Superior region, and the great Northwest; and its construction is likely to be aided by that city, and by the lines of railroad that would be brought into connection with the proposed road. Meetings have already been held in Prescott and Brookville, in Canada, in reference to the above project, and subscriptions are being raised for a survey of the route.

The Ogdensburg Sentinel expresses great confidence in the success of the measure. That paper says:—

"Passing, as it will, through the very garden of Canada, and connecting with Lake Huron, at a point nearly opposite the straits that unite that lake with Lakes Michigan and Superior, and saving an immense distance of travel and transportation from Michigan, Wisconsin, Illinois, and the Mississippi river, it will almost of necessity be the great thoroughfare for the Atlantic business of the immense region through which it passes, and with which it will be the shortest, quickest, and most commodious channel of communication.

Diving Vessels.

In our late sojourn in Paris, our attention was attracted to a diving apparatus worked on the river Seine, in front of the Institute. It is a new and happy modification of the diving-bell, invented by M. Cave, the eminent engineer, for the purpose of descending to the bottom of rivers, and carrying on works there with greater facility than by the ordinary diving-bell. On the front of a dredging vessel is placed a large chamber, made of sheet-iron, having the form of an elongated hemispherical cup, 22 feet nine inches in diameter, and 16 feet 3 inches in height. In the centre of the bottom of the vessel there is a large opening which communicates with the river, and in it is placed vertically a large cylinder of sheet-iron, open at either extremity, and which can, by means of grooves, be lowered to any depth that may be required. When it is desired to examine the bottom of the river, it suffices to lower the cylinder; and, by the aid of an air-pump, a large quantity of compressed air is forced into the chamber. The water by that means is expelled underneath the cylinder, until at length the bottom of the river is left dry. The workmen can then descend inside the cylinder, and proceed with the work without any difficulty.

For communicating from without with the chamber, there is provided an ante-chamber, for persons to go in and out without allowing the compressed air to escape from the inner chamber. The doors of the inner chamber are hermetically closed, by which means the loss of compressed air is small, and is easily replaced. For the purpose of opening the inner door, it is necessary to open a valve to allow a small quantity of air in the inner chamber to escape into the ante-room, to restore a balance and make the pressure the same on both sides of the door. And a similar contrivance is necessary in the outer door; but before the valve is opened in the outer door, care must be taken to close the inner door and valve. There is another contrivance for forming an air-tight connexion between the vertical cylinder before described and the chamber. This is effected by a flexible joint or tube made of leather; one end is fastened to the bottom of the chamber and the other to the top of the cylinder. This leather flexible tube allows some play in the cylinder, so as to adapt it to various depths of water or variations in the depths of the river. The compression of the air is very easily accomplished by the steam engine which usually accompanies dredging vessels. The engine works two air-pumps, which communicate by a pipe to the chamber, and supply compressed air at discretion; of course the density of the air must be in proportion to the depth of the water. It would appear that the workmen do not feel any particular difficulty in working in such an atmosphere; the only inconvenience in the augmentation of the density of the air is a slight pressure and noise in the ears. This vessel on the Seine is only an experimental one, to show that all descriptions of work can be performed under water with the greatest facility. M. Cave has already established two similar vessels for scouring the mud-banks of the Nile. The dimensions of them are much larger, the cylinders being 29 feet 3 in. by 19 feet 6 inches.—*London Architect.*

New London, Willimantic and Palmer Railroad.

At a meeting of the stockholders of this railroad at New London on the 12th instant, the annual report of the directors was presented, from which it appears that the cost of the road, up to this date, is \$1,450,000. The length of the road is 66 miles.—It was opened from New London to Willimantic, in November, 1849, to Stafford Springs, in March, 1850, and to Palmer, where it connects with the Western railroad, in September, 1850. The total receipts have amounted to \$167,400, and the expenses of working and repairs to \$86,200. Of this amount a part has been appropriated to the payment of loans, and interest on bonds, leaving a balance of earnings of \$15,718. The receipts of the last season exceeded those of the preceding season by 50 per cent. It is proposed to extend the road in this State in the ensuing year from Palmer through Belchertown to Amherst, and by the Ware river towards Barre.—*Daily Advertiser.*

State Debt of Georgia.

The message of Governor Towns is calculated to deceive the people of Georgia in regard to the amount of the State debt. It estimates the debt at \$1,424,722 22; but does not include in the estimate the liability of the State, on the account of the Central Bank. That liability, which will have to be met out of the Treasury, is \$371,000, and the assets of the bank are only estimated at \$100,000—leaving a balance of \$271,000. The Treasurer's report states the matter as follows:—

Due July 1st, 1853, at 6 per cent.....	\$10,000 00
Due Jan. 1st, 1858, ".....	22,222 22
Due July 1st, 1863, ".....	45,000 00
Due July 1st, 1863, ".....	25,000 00
Due July 1st, 1868, ".....	216,500 00
Due Sep. 1st, 1869, ".....	301,500 00
Due June 1st, 1870, ".....	202,750 00
Due July 1st, 1871, ".....	219,750 00
Due June 1st, 1872, ".....	130,250 00
Due Jan. 1st, 1873, ".....	170,750 00
Due Jan. 1st, 1873, ".....	41,000 00
Due May 1st, 1874, ".....	81,500 00
Due May 1st, 1874, ".....	183,500 00
Sterling bonds at 5 per cent.....	72,000 00
Central Bank liability.....	271,000 00

Aggregate actual debt.....\$1,995,722 22

The last item on account of the Central Bank, is not included in the Treasurer's report, but it is so clearly a liability of the State, that it ought to have been so reported.

To the above must be added the sum of \$168,542 18 for 4,200 tons of iron purchased for the State road without any authority by law by the engineer, with executive approbation. This claim, if assumed by the Legislature, will run up the State debt to \$2,164,264 40—being nearly one million larger than stated in the message.

Commerce of Charleston.

The direct trade of Charleston, S. C., has lately increased in an extraordinary degree, and promises to extend itself still further. The "News" of that city states that the receipts of the revenue at the custom house there, for the last three months, have averaged about \$100,000 per month, exclusive of the duties to be paid on goods which have gone into warehouse. The usual quarterly average receipts for duties at the places referred to, is said to have been \$100,000, exhibiting at this rate a quarterly increase of 200 per cent. This rapid and prodigious growth of the direct foreign commerce of Charleston will make it of more importance as an entrepot of trade with the section of country immediately related to it by railroad and other means of intercourse; and as its business operations and wealth are multiplied, so commercial connection with it will become more valuable.

Extension of the Ohio and Indiana Railroad Westward.

Last week we noticed the eastern connections of our railroad, not only with Pittsburg and Philadelphia, but also with Cleveland and Dunkirk, through the Columbus and Cleveland road, which it intersects at Crestline, 76 miles northwest of the last named city. As a matter of interest to the counties lying west of us, we may now refer to the proposed extension westward in the direction of Chicago, Ottawa, and the upper Mississippi, which we understand is the aim of the company, as the means can be provided for grading the road. For the intermediate country lying between the Wabash and Erie canal and the northern Indiana railroad, this will furnish the shortest and most natural route either to Philadelphia, New York, Pittsburg, or Cleveland. Fort Wayne, by railroad, is but 210½ miles, and Warsaw, but 260 miles from Cleveland. Taking Warsaw, therefore, as a central point in this intermediate district, the distance thence to Cleveland, [and the traveller cares not to strike the lake west of Cleveland,] by our railroad is about 28 miles less than by the proposed intersection with the southern Michigan road at Goshen. To the other prominent points in that section of the State, Plymouth, Rochester, Peru and Logansport, a like

saving distance is offered by intersecting our route at some point west of this. From Logansport to Cleveland the distance would be some 30 miles less by intersecting our road, even as far west as Warsaw, than by the connection with the Bellefontaine road at Andersonstown.—*Fort Wayne Times.*

American Railroad Journal.

Saturday, November 23, 1851.

Vermont

One of the most exciting topics before the Vermont Legislature, which has just adjourned, was the petition of the Atlantic and St. Lawrence railroad company for a further time in which to locate their line. It was originally contemplated to run up the Connecticut. Subsequently, surveys showed that a more favorable route could be obtained by following up one of the branches of the river, called the Nulhegan. The company wished to adopt the west branch of the latter stream, but as a doubt existed as to their right to bear so far to the west, they made a formal location on the east branch, to comply with the provisions of their charter. The time limited for the location having expired the company petitioned to have this extended; and as their wishes as to the route were well known, the real point that came up for discussion was, whether they should be allowed to locate on the west branch. The most formidable opposition came from the Passumpsic railroad, and the people of Derby and its vicinity. The former claimed that the route contended for, in equity, belonged to them, and that they wished to improve it, for the purpose of extending their road into Canada; the Derby people insisted that if the Atlantic and St. Lawrence railroad wished any further privileges, they should purchase them by being compelled to make a long detour for the convenience of the inhabitants of a particular section. These considerations were all overruled, and the petition was granted by a large majority.

The route of the Atlantic and St. Lawrence railroad is now definitely located, as is that of the St. Lawrence and Atlantic. A conference was recently held by these two companies, at which it was agreed that Island Pond, one of the head waters of Clyde river, should be their point of junction.—This point is about 13 miles south of the Canada lines. This distance is built and owned by the Canada company. The latter company were exceedingly desirous to have the junction fixed as agreed, for the purpose of connecting their line with the Passumpsic road, and so form a direct route to Boston. The Atlantic and St. Lawrence company favored the location, for the reason that it is upon the shortest and most convenient line to Rouse's Point, to which they contemplate opening a branch as soon as the main trunk shall be completed. Island Pond, therefore bids fair to become the most important place in Northern Vermont, being the point of junction of four important lines of railroad. It is about equi-distant from Portland and Montreal, and surrounded by a fertile country. As it will be the terminus of the above road, the necessary buildings to accommodate their wants, will, of themselves, constitute quite a town.

All disputed questions having thus been disposed of, the great line from Montreal to Portland will now be pushed forward with energy, and we expect in a year from this time to see the cars running from one city to the other, and in a year more from the city of Quebec to Montreal, Portland and Boston.

Peru and Indianapolis Railroad.

This road, as its name indicates, extends from the capital of the State to the Wabash canal, at Peru, a distance of 72 miles. It is looked upon as an important project in Indiana, from the fact that it opens the shortest outlet for the central part of the State, to New York. The Wabash canal has diverted the trade of all that section of country within reach of it, from the southern to the northern or lake route. New York is the commercial terminus of every line of internal communication in the United States, and will use the lake route in connection with the canals and railroads of the west, as soon as they are completed, as her means of intercourse with that great region. The northern route, as it is called, is the cheapest, most expeditious, and more favorable in every respect for the region named, than the river route by the way of New Orleans.

The distance from Toledo to Peru is 166 miles, and to Indianapolis 238. From the latter place, the lakes can be reached over the Peru road, by a much shorter route than any other. For this reason, the above road, when opened, must command the trade of central Indiana. A merchant at Indianapolis, having a quantity of produce to forward to, or wishing to order merchandise from, New York, would use the Peru road, as the shortest and cheapest route. What would be true of Indianapolis, would be equally so of all parts of the country within 30 or 40 miles of the town. Each projected road in Indiana is being constructed with a view to the accomplishment of certain objects.—The Terre Haute and Bellefontaine road will command the great stream of travel flowing east and west. The Madison and Jeffersonville roads open outlets to the Ohio, and southern markets. The Lafayette and Lawrenceburg roads will form an important part of the great through line between Cincinnati and Chicago. The Peru road will open an outlet north, and constitute the great channel of business communication between a large portion of Indiana and New York. On this ground, it occupies a prominent position among the roads of Indiana, and we believe it cannot fail to be one of the most productive. Its cost, we presume, will be much less than that of any other road.

Of the whole road, 22½ miles were opened in March last and is doing a remarkably fine business. The balance of the line is under contract, to be finished next season. The contract embraces all but machinery. We learn that Messrs Tomlinson & Co., the contractors, are pushing the work with extraordinary energy—that all the grading has been sublet to be finished by the first of April next, that the foundations of the White River Bridge at Noblesville have been completed, and that this structure will be completed early in the spring, so as to admit the commencement of the work of track laying at an early day. The Indiana papers speak in the highest terms of the efficiency of the contractors, who are winning golden opinions for the prompt and energetic manner they are pushing the work.

The road is to be run by the Madison company. We learn that a contract is soon to be given out for iron, so as to have it delivered at New Orleans in season to take advantage of high water in the spring.

We are happy to chronicle the new impulse given to this work. The people interested in its construction, feeling assured that this is secured, are now taking hold of it with renewed earnestness and vigor.

Internal Improvement Conventions.

A great southern and western railroad convention is to be held in New Orleans on the second Monday in January.

It is also proposed to hold a State internal improvement convention in Kentucky, during the session of the Legislature.

A convention is soon to be held at Peoria, Illinois, to devise some method of improving the navigation of the Illinois river.

Stock and Money Market.

We have little change to note in the general condition of the market since our last. Money still remains scarce for all projects out of the regular business channels, where it is tolerably abundant. It is with difficulty that loans are effected for new works, or in fact for any project the reputation of which is not well established.

As some of our readers may perhaps be misled by the report of the state of the market to be found in the daily papers, which quote the loans at 7 and 8 per cent, we would state that such loans are effected upon a security that has a known and determined value. Take the Erie stock for instance. This will sell on the instant, for a given amount. Those having money lying idle for a short time, make what is termed *call* loans, upon securities that have the attribute of *instant* convertibility, as they can realize their money at any moment. Such loans it will be seen are no guide for those who offer what may be said to have no market value, but what is purchased for permanent investment.

The great cause of the present difficulty of obtaining money for railroad, is the vast number of projects offerings. On that account we think the railroad companies must pay a large bonus for some time to come. The supply regulates the demand and rate. A large number of our new road will be soon in operation and will begin to pay off their indebtedness, which will in time tend much to alleviate the pressure caused by the immense sums we are putting into our public works.

It is stated unofficially that the Erie will declare a 4 per cent. January dividend out of the earnings of the road, and that it will have a surplus of 1½ per cent. left. If this should prove correct, the Erie will make a more favorable exhibit of earnings for the first six months than any road ever opened in the United States. It is also stated that the cost of operations does not exceed 43 per cent of its earnings. The effect of this announcement has been to carry the stock to a high figure. If the road in its present condition and before any of its western connections are formed, can earn 5½ per cent for six months, it can greatly increase this amount when all these are completed.

The Evening Journal gives the annexed statement of the quantity of flour, wheat, corn and barley, left at tide water during the 2d week in November in the years 1850 and 1851, as follows:

	Flour. bbls.	Wheat. bush.	Corn. bush.	Barley. bush.
1850...	202,003	225,422	22,714	109,344
1851...	161,844	164,774	84,315	211,435

Dec.... 41,159 60,648 Inc. 61,601 102,091

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 14th Nov., inclusive, during the years 1850 and 1851, is as follows:

	Flour. bbls.	Wheat. bush.	Corn. bush.	Barley. bush.
1850...	2,604,855	2,694,362	3,166,392	1,517,416
1851...	3,047,048	2,843,197	7,380,374	1,427,680
Inc....	442,193	148,835	4,213,982	dec. 89,736

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 14th Nov., inclusive, during the years 1849 and 1851, is as follows:

	Flour. bbls.	Wheat. bush.	Corn. bush.	Barley. bush.
1849....	2,710,155	2,217,737	4,852,409	1,197,415
1851....	3,047,048	2,843,197	7,380,374	1,427,680
Increase.	336,893	625,460	2,527,965	230,265

By reducing the wheat to flour, the quantity of the latter left at tide water this year, compared with the corresponding period of last year, shows an increase of 471,960 bbls. of flour.

The following from the Boston Courier, will show the fluctuations in stocks the past year. It will be ed that the dividend paying securities have fluctuated but little, and as a general thing, have more than maintained the quotations of a year since; while the "fancies" have varied very largely in price, and with scarcely an exception, are lower than in November, 1850:—

	1850.	Nov.	Feb.	May.	Aug.	Nov.
Boston and Maine.	105	106	105½	103	105½	105½
Boston and Prov.	86½	85	89½	85	89½	89½
Boston and Wor.	102½	106	106	101½	103½	103½
Michigan Central.	101	95	99½	104½	107½	107½
Fitchburg.	113	112	112½	109	111	111
Eastern.	103½	102½	102½	94½	100	100
Western.	104½	108½	104½	103	104	104
Northern.	69½	71½	70½	66½	68½	68½
Old Colony.	61	68½	68½	66	66½	66½
Fall River.	86	94	92	93	96½	96½
Rutland.	57½	57	57½	44	43	43
Reading.	34½	31½	27½	25½	27½	27½
Ogdensburg.	35½	39	40	30½	30½	30½
Vermont Central.	33½	35½	37½	30	26½	26½
Vermont and Mass.	31½	30	30½	25½	28½	28½
Wilmington.	36	30½	29½	26½	27½	27½
Norfolk County.	42	30 bid	20½	20	15½	15½
Cheshire.	63½	61	58½	49	49	49
Man. & Lawrence.	91½	90	85	86	75a80	75a80
Pittsburg Copper						
Co.	92	99	95 bid	92½	102	102
East Boston Co.	18½	27½	33	22	21½	21½
Edgeworth Co.	7½	10½	9½	7½	9	9
Canton Co.		64½	76½	59½	65	65
Essex Co.	100	109	107	92	80a85	80a85
Winnisimmet Co.	120 bid	160	100 bid	150 ask		
Ogdensburg bonds.	95½	99½	97½	94	93	93
Vt. Central bonds,						
'52.	92½	95	95	93	91	91
Vt. Central bonds,						
'56.	86½	92½	91	90	83½	83½
Vt & Mass bonds.	84½	88	87½	85½	83	83
Rutland bonds, '55.	84½	87	88½	87	83	83

The above quotations were the prices on the 15th day of each month enumerated, being three months apart. There were important fluctuations between those dates, which it would be almost impossible to give in this form. For instance, the shares of the Vermont Central railroad were at \$37½ on the 15th May, \$30 on the 15th August, and at \$35½ on the 15th of September. At the close of that month and early in October, some fifteen thousand shares, which had been bought and held for speculation, were thrown upon the market, which has not yet recovered from the shock; although the shares are now more scattered, and better held than before.

Morris Canal.—The receipts of the Morris canal company were:—

Week ending 8th inst.	\$3,822 47
Same week last year.	2,089 02
Increase in 1851.	\$1,733 45
Total to 8th November, 1851.	\$100,094 56
do. do. 1850.	87,095 83
Increase in 1851.	\$12,998 73

Illinois and Michigan Canal.—The receipts on the Illinois and Michigan canal during eight months of the year 1851, from March to October, inclusive, were \$97,253 88
Same period in 1850. 76,515 91

Increase in 1851. 20,773 97
Michigan Central Railroad.—The earnings of this road for October, were:

Freight.	\$74,446 22
Passengers.	95,606 60
Miscellaneous.	30,670 57
Total.	200,723 39
October, 1850.	165,572 93

Increase. 35,150 46

The working expenses in October, were \$32,500, which is but 16 per cent on the earnings.

The aggregate earnings of the last 11 months have been \$999,720 16
Same time, 1850. 752,037 54

Increase, 33 per cent. 247,682 62

Cleveland and Columbus Railroad.—The earnings of this road in October, were:

Passengers.	\$38,547 43
Mail, etc.	2,923 79
Freight.	22,000 00
	63,471 22

Railway Share & Stock List;

CORRECTED WEEKLY FOR THE
AMERICAN RAILROAD JOURNAL.

NEW YORK NOVEMBER 22, 1851.

GOVERNMENT AND STATE SECURITIES.

U. S. 5's, 1853.	101½
U. S. 6's, 1856.	106½
U. S. 6's, 1862.	110½
U. S. 6's, 1862—coupon.	114½
U. S. 6's, 1867.	115½
U. S. 6's, 1868.	116½
U. S. 6's, 1868—coupon.	122½
Land Warrants.	140a145
Arkansas 6's.	52a53
Alabama 5's.	91a92
Indiana 5's.	83
Illinois 6's, 1870.	65a68
Kentucky 6's, 1871.	104a106
Massachusetts sterling 5's.	105a106
Massachusetts 5's, 1859.	100½
Maine 6's, 1855.	103
Maryland 6's and Concord.	102½
Michigan.	—
Mississippi.	—
New York 6's, 1855.	103½
Ohio 6's, 1860.	109
Pennsylvania 5's.	91

RAILROAD BONDS.

Atlantic and St. Lawrence, 6 per cent.	85
Baltimore and Ohio, 1867.	94½
Boston and Providence 6's, 1855.	101
Boston and Worcester 6's, 1855, convertible.	107½
Bost., Concord and Mont. 6's, 1860, mortgage.	87½
Cheshire 6's, 1860.	91½
Connecticut River 6's, convertible.	89
Erie 7's, 1859.	100
Erie 7's, 1868.	106
Erie income 7's.	93
Hudson River 7's, 1853.	101½
Michigan Central, convertible, 8's, 1856.	104½
New York and New Haven.	100½
Norwich and Worcester, mortgage, 1860.	80a85
Old Colony, 1854.	97½
Ogdensburg 7's, 1859.	91
Portsmouth and Concord.	80a85
Passumpsic 6's, 1859.	94½
Rutland 7's, 1863.	90
Reading mortgage, 1860.	78
" " 1870.	70
Sullivan, mortgage 6's, 1855.	67
Vermont Central 6's, 1852.	90
" " 6's, 1856.	85
Vermont and Massachusetts 6's, 1855.	86

RAILROAD STOCKS.

[CORRECTED FOR WEDNESDAY OF EACH WEEK.]

	Nov. 12.	Nov. 19.
Albany and Schenectady.	89½	93
Atlantic and St. Lawrence.	60a65	—
Androscoggin and Kennebec.	30a35	—
Boston and Maine.	106½	105½
Boston and Lowell.	108	109
Boston and Worcester.	102	102
Boston and Providence.	89½	86
Bost., Concord and Montreal.	36	—
Baltimore and Ohio.	67½	—
Baltimore and Susquehanna.	34	—
Cheshire.	47	48
Cleveland and Columbus.	—	—
Columbus and Xenia.	—	—
Camden and Amboy.	—	—
Connecticut River.	60	—
Delaware and Hudson (canal).	108½	107½
Eastern.	99½	95½
Erie.	82	87
Fall River.	96½	94
Fitchburg.	111	119½
Georgia.	—	—
Georgia Central.	—	—
Harlem.	66	68½
Hartford and New Haven.	122	—
Housatonic (preferred).	—	—
Hudson River.	70	74½
Kennebec and Portland.	50a55	—
Little Miami.	—	—
Long Island.	15	14½
Mad River.	90	—
Madison and Indianapolis.	90	93
Michigan Central.	105	108½
Montgomery and West Point.	—	—
Michigan Southern.	—	—
Manchester and Lawrence.	70	—
Morris (canal).	14½	15½
New York and New Haven.	109	108
New Jersey.	—	130
Northern.	68½	68
Nashua and Lowell.	104½	—
New Bedford and Taunton.	108	—
Norwich and Worcester.	55	46½
Norfolk County.	9	16
Ogdensburg.	31	30½
Old Colony.	66	65
Passumpsic.	70½	72
Pennsylvania.	—	—
Pittsfield and North Adams.	95	—
Philadelphia, Wilm'gton & Balt.	27½	28½
Petersburg.	—	—
Richmond and Fredericksburg.	—	—
Richmond and Petersburg.	—	—
Reading.	55½	56½
Rochester and Syracuse.	110	110
Rutland.	45	43½
Stonington.	52	44
South Carolina.	—	—
Syracuse and Utica.	123½	—
Sullivan.	15a20	—
Taunton Branch.	108	110
Troy and Greenbush.	90	—
Tonawanda.	—	—
Utica and Schenectady.	127½	127½
Vermont and Canada.	97	99½
Vermont Central.	26½	26½
Vermont and Massachusetts.	27½	27½
Virginia Central.	—	—
Western.	104½	103½
Wilmington and Raleigh.	56	—
York and Cumberland (Pa.).	19½	—

Verdict against a Railroad Company.

A Mr. Hood on the 15th of January last took passage at New Haven for Collinsville Conn., buying a ticket for that place at the railroad office. At Plainville the conductor gave him a check for the stage, which at that place connected with the cars, in exchange for his ticket. The stage was upset and Mr. Hood's leg was broken. He sued the railroad company for damages, but they contended that in the first place that they were not authorized to carry passengers in stages, and if they had been they had no control over this accident. The Court and Jury ruled differently, however, and gave a verdict for the plaintiff with \$3,400 damages and costs.

For the American Railroad Journal.
Erie Railroad.

"The Erie railroad has ceased to be an experiment," from being constantly repeated on all sides, has become a sort of a bye-word; and whether true or not, has had the effect to make the statement generally believed. This idea has made its stock and bonds nearly equivalent to the amount of money they represent, and the fullest confidence is felt of a still more favorable result.

The Erie road is deservedly the pet project of New York. We believe it to be essential to the maintenance of, and to secure to us beyond dispute, our western trade. We take pride in the vastness of the achievement. The world cannot boast of a similar work in all respects its equal. It is a magnificent monument of the energy and perseverance of those who for years have been entrusted with its management. From its vast cost, our citizens have a corresponding interest in its success. We are influenced alike by motives of pride, of interest and ambition, to believe all we hope from this great work.

The road is now so far completed that opinion can have no influence in its success. A person may speak freely in relation to it, without the risk of being charged with hostility, and without the fear of embarrassing its operations. Before it was opened, the extent of its success was a matter of conjecture, and an adverse public opinion would have been fatal to its progress. Success now no longer depends upon public estimation. It is bound up in the result, which can neither be rendered favorable nor unfavorable by anything that may be said or written in reference to it. We do not receive to its fullest extent the prevalent idea, and we believe we can much more effectually promote the good of the road, which we have as much at heart as any person can have, by giving our own views, than by echoing those of the public.

The Erie railroad (the fact of its success, we mean) has *not* ceased to be an experiment. This it is just *commencing* to solve. Its past history affords no very flattering augury for the future.—The estimates which have been made of its cost and revenues, are, as we shall show, entirely unreliable. In attempting to ascertain the probable amount of these items, the best guide we have is afforded by the experience of similar and older works. But even this is not infallible, and the degree of success must always depend upon the circumstances of each case.

The Erie road, in the first place, is not in a proper condition to institute the experiment which is to test its success. It is *opened*, not *completed*. Without vast addition to its present cost, the experiment *now* making may result in failure, when with an increased outlay it might prove completely successful. We will endeavor to show why the question of its success should not be taken as a foregone conclusion, and to point out the conditions necessary to a favorable result.

We may take for granted that a road, of the extent of the Erie, can never do a *profitable* business without a double track. On a line of road of 500 mile, no regularity can be given to trains without them; and the numerous accidents on roads doing a large business, prove the great danger of operating the road with only one.

The officers of the company admit the necessity of another track, and that they are prevented from laying it down by want of means alone. Every road doing a large business lays down a double track as soon as it can get the means to do so.—

The superior economy of two over one, even with the additional cost, is confirmed by general experience; and we affirm that for the experiment to succeed, the Erie road must have two tracks, for nearly all, if not for its whole line. Without such, the road cannot make *money*, no matter what its receipts are. The amount of receipts of a road furnish but little evidence of its net earnings. The Boston and Worcester road, for instance, earn about \$15,000 per mile per annum; yet this, at most, is only a seven per cent. stock. At the above rate, the gross receipts of the Erie would be over \$7,000,000, a sum double the most extravagant estimates of its revenues.

To lay down another track, and place it in complete order, with the additional equipment required, it would cost at least \$5,000,000. This is at the rate of \$10,000 per mile, which we believe to be a small estimate. Most of the bridges on the route are, we understand, built for a single track. Such is also the case, we presume, with the culverts, road bed, etc.

We also estimate that the company need at least \$5,000,000 more, to place the road in a proper condition; to properly stock it, to prepare suitable depots and station houses, to carry out the necessary improvements at Dunkirk, Piermont, Jersey City, and to meet the innumerable items required to complete a road. The sums added to the last estimated cost of the road in the report of the directors, would make the entire cost something over \$30,000,000. But to this sum must be added the floating debt of the company, and the present increased cost over the estimates. We of course have no means of exactly ascertaining this amount, but we have no doubt of its being large. But admitting that \$10,000,000 additional will *complete* and stock the road, we have \$30,000,000 upon which to declare a dividend, instead of \$20,000,000; and allowing that the \$10,000,000 be raised by the bonds of the company, we have the interest on \$25,000,000 to take care of, before any dividend can be paid upon its stock.

Extravagant as these estimates may be, we believe that they will fall short of the sum required to place the road in a suitable condition for its highest efficiency.

We are aware that the above differ widely from the estimates which have at different times been made by the officers of the company. The first estimate of cost was about \$6,000,000 for the whole line. In 1844, the board of directors, of which Horatio Allen, Esq., a well known and highly distinguished engineer of this city, was president, estimated the cost at \$9,000,000, and Mr. Loder, the president of the company, in his report issued in 1848, estimated the cost at about \$12,000,000. He stated that it would be to the stockholders the cheapest road in the country, and its cost would not exceed one half the cost of the Western railroad of Massachusetts, which was \$50,000 per mile. In 1850, the cost was stated to be over \$20,000,000—being an increase of \$8,000,000 in a little over two years. We do not adduce these figures from any improper motive, but simply to show that the company may be just as wide of the mark at an estimate of \$20,000,000, as at 6, or 10, or \$12,000,000. They were honestly made for a good purpose, and with the best lights which could be had at the time. Further evidence showed the necessity of increased appropriations.

What will be the cost of the Erie railroad, and how can we ascertain it? The most satisfactory, and in fact the only mode, will be, to ascertain the

cost of similar works, and substitute the one for the other. Let us take the average cost of six of the leading Massachusetts roads, and see what figures they give us:

	Cost per mile.
Boston and Lowell.....	\$72,060 98
Boston and Maine.....	47,629 21
Boston and Providence.....	64,457 21
Boston and Worcester.....	71,171 63
Fitchburgh.....	53,468 11
Eastern.....	53,883 46
	6)362,670 60

Average per mile.....\$60,377 00

The aggregate length of the main stems of these roads is 276 miles; of their branches 73½—making a total of 349½ miles. As a general rule, branches cost much less than trunk lines. The average cost of the main lines of the above roads is over \$70,000 to the mile. The main stem of the Erie is 469 miles long. Its branches, leaving out the Ramapo and Patterson, only 38. The comparison is therefore very much in favor of the Erie road. At \$70,000 per mile for the main stem, the latter would cost \$32,830,000; or with its branches, \$30,420,000, at \$60,000 per mile.

We estimate the ultimate cost of the Erie railroad fully up to that of the average of the roads we have instanced. A comparison of routes we believe would be against the former. It cannot, we think, claim to have been any more judiciously managed, or economically built, and we cannot see any reason why its cost should be less.

In estimating the future net income of this road, we must take into consideration its ultimate cost, which cannot be estimated at less than \$30,000,000. The experiment cannot be considered as satisfactorily solved, until we see what the road can do when fully completed.

We do not propose to institute a comparison of the route of this, with that of any road; our object being simply to determine the question of cost, and to leave that of the income upon such cost, a matter of general inference. We wish merely to show that the Erie road belongs to a *family*, possessing common lineaments, and similar characteristics. The Erie is no better nor worse than the brotherhood to which it belongs.

The inference drawn from these facts is much stronger evidence than any assertion of the cost on the part of directors.

Scarcely anything in the business line can surprise us more, than the wide discrepancy between the estimate and the cost of a railroad. We have compared the estimates and cost of the Erie. These were no further assunder than those of most of our roads. The Boston and Providence and Boston and Worcester, for instance, were estimated to cost about \$1,000,000 each. Their aggregate cost has reached to more than \$8,000,000. We refer to these, because they are the first to occur to us.—They are not alone in this respect, but stand for a whole class.

The Erie road must have more money, and that immediately. The first step of the directors should be to prepare the public for the call that *must* shortly be made upon it. Additional sums laid out in construction will not render its stock or bonds any less valuable. If the company were properly entitled to the loans it has already received, it can certainly bring equal claims, to a sufficient sum to perfect the work.

EXPERIENCE.

Railroads in Ohio.

We have received an elaborate *resume* of the railroads in this State, which we shall give in our next.

British Provinces.

Mr. John Young, of Montreal, the newly appointed Minister of Public Works in Canada, defines his position in reference to the projected railroad in the Provinces, as follows: we copy from his reply to interrogations addressed to him on the eve of the approaching election in that city.

I am in receipt of your letter of this date, and in reply, beg to say that I have much pleasure in acquiescing in your wish that I should express my views on the subject of the Halifax railway, and the canal to connect the waters of the St. Lawrence with those of Lake Champlain. As I have already stated, I have accepted office, in the hope that it may be in my power to assist in carrying out those great schemes of internal improvement, required to enable Canada properly to appreciate the advantages of her position in the great outlet from the western lakes. Of these questions, none are of the importance or magnitude of the grand trunk line of railway.

As the act passed at the last session of the Provincial Parliament has not yet been met with corresponding action in the Lower Provinces, it would be premature in me to offer any opinion as to the result of that measure—a measure projected and passed under a former administration, and for which I cannot be held responsible. I have, however, no hesitation in stating, that I am strongly in favor of the scheme of a railway from Halifax to Quebec and Montreal; but to make this work acceptable or desirable to the Canadian people, it is absolutely requisite, that simultaneously therewith the construction of a railway from Montreal to Hamilton should proceed. This last mentioned work I regard as of more pressing importance to Canada generally than even the other, especially as by the Portland road access will now be very shortly had to the Atlantic. Feeling, however, the importance of acting in harmony with the eastern portion of Canada, the Lower Provinces and the British government, in a work of this magnitude, it is my opinion that in connection with the railroad from Montreal westward, the line to St. Johns and Halifax should be completed by Canada to the borders of New Brunswick. So far, however, as I have examined the subject, I am not in favor of the line proposed by Major Robertson, by whose report the distance to be built in Canada from Quebec is 277 miles.

This survey was made with a view to military purposes; and I fear that the commercial advantages which may be gained by connecting Nova Scotia and New Brunswick with Canada, have not had due consideration.

I believe that a line for a railway from Quebec to the New Brunswick boundary, can be found by the way of River du Loup and the Grand Falls, and from thence intersecting the European and North American railway at or near St. John, which will not exceed 190 miles in length. Such a road would secure the trade of the St. John's river in Maine and New Brunswick, and could not fail to yield interest for the capital invested. To Montreal, the importance of the western line can scarcely be overrated; and should the efforts of the government to secure the entire railroad from the extreme west to the ocean in British territory be frustrated, I am prepared to assist their anxious desire to promote the construction of that part of the line west of Quebec by our own provincial resources and individual efforts. It must, however, be borne in mind, that our provincial securities will not bring over 6 per cent., while our municipal and other bonds may sell only for 8 per cent. I cannot, therefore shut my eyes to the advantage of building 600 miles of railway (by taking money at 3½ per cent. interest) instead of constructing 300 miles, at the same annual cost of interest to the Provinces.

As regards the canal to connect Lake Champlain with the St. Lawrence, I shall be prepared to consider impartially the reasons which may be adduced in favor of the several routes suggested. Only one route (from Lake St. Louis) has yet been surveyed, and until comparative surveys are made of other routes, and the merits of each duly weighed, I shall defer expressing a definite opinion as to the point of departure from the St. Lawrence. I trust, however, that the citizens of Montreal, should they

honor me with their confidence, will rely on my anxious desire to avoid any course which may be prejudicial to their interests, or to those of the Province.

I have the honor to be, gentlemen,

Your obedient servant,

JOHN YOUNG.

The above contains the first streak of light we have yet seen coming from the friends of the Halifax and Quebec railroad. Mr. Young proposes to follow a *commercial*, instead of a *military* line, and save by doing so 100 miles in distance; and by following the valley of the St. John, to run through a country that can do something towards the support of a railroad. By his plan, the road from St. John to Halifax would become the trunk line for both the Quebec and the Maine line. Should it be carried out, an immense saving in cost would be effected, and a new face would be put upon the whole project. We are glad to chronicle Mr. Young's appointment. It places a liberal, intelligent and energetic man at the head of the most important department in the Canadian government. His influence is certain to be felt in promoting all useful schemes of internal improvement, and he may yet save the Halifax and Quebec railroad from destruction, by causing the proper route to be selected, though we believe he was somewhat offended with us, for advocating precisely the same ground he now occupies.

Railroads in the Lower Provinces.

The Legislature of Nova Scotia is now in session. The great topic before that body is the Halifax and Quebec railroad. In speaking of the proceedings had upon this subject, the New Brunswickian says:

On Wednesday, the Provincial Secretary then, by command, presented to the Assembly the correspondence and documents relative to the proposed line of railway in these Provinces, and subsequently introduced two bills, the one entitled "An act to make provision for the construction of railways in British North America," and the other "An act for raising by way of a loan a sum not exceeding £1,000,000 for the construction of railways in British America." The tone of the House is moderate and satisfactory, and these railway bills will be triumphantly carried.

A memorandum of the terms proposed by the governments of Canada and Nova Scotia, at the Toronto Conference, embracing three propositions, the acceptance of either of which, by New Brunswick, would bind the other Provinces, was presented at the same time. These propositions are as follows:

First. That each Province should be responsible for the cost of that portion of the road passing through its own territory.

Second. That New Brunswick should make a distinct and separate agreement for the construction of its portion of the line, with private contractors, who might possibly be induced to undertake the work on liberal terms.

Third. That the line between Halifax and Quebec should be undertaken on the joint account of the three Provinces; and that the crown lands lying within five miles, on each side of the line, should be conceded by each Province, for the benefit of the road; and that until the payment of the cost of construction, and interest, the receipts should be common property, after which, each Province to own that portion of the road which passes over its own territory.

The following provisions are included:

Canada having provided by legislation for one-third of the great trunk line from Halifax to Quebec, and for an extension of that line from Quebec to Hamilton, (whence to Windsor, opposite Detroit, a section of 200 miles is already under contract), it is assumed that New Brunswick will provide for one-third of the trunk line to Quebec, and for the whole of the Portland line lying within her territory. It is also assumed that the British gov-

ernment will advance all the money which the three Provinces require, to make both lines—that is from Halifax to Montreal—and from a convenient intersection of the trunk line to the State of Maine—at an interest of three and a half per cent. It is further assumed, that while the tolls on the roads, the lands to be entrusted to the joint commission, and the public revenues of the Province, will be pledged to the British government to repay the interest and principal of the money borrowed—the last will not be required, except the tolls and lands yield less than the annual interest on the sum for which each province is severally responsible.

Since the above was in type, we learn by telegraph that the Provincial Assembly have, by a vote of 39 to 14, sanctioned the above scheme, making the project binding on Nova Scotia. We apprehend there can now be no doubt whatever, that the action of New Brunswick will be equally favorable. So we may consider the construction of the Halifax and Quebec railroad, with the Portland branch, as beyond question.

Coupled, we presume, with the above scheme, will be the proposed road from Montreal to Quebec, and from Montreal to Detroit. The Canadian government already supply a part of the cost of these roads, and will probably assume them. The whole line from Halifax to Detroit will be about 1,400 miles, or nearly 1,600 with the Portland branch—exceeding the distance required to build a road from the western line of Missouri to the Pacific—a project which is regarded by us as too vast to be at present undertaken.

What a stupendous enterprise this of our neighboring provinces! Sixteen hundred miles of railroad at a dash! If accomplished never let us say that they are behind the times. If successful, they will be a great ways ahead of the age, for sober experience shakes her head and looks on with distrust.

If the above line should be built, it would secure all that the provinces need for a long time in the shape of railroads. The line will traverse the centre of the narrow belt of country which embraces nearly all the arable land in the Canadas. It would also supply all the railroad accommodations needed by New Brunswick and Nova Scotia.

The road can be built within three years after all preliminaries are arranged, if not in a shorter period. Nearly every mile of it may be commenced at the same time, with equal economy. The whole line will run in the immediate vicinity of navigable water, from which materials may be distributed with the greatest convenience. Should the work be pushed with vigor the immense sums expended must give a decided impulse to business in the provinces.

Indiana.

A company has been formed for the purpose of constructing a railroad from Peru in this State, (the terminus of the Indianapolis and Peru road,) to Goshen in Elkhart county, to connect with the northern Indiana railroad. The company have organized under the name of the Kosciusko, Elkhart and Miami railroad company, and have elected the following gentlemen Directors:—David Long, William Felkner, David Ripsey, M. Beck, D. S. Pershing, J. S. Frazer, Alvord Wilcox, I. H. Jennings, and Christian Sarber and the Board of Directors have elected Alvord Wilcox, President. The company seem determined to make every exertion to push the work on to a speedy completion. We view the completion of this link between the north and south as of vast importance not only to the particular section through which it passes, but to our whole State; persons going from the north on this road will have choice of some six or seven roads at Indianapolis, and these six or seven roads will each furnish some business, it may well be supposed, for this northern road.—*Laporte Whig*.

Pennsylvania.

Sunbury and Erie Railroad.—We learn from good authority that this project is making very rapid progress, and that there is every prospect of the immediate commencement of the work of construction under auspices that promise certain success. From Philadelphia, as well as from New York, continuous lines of railroad are in progress to Williamsport, on the Susquehanna, 223 miles from the former, and 187 from the latter. From Williamsport to Erie, the distance is 240 miles, over, it is said, a route remarkably favorable for a railroad. It is estimated by competent engineers that \$10,000 per mile will grade and bridge the whole line. A large sum is now raised on the route, and it is stated that Philadelphia will immediately take hold of the work, as soon as the Central railroad shall be completed. That city feels the deepest interest in the Sunbury and Erie railroad, as it will place her in connection with the best harbor on the south shore of Lake Erie, by a shorter line than can be found to New York. The latter would, we think, derive equal advantages from the road, as the distance against her is too small not to be counterbalanced by her commercial superiority.

Important Project.

The Chicago Democrat brings forward an important project for the consideration of the people and of Congress; no less than the extension of the Mobile and Chicago railroad to Lake Superior. It will be recollected that Congress has granted to the States through which a railroad from Chicago to Mobile will pass, every alternate section of public lands along the line, to aid in the work of construction. Under this grant, the road will be built through Illinois, and ultimately to Mobile. A railroad is in progress from Chicago up the Rock River Valley to Fond du Lac, and will be built.—From Fond du Lac to Lake Superior is about 250 miles, most of the way through an unsettled country. The Democrat suggests that Congress should denote lands enough to build the road, opening an accessible way at all seasons of the year to the rich mineral regions, and doubling the value of the balance of the public domain, by the facilities of business and increased population.

The grant of lands for the road is urged upon the attention of the Senators and Representatives of Illinois and the west, and the Democrat expresses the opinion that they can carry the measure through.

Finances of Tennessee.

The Comptroller of Tennessee has recently made a report of the finances of the State, which is in substance as follows:

There has been paid into the State treasury during the two years prior to the first Monday in Oct., 1851, from all sources, as well as upon warrants issued within that time.....	\$1,004,004 94
And there has been paid out of the treasury within that time, for all purposes.....	933,431 25
Excess of receipts over disbursements for the two years.....	70,573 69
Balance in the treasury on the first Monday of October, 1849.....	152,198 11

Leaving in the treasury on the first Monday of October, 1851.....

\$222,771 80
The receipts into the State treasury have increased within the last two years from \$790,695 53, to \$1,004,004 94. The disbursements during the same time have increased from \$862,426 66 to the sum of \$933,431 25. Receipts over disbursements \$70,573 69.

For the American Railroad Journal.

Mr. Whitney's Railroad Project.

H. V. POOR, Esq.

The remarks in regard to the above gigantic project, which appeared in the Journal of November 15th, I consider hardly does justice to Mr. Whitney. A profile of the route for most of the contemplated line may be seen in documents published by order of the United States government, which present no formidable obstacles that need be solved by eminent engineers. The only thing requisite being the necessary means whereby the work can be successfully carried through to the Columbia river, or the Pacific ocean at Puget's Sound.

Mr. Whitney fully explained the preference of a northern route, starting from the Mississippi river, opposite Prairie du Chien, to a more southern location, there being less rain or snow during the winter months, and an infinitely better climate.

It is a well established fact, that man's physical endurance for labor, and aptitude for toil, is greater north than south of the latitude of Washington, and that as you advance toward the Pacific in a high latitude, the climate is milder than on the Atlantic slope; altogether making Mr. Whitney's proposed route the most feasible of any within the confines of the United States.

There is another argument in favor of starting said railroad line from a point on Lake Michigan. Take Chicago, for instance, and you will find that it is just about the same distance from Boston as from New Orleans, and somewhat less distance from New York, Philadelphia, Baltimore, Richmond, Charleston and Savannah, to Chicago, thus putting nearly all the Atlantic seaboard on an equal footing as to distance across the continent of America.

J. D.

Northern and Southern Routes of Travel.

In going south from New York, the whole stream of travel is thrown upon one line of road. The consequence is, high fare and poor accommodations. On the east with the roads now opened and in progress, the traveller may take his choice of seven different routes, using the New York and New Haven as a part of their line, for two or three of them. With such a choice of route, there can of course exist no monopoly, and a vigorous competition secures low fare, the highest speed, and the best accommodations. So in going north. In a few days we shall have three distinct lines to Albany—all parallel and near each other. A passenger may go from Portland to New York easily in one day, and spend from 10 to 3 o'clock, the business portion of the day, in Boston on his way, at a charge of \$7; or \$6, by taking the steamboat route. The distance is about the same from New York to Richmond, Va. The fare alone between the last named cities is \$13 40, just about double the charge on the northern route.

One would suppose that the route from New York to Richmond, Va., would be the most profitable in the United States. As a whole, such is not the case. The numerous routes east, as a general rule, pay much higher dividends, notwithstanding their higher cost, and numerous competing lines.

Lakeshore Railroads.

We learn from the Michigan city News that the cars are now running from that place 25 miles west on the Michigan Southern railroad, and on the Michigan Central 21 miles. The News also says that the Central road will be complete to the Illinois line by the first of December. It is already graded to within 3 miles of it.

Iowa.

A State railroad convention was held at Iowa City, Iowa, on the 15th ult., to take measures to secure a grant of land from Congress to aid in building a railroad from the Mississippi to Council Bluffs, and from Dubuque to Keokuk. The convention was organized by the appointment of Ex Governor Lucas as President; Arthur Bridgeman, of Lee, Wm. H. Merritt, of Dubuque, David Rider, of Jefferson, A. E. D. Boquet, of Marion, as Vice Presidents; and Wm. P. Clarke, and Thos. Tostevin, Secretaries.

The convention was addressed by a number of gentlemen, and a series of resolutions adopted, declaratory of its object. The resolutions claim that the proper line for a railroad to the Pacific should follow the general latitude of the south shore of Lake Michigan, crossing the Missouri at Council Bluff, and the Mississippi at Rock Island. That the value given to the public lands of Iowa by the construction of the roads will be vastly greater than the present value of the grant asked for—that government as tenant in common, should aid in the construction of the lines named. The resolutions state that the State of Iowa is entitled to her share of the surplus revenue distributed in 1836, and that the only way by which she can now obtain it, is by a grant of lands—that other States have received very large donations for internal improvements, upon precisely the same principle which the above grant is asked.

A memorial to Congress was also adopted by the convention, setting forth that the routes of the roads for which aid is asked, have been surveyed, and found to be favorable—that said railways are extremely important to the welfare of the inhabitants, and indispensable to the proper development of the immense natural resources of the State; and that one of said railways will extend from Dubuque, the head of our mineral region, to Keokuk, at the head of uninterrupted steam navigation of the Mississippi river, and the other from Davenport, at the most eligible, if not the only practicable point for bridging said river, and at the western terminus of the Chicago and Rock Island railroad, via Fort Des Moines, to the Council Bluffs—thereby forming an important section, upon a direct line, of the contemplated railway from New York and Boston to the Pacific Ocean.

The memorial further represents that the pecuniary means of Iowa are inadequate to the construction of the above roads—that they cannot be constructed for a long time without aid—that they would be of incalculable advantage to Iowa—that they would greatly benefit the general government by the increased value they would give to the public lands, and that they would promote the interests of the people of all the States.

A committee of five persons were appointed to proceed to Washington to urge upon Congress the passage of the bill, consisting of Hon. James Grant, of Scott, Gen. V. P. Van Antwerp, of Lee, Hannibal Emerson, Esq., of Dubuque, George S. Hampton, Esq., of Johnson, and Barlow Granger, Esq., of Polk.

We hope the effects to be made will prove successful. Congress has established a precedent by which she ought to be bound. Iowa presents a much stronger claim than Illinois, as a road from Rock Island to Council Bluffs, would be a much more national affair than the Cairo and Chicago railroad. The latter is purely a commercial enterprise. If Iowa does not succeed it will be-

cause similar means will not be resorted to that secured the Illinois grant.

Missouri will come into the field with similar petitions, is prepared to make out a strong case. Her two roads are exceedingly important projects, not only to that State but to the whole country.

We believe that the east are equally interested in the progress of western railroads as the west itself, though the benefit is not so apparent. That section of the country supplies us with our food, and a large part of what forms the basis of our foreign commerce, and is the great market for eastern manufactures. Every mile of railroad built and every additional ton of produce sent to market brings a direct and immediate profit to our commercial and manufacturing classes.

New Albany and Salem Railroad.

We learn from the Detroit Free Press that the New Albany and Salem road between Lafayette and Michigan City, is already under contract, and that the grading has made considerable progress. From Michigan City to the State-line of Illinois, the road is nearly complete. From New Albany northward to Bedford, a distance of about fifty miles, the road is also very nearly finished, and cars have been running there during a great part of the past season.

The grading and bridging as far north as Gosport is in rapid progress. Arrangements have also been effected, by which the Crawfordsville road becomes united and consolidated with the New Albany and Salem road, and thus, as the entire route north of Lafayette is under contract, and the work on it now in hand, there remains only the short distance between Gosport and Crawfordsville, upon which work is not now going forward. The prospect is now fair, that within two years, the entire line will be finished between the Ohio river and the lakes. The completion of this enterprise will be an important era in the history of the great State of Indiana. It will be the longest road in the west except the Illinois Central, and will develop boundless resources of one of the most extensive and fertile sections of the State.

Terre Haute and St. Louis Railroad.

We understand that matters are in train, and nearly completed, which will secure the completion of the Terre Haute and St. Louis railroad by July, '53, and perhaps sooner. We get this information from a reliable source, and it can be depended on. —*Locomotive.*

Sault Ste. Marie Canal.

The subject of this important and almost indispensable work, is vigorously agitated by our enterprising fellow citizens of the Upper Peninsula. — On the evening of the 8th inst., a public meeting was held at the Van Anden House, at the Sault, at which Judge Ashmun presided, Messrs. Sherman and Coburn Secretaries, and Messrs. Ashmun, and Knox, of Philadelphia, Thatcher, of Boston; Messrs. Whittlesey, Cash, and Hanna, of Ontonagon, Mr. Faren, of Jackson, Judge Pratt, of Detroit, and Mr. Sinclair, of Cleveland, were the Committee on Resolutions. Judges Pratt and Ashmun, and Messrs. Thatcher and Coburn, of Indianapolis, Stevens, of Ontonagon, Brooks, of Eagle Harbor, and Sherman, being called upon, addressed the meeting.

A petition and memorial were got up for presentation to Congress. The benefit of such a measure is incalculable. The immense water power there, for mills, factories, machine shops, and for making the finer mineral paints. Property generally on the whole lake will be doubled the moment the canal is complete.

We trust that Congress will give heed, this winter, to the again repeated demands of our Senators and Representatives for an appropriation to carry

forward a work of such moment, not only to Michigan, but to the entire Union, as this Ship canal. — *Detroit Free Press.*

Best Cast Steel Axles & Tires, (A NEW ARTICLE.)

For Railroad Carriages and Locomotives.

THE quality of this Steel is sufficiently attested in the announcement that it has carried off the first prizes awarded at the World's competition of 1851, in London. The axles are in general use on the Continent, and are now offered in competition with any other that can be produced; and to be tested in any way that may be desired by the Engineers of the United States, either by impact or by torsion. This Steel is manufactured by Fried Krupp, Esq., of Essen, in Renish Prussia, represented in the United States by

THOS. PROSSER & SON,
28 Platt st., New York.

November 1.

To Railroad and Canal Companies, Contractors, etc.

THE undersigned wishes to direct the attention of Chief Engineers and Contractors to the facilities he possesses for supplying them with workmen, laborers, etc. of any description, and also to remind them that he forwards such men to whatever destination they may be required.

Companies or Contractors desirous of receiving peaceable and industrious men, will be promptly supplied at the shortest possible notice.

C. B. RICHARDS,

No. 35 Greenwich Street, New York.
REFERENCES: — Chas. H. Webb, Esq., Supt. of the St. George's and British Protective Society, New York; Messrs. Harris and Leech, Philadelphia, Wm. P. Malburn, Esq., Albany.

Railroad Iron.

THE undersigned offer for sale 1000 tons Rail road Iron, (about 56 lbs. to the yard,) now at Brooklyn.

CHOUTEAU, MERLE & SANFORD,
Oct. 1, 1851. 51 New st.

M. B. Hewson, Civil Engineer,
(Open to a New Engagement.)
Memphis, Tenn.

To Stone Masons.

THE NEW ALBANY AND SALEM RAILROAD Company have about 10,000 c. yards of Abutment Masonry to let at private contract, to be completed by the 1st of July, 1852.

To contractors who can produce testimonials of character for ability as STONE MASONS, fair, remunerating prices will be given.

Early applicants, by securing the work now offered, will gain advantages over competitors for the erection of an additional 15,000 yards, to be let out early next spring, in bridging the streams between Bedford and Michigan City, via Bloomington, Gosport, Crawfordsville and Lafayette, (the most productive and healthy region in Indiana,) by the knowledge they will have acquired of the resources of the country.

Application may be made in person, or by letter addressed to the undersigned, at New Albany, Indiana.

S. B. WILSON, Engineer.
Engineer's Office, New Albany,
Sept. 29th, 1851.

Engine Waste.

CLEAN WASTE for Locomotive and Steamboat Engines, in lots as wanted; also, superior Steam Packing. Orders, with explicit directions for forwarding, should be addressed to

J. MORTIMER HALL,
36 South st., New York.

November 1. 3m

Railroad Iron.

2000 TONS of an approved pattern 59 to 60 lbs. per lineal yard, now manufactured in England, and ready for immediate shipment, from thence.

Also, 2,500 tons of different patterns in port and expected to arrive within sixty days. For sale by
DAVIS, BROOKS & Co.
23 Beaver Street, New York.

CONTRACTS made for Railroad Iron at a specific price delivered in England, or at port in the United States.

To Railroad Companies.

H. & F. BLANDY, Proprietors
LOCOMOTIVE ENGINE WORKS,
ZANESVILLE, OHIO.

RESPECTFULLY give notice to Railroad Companies that they are now prepared to furnish Engines of the most approved construction and finish, which, for capacity, speed and durability, are not excelled in this country.

Also, all other Railroad machinery, of both wrought and cast iron, pertaining to the road, stations or machine shops.

Terms as favorable as any other builders in the United States.

The facilities for transportation from Zanesville are as good as from any other point in the Union, having steamboat navigation to the Ohio river, and Canal boat and Railroad connection with the Ohio river and Lakes.

One of their Engines, the "MUSKINGUM," on the Central Ohio Railroad, may be referred to, or others, at their works. The attention of those interested is invited, and orders solicited.

Oct. 30th, 1851.

To Contractors.

OFFICE OF THE E. AND ILL. R. R. Co.,
Evansville, Oct. 23d, 1851.

SEALED PROPOSALS will be received at this office from the 13th to the 23d day of December next, for the grubbing, grading and bridging of that portion of the Evansville and Illinois railroad, lying between Princeton and Vincennes, a distance of 24 miles.

This work includes two bridges; one across White River, about 600 feet, the other across Patoka, about 200 feet.

Contractors will state what proportion of the Stock of the Company will be taken in payment.

Plans, profiles and specifications, will be exhibited, and all requisite information given at the Office of the company in Evansville, on and after the 13th day of December next. By order of the Board of Directors.

SAM'L. HALL,
President.

RAILROAD SPRINGS.

Fuller's India-rubber Springs.

THESE are now made in our own Factory, of the best materials. Each spring is guaranteed to perform the required work. Purchasers guaranteed against adverse claims.

Car Builders will save great expense by calling at the office of the Company.

23 Courtlandt St., New York.

To Railroad Companies.

THE undersigned has discovered and patented an imperishable, cheap, and sufficiently elastic substance, to be introduced between the sill and rail, so that the stone sill can be used in place of the wooden sill: entirely overcoming that rigidity where the rail is laid directly on stone. Address

J. B. GRAY, Philadelphia.

July 10, 1851.

4m

Railroad Iron.

THE undersigned are prepared to enter into contracts now at specific prices, to deliver Railroad Iron during the coming Winter and Spring, free on board at the shipping ports in Wales, or at ports in the United States.

CHOUTEAU, MERLE & SANFORD,
Sept. 30, 1851. No. 51 New st.

To Contractors.

OFFICE WILMINGTON & MANCHESTER R.R. Co.,
Marion C. H. S. C., October 18, 1851.

SEALED PROPOSALS will be received until the 15th of December next, for the Piers of a Bridge across the Great Pee Dee River. The job comprises four piers, one a very heavy pier for a draw, and the sinking of cast iron hollow piles by "Dr. Pott's Pneumatic Process," for forming foundations. The plans and specifications of the piers will be exhibited by the Secretary of the Company at Marion Court House, and by the Resident Engineer, L. J. Fleming, Esq., at Wilmington, North Carolina.

WALTER GWYNN,
Chief Engineer Wilm. and Man. R.R.
November 1. Richmond, Va.

Bridges & Brother, DEALERS IN RAILROAD AND CAR FINDINGS,

64 Courtlandt street, New York.

Having established a general Depot for the sale of articles used in the construction of Railroads, Locomotive Engines and Railroad Cars, we would invite your attention to our establishment. We have already in store a good assortment of CAR FINDINGS and other articles used in the trade, and feel justified in saying, that should you desire anything in our line, we can supply on terms perfectly satisfactory, and in the event of your desiring to order, you may feel assured that your terms will be as good as though you were here to make your own purchases.

Among our goods may be found Railroad Car Wheels, Axles, Jaws and Boxes, Nuts and Washers, Bolts, Brass Seat Hooks and Rivets, Window and Blind Springs, Lifters and Catchers, Door Locks, Knobs and Butts, Ventilators and Rings, Car Lamps, Coach and Wood Screws, Jack and Bed Screws and Babbitt's Metal; also Plushes, Damask, Enamelled Head Linings, Cotton Duck for Top Covering in width sufficient without seams, Curled Hair and all other articles appertaining to cars.

Also a new and valuable CAR DOOR LOCK, well adapted to the Sliding Door. This is decidedly the best yet introduced.

LOCOMOTIVE ENGINE LANTERNS, the best article made in the country. Whistles, Gauge and Oil Cocks, Hemp Packing, American, Russian and Italian. We are also agents for Lightner's Patent Journal Box for Car Axles, that invaluable invention, for the economical use and preservation of Car Journals.

Coach VARNISH and Japan of the best quality.

We would also offer our services for the purchase as well as for the sale of goods on commission.—Both members of our firm have had the experience of many years in the manufacture of Railroad Cars, and our Senior was a member of the well known house of DAVENPORT & BAIDGES, Car Manufacturers, Cambridgeport, Mass. With our knowledge of matters pertaining to Railroads, we feel quite confident in giving satisfaction to both buyer and seller, and hope that through assiduity and attention to any business entrusted to our care we shall merit a continuance of confidence and patronage.

BRIDGES & BROTHER.

July 22, 1851.

Lightner's Patent Axle Boxes.

THE Undersigned are Agents for, and offer for sale, *Lightner's Patent Axle Boxes*, for Railroad Cars and Tenders, which have, by thorough experience, been demonstrated to be one of the most valuable improvements ever introduced in Locomotion. The saving effected in oil alone, will in a few months pay the first cost of these boxes, independent of other advantages. They are now in use upon the following, among other roads, viz:

Boston and Worcester, Boston and Providence, Boston and Fitchburg, Nashua and Lowell, Providence and Worcester, Northern, N.H., Cheshire, Manchester and Lawrence, Concord, N.H., Concord and Claremont, Ogdensburg, (Northern, N.Y.) Stonington, New London Willimantic and Palmer, New Jersey Central, New Hampshire Central, Worcester and Nashua, Fitchburg and Worcester, Connecticut and Passumpsic, Lowell and Lawrence, Salem and Lowell, Wilton Branch, Newburyport.

Below will be found the certificates of a number of gentlemen, whose opinions will be good authority in every part of the country.

Office Boston and Prov. R. R., }
Boston, Dec. 28, 1849. }

Mr. JOHN LIGHTNER,

Sir,—It affords me pleasure to say, that after two years' trial of your boxes, I am fully and entirely satisfied of their superiority over any other pattern we have used. This superiority consists in economy of oil and freedom from "heating." I have tried every pattern of box in use, of any note, and do not hesitate to say, that you have devised one which in every respect combines greater advantages than any other within my knowledge; these advantages are so manifest, that I am fitting up all

our cars with your boxes, as fast as practicable.

Annexed, is a statement of an experiment with your boxes, the result of which may be of use to your interests.

Ten passenger cars, running 72 wheels, fitted up with Lightner's boxes used 414 pints of Patent Oil, at 50 cts. per gallon, ran 43,099 miles, equal to 5-18 pints per wheel for 43,099 miles. Speed, 30 to 40 miles per hour.

Very respectfully yours,

W. RAYMOND LEE, Supt.

I have examined the above statement of Mr. Lee, and fully concur with him in his opinion of the superiority of Lightner's box.

GEORGE S. GRIGGS,

Supt. Machine Shop B. & P. R. R.

Boston, July 26, 1849.

This is to certify that J. Lightner's axle boxes for railroad cars and locomotive tenders, have been in use on the Boston and Worcester railroad one year, and I unhesitatingly pronounce it, in my opinion, the best and most economical one in use, requiring less oil, of easy application, not susceptible of derangement, as in most kinds in use. When requiring repairs or renewal, the same may be done in one-fourth of the time usually occupied for that purpose. The box requires oiling not oftener than once a month—is kept quite free from dust, and consequently wears much longer than those generally in use.

D. N. PICKERING,

Supt. Motive Power, B. & W. R. R.

Office of Boston Locomotive Works, }

December 12th, 1849. }

The Boston Locomotive Company have been using J. Lightner's patent axle boxes under the tenders of their engines for several months, and find them more highly spoken of by the railroad companies that have used them in regard to economy in the use of oil, their durability and their ease of adjustment, than any other boxes which they have used. We therefore do not hesitate to recommend them to all railroad companies.

DANIEL F. CHILD,

Treas. Boston Locomotive Works.

Taunton Locomotive Works, }

Taunton, July 7, 1849. }

Mr. H. F. ALEXANDER,

Dear Sir,—Your favor of yesterday came to hand in which you ask what success we have met with, in using Mr. Lightner's patent box for cars, engines, &c.

We have put it in use on the Boston and Providence railroad, New Bedford and Taunton Branch railroad, Central railroad, N. J., Norfolk County, Rutland and Burlington, and as yet we have not had one complaint from them; and from what we have used of it, and witnessed, we do not hesitate to say that it is superior to anything in use for that purpose. It is simple in its construction, and easy of access, and the reservoir is held close to the shaft, and the oil and journal is perfectly secure from dust; they will run from four to six weeks without replenishing the oil. The brass in the box is changed very much easier than by any other plan that we have seen.

Very resp. yours,

W. W. FAIRBANKS, Agent.

Office Providence & Worcester R. R. Co., }

Providence, Dec. 17th, 1850. }

H. F. ALEXANDER, Esq.,

Sir,—The "Lightner patent boxes" for cars and locomotives have been in use under a portion of the passenger cars and engines of this company for upwards of two years, and have given very great satisfaction.

Though combining many excellent qualities, their great superiority consists in the economy of oil.

The result of experiments upon this road shows the consumption of oil by the use of this box, to be not more than one sixth part the quantity consumed by the use of the common box.

With the common box, eight passenger cars, 64 wheels, running 90 miles per day, consumed in 12 months 520 gallons of oil, being an average of 8 1/2 gallons per wheel per annum.

With the Lightner box the same cars running the same number of miles per day, during the same space of time consumed 73 1/2 gallons of oil, being an average of 1 1/2 gallon per wheel per annum.

So manifest are its advantages over any other box used by this company, it is intended to place it under all our cars as soon as practicable.

Besides the saving of oil, as they afford complete security from dust, we think them more durable than any other box in use.

Another advantage resulting from the use of this box is, cars run more easier than with the common box. The saving in fuel which it would effect, would of itself, we think be a sufficient inducement to use this box in preference to any other known to us.

Very respectfully,

ISAAC H. SOUTHWICK, Supt.

JOHN B. WINSLOW,

Supt. Machine Shop, P. & W. R. R.

Cambridgeport, April 5th, 1851.

H. F. ALEXANDER, Esq.

Sir,—This may certify that I have been engaged in the manufacture of railway cars since 1834, and have built for the different railroad companies cars of all descriptions to the amount of three millions of dollars, and have used on the above cars all kinds of journal boxes, and find that none give better satisfaction than the "Lightner patent box," both on account of the saving of oil and the arrangement for taking out and re-placing the composition by means of the sliding key, and other conveniences which no other box possesses.

Yours respectfully,

CHARLES DAVENPORT.

Worcester, March 17th, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—This is to certify that I have been for some years past engaged in building cars, and that I have tried most, if not all of the patent boxes, and have found Lightner's patent superior to all others as far as the saving of oil is concerned, also the ease with which they are fitted and exchanged in case they get out of order.

For the last three years, I have put them under all of the cars I have built, and in every instance they have given the most entire satisfaction.

Yours truly,

OSGOOD BRADLEY.

Office Union Works, So. Boston, }

May 23d, 1851. }

This certifies that I have applied Mr. J. Lightner's patent axle boxes to my locomotives and tenders for the past two years. I consider them superior to all others,—economical in their use, and possessing many important advantages not found in any other boxes.

SETH WILMARTH.

Office 15, R. R. Exchange, Boston, }

June 1, 1851. }

This is to certify, that we have known the success of Lightner's patent journal boxes upon various roads in New England the past three years, and have been led to examine their peculiar construction.—We are well satisfied of their merits, and have adopted them upon our small gravel cars, and take pleasure, as we ever have done, in recommending their use upon all roads where we are employed in the construction.

GILMORE & CARPENTER,

Contractors.

Amoskeag Manufacturing Co. Machine Shop, }

Manchester, May 31, 1851. }

H. F. ALEXANDER, Esq.

Dear Sir,—We are using the Lightner box on all the engines and tenders we build, and we are satisfied that it is the best box in use, and recommend the same to all those who purchase engines at our works.

Yours respectfully,

O. W. BAYLEY, Agt.

This is to certify that the Fitchburg railroad company having become satisfied of the superiority of J. Lightner's patent Axle Boxes for Railway Cars and Locomotive Tenders adopted the same

and are bringing them into general use upon their road.

One year's experience with the above improvement, has fully convinced me that there has never been anything offered to the public for that purpose which possess such intrinsic value; in fact, this is an improvement which seems to overcome all the difficulties found in all the various kinds now in use. It possesses very many advantages over all others: Some of which are [first] the first cost is much less than that of most boxes in use. [Secondly] 75 per cent is saved in oil; one gill applied to each Journal once a month, or one quart to an eight wheel car, is all these boxes require per month [Thirdly] no dust can gain access to the Journal, which is constantly lubricated with clean oil; hence the saving in repairs of Journals and composition bearings, is a matter of importance. [Fourthly,] its construction is truly simple—not complicated, having nothing liable to become loose by constant and severe service. [Fifthly] for convenience there is nothing which approaches this improvement.—The composition bearings may be removed from the Journals of an eight wheel car, by one man, and returned, or duplicates, in twenty minutes, while under the car: the same would require two men, at least half a day with other boxes in use.—The trucks and wheels using these boxes, are free from oil and dirt, usually seen upon all railroad cars, at great expense to the corporation.

NATH'L JACKSON.

Supt. Car Building and Repairs, F.R.R. Co.

Boston, March 9, 1849.

I hereby certify, that I have examined a box for Car Journals, invented by Mr. Lightner of Roxbury, Mass, and I have thought so well of it that I have adopted it on our railroad, I have known of its success on other roads.

S. M. FELTON,
Supt. F. R. R.

Office of the Central R. R., N. J., }
Elizabethtown, May 1849. }

H. F. ALEXANDER, Esq.,

Dear Sir:—Your favor, [wishing to be informed how we liked Lightner's patent axle boxes for R.R. Journals,] has been duly received; in answer we would say, we have used the boxes on Locomotive tenders one year, more or less, and on our cars some six months. I consider them the best boxes in every respect, I have ever used, or even seen used on any other roads—for safety, durability and the economy pertaining to all the details connected with the boxes and Journals of R. R. Car wheels; and we shall adopt them upon this road.

Yours Respectfully,

JOHN O. STEARNS,
Supt. Central Railroad Co., N. J.

Manchester, N. H., Nov. }
1st, 1850. }

H. F. Alexander, Sir,

I have used "Lightner's Boxes" under all the Cars of the Manchester and Lawrence railroad, and feel no hesitation in saying that I think them to be the best boxes now in use.

Yours, &c.,

THEODORE ATKINSON, Agent.

Cheshire R. R. Office, Keene, }
March 5th, 1851. }

Mr. H. F. Alexander,

Sir,—Lightner's Patent Boxes have been used on the Cheshire R. R. about a year, and have given the highest degree of satisfaction.

All the Passenger Cars now in use, and a considerable number of Merchandise Cars are furnished with them, and they will take the place of the Common Boxes on all the cars as fast as circumstances will permit.

Very Resp't.

L. TILTON,
Supt. Cheshire R. R.

Boston and Worcester Railroad, }
Boston, April 1st, 1851. }

H. F. Alexander, Esq.,

Dear Sir,—Lightner's Patent oil saving box for railroad cars, has been adopted by this corporation; we are taking out the common and substituting the

Lightner's at the rate of fifty boxes per month; it will soon take the place of all others, as it is decidedly preferable to any heretofore used by this corporation.
G. TWITCHELL, Supt.

Statement of amount of oil used on 32 8-wheel freight cars, on the Boston and Providence Railroad (with Lightner's Boxes) from March 10, 1849, to February 27, 1851; and upon 12 8-wheeled passenger cars from September 8, 1849, to February 27, 1851.

FREIGHT CARS.

Amount Oil.	No. months.	Amount Oil.	No. months.
1.—21 pts.	10	17.—23½ pts.	14
2.—19 " "	6	18.—23½ " "	11
3.—25 " "	13	19.—36 " "	21
4.—18 " "	7	20.—22 " "	10
5.—22 " "	12	21.—38½ " "	24
6.—24 " "	13	22.—29 " "	23
7.—20 " "	11	23.—35½ " "	23
8.—21 " "	11	24.—37½ " "	23
9.—23½ " "	10	25.—51 " "	23
10.—21 " "	9	26.—31½ " "	24
11.—20 " "	9	27.—28½ " "	23
12.—21½ " "	11	28.—36 " "	23
13.—19 " "	8	29.—50½ " "	24
14.—25½ " "	17	30.—50 " "	23
15.—20½ " "	10	31.—41 " "	23
16.—31 " "	18	32.—39½ " "	23

Total, 925½ pts. 510

PASSENGER CARS.

1.—19½ pts.	18	7.—30 pts.	18
2.—25½ " "	18	8.—25½ " "	18
3.—33½ " "	16	9.—29 " "	18
4.—19 " "	15	10.—46½ " "	17
5.—15 " "	15	11.—9 " "	9
6.—22 " "	18	12.—65½ " "	17

Total, 340 pts. 197

Averaging 1 4-5 pints of oil for freight, and 1 7-10 for passenger cars per month only!

All orders and enquiries promptly attended to.

BRIDGES & BROTHER,

No. 64 Courtlandt st., New York.

July 25, 1851.

Trautwine on R. R. Curves.

By JOHN C. TRAUTWINE, Civil Engineer,
Philadelphia, Pa.

JUST published, accompanied by a Table of Natural Sines and Tangents to single minutes, by means of which all the necessary calculations may be performed in the field.

This little volume is intended as a field-book for assistants; and will be found extremely useful, as it contains full instructions, (with wood cuts) for laying out, and adjusting curves; with Tables of Angles, Ordinates, etc., for Curves varying from 13 miles, down to 146 feet Radius.

A portable Table of Natural Sines and Tangents to minutes, has for a long time been a desideratum among Engineers, independently of its use in laying out curves.

The volume is neatly got up in duodecimo; and handsomely bound in pocket-book form.

Sold by Wm. Hamilton, Actuary of the Franklin Institute, Philadelphia. Price \$1.

Also, "Trautwine's Method of Calculating Excavation and Embankment."

By this method, which is entirely new, (being now made known for the first time) the cubic contents are ascertained with great ease, and rapidly, by means of diagrams, and tables of level cuttings. Thin octavo; neatly half bound, \$1. For sale by Wm. Hamilton.

June 28, 1851.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff St.

CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by POWERS & WEIGHTMAN, manufacturing Chemists, Philadelphia.
Jan. 20, 1849.

To Chief Engineers, Directors of Railroads, Canals, etc.

A Civil Engineer and Surveyor, who has been professionally engaged under the British Government, East India Company, etc., is desirous of obtaining employment as an Assistant. No objection to the South or West. Address for one month to C. E. & S., American Railroad Journal office.
August 16, 1851.

To Engineers.

A NEW WORK on the Marine Boilers of the United States, prepared from authentic drawings, and illustrated by 70 engravings, among which are those of the fastest and best steamers in the country, has just been published by B. H. Bartol, Engineer, and is for sale at the store of

D. APPLETON & CO.,
Broadway

September 1, 1851.

Pneumatic process for making Foundations for Bridges, Piers, etc.

THE Attention of Engineers, Contractors, and Bridge Builders, etc., is directed to this method of forming secure foundations. Hollow Cylindrical piles from 8 inches to 10 feet in diameter may be sunk through sand, mud, clay, etc., to any required depth, and filled with concrete or masonry.

The efficacy and economy of the process has been demonstrated in the construction of numerous permanent works, at a much less cost than the use of any other method. (See evidence in Parliamentary enquiry, Railroad Journal, April 19, 1851.)

Contracts made, or licenses granted for the use of the invention in any part of the United States, by

CHARLES PONTEZ,
34 Liberty street, N. Y.

LOWMOOR IRON.

THE LOWMOOR IRON COMPANY having appointed Wm. BAILEY LANG their sole agent in America and Canada, he is now prepared to receive and execute all orders for Railway Tire Bars, bent, welded, and blocked Railway Tires, Axles, Piston Rods, and Boiler Plates. Also, plain, angle, rivet and every other description of Lowmoor Iron.

All communications respecting the above are requested to be sent to Wm. Bailey Lang, at his Steel Warehouse, No. 9 Liberty Square, Boston, or to the Lowmoor Iron Works, Bradford, Yorkshire, England.
30th Sept., 1851.

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Fuller's Patent India-rubber Springs.

PRICE reduced to 50 cents per pound. The owners of this Patent now manufacture the Springs in their own Factory, and guarantee that each spring shall perform its required duty.

Purchasers guaranteed against adverse claims. They may have full confidence in the working qualities of the springs.

The suits brought against Ray & Co., will soon be brought to issue, and we await the result with satisfaction, having full confidence in the pure administration of the Laws.

The long advertisements put forth by Ray & Co. about prior invention of the spring are worthless he has not proved prior invention, and cannot sustain his patent in a Court of Law.

For the owners of Fuller's Patent,
G. M. KNEVITT,
23 Courtlandt st., New York.

October 7, 1851.

Railroad Iron.

THE undersigned, Agents for British Manufacturers, continue to sell Railroad Iron of the best quality, and of any weight or pattern required; deliverable at any part of the United States or Canada.

They have now on hand, ready for delivery at New York:

2,000 tons of an approved pattern, weighing about 60 lbs. to the yard.

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Now being published in Twelve Parts, price 25 cents each, the **PRACTICAL MODEL CALCULATOR**, for the Engineer, Machinist, Manufacturer of Engine work, Naval Architect, Miner and Millwright.—By Oliver Byrne, Compiler and Editor of the Dictionary of Machines, Mechanics, Engine Work and Engineering, and Author of various Mathematical and Mechanical works—illustrated by numerous Engravings; forming, when completed, one large volume, octavo, of nearly 600 pages.

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The examples selected will be found appropriate, and in all cases taken from the actual practice of the present time. Every rule has been tested by the unerring results of mathematical research, and confirmed by experiment, when such was necessary.

The Practical Model Calculator, will be found to fill a vacancy in the library of the practical working man long considered a requirement. It will be found to excel all other works of a similar nature, from the great extent of its range, the exemplary nature of its well selected examples, and from the easy, simple and systematic manner in which the model calculations are established.

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Steam for the Million. 8vo., paper.....	37

THE Fourth Annual Exhibition of AMERICAN MANUFACTURES, by the MARYLAND INSTITUTE for the Promotion of the Mechanic Arts, will be opened in Baltimore on the 20th October, 1851.

The Exhibition will be held in the **SPLENDID NEW HALL** of the Institute, (fronting on Baltimore street) now being rapidly completed. Their edifice is centrally situated, chaste in its architecture, solid in its construction, and is by far the largest and most complete building in the United States, devoted to the Mechanic Arts. It may be added that this building is 355 feet long by 60 in breadth, with an average height of 68 feet, containing some twelve apartments, the largest of which is 255 feet by 60, and that the cost will be over \$70,000.

To this Exhibition, the Managers ask the attention of all engaged in industrial pursuits throughout the country, and cordially invite them to contribute specimens of their best productions for public inspection, and to compete for the prizes offered by the Institute. These prizes consist of **GOLD and SILVER MEDALS, DIPLOMAS, etc.**, which were last year distributed as follows:—*Gold Medals*, 16; *Silver ditto*, 90; *Diplomas*, 60; besides 85 articles of Jewelry, etc., to ladies. *Fair play will be scrupulously observed towards all*, and every facility of Steam power, shafting, fixture, labor, &c., &c., will be amply provided *free of expense*. The machinery will be under a special superintendent, and a fine display of it is looked for. The last exhibition of the Institute was visited by more than 40,000 persons, and with their vastly improved accommodations and alterations, this number will be doubled at the coming display, embracing many Virginians, Pennsylvanians, and other strangers from the South and West.

Joshua Vansant, President.

Ed. Needles, } Vice Presidents.

F. A. Fisher, }

Samuel Sands, Rec. Sec'y.

Wm. Prescott Smith, Cor. Sec.

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(The last nine in *Italics* are the Committee on Exhibition.)

The Hall will be opened for the reception of goods on **MONDAY, 13th October**; on the next Monday, 20th, at 7 P. M., the Exhibition will be formally opened to the public, and will positively close on Wednesday, 19th November. Articles for competition must be in the Hall by **Thursday night, Oct. 16, unless delayed in shipment after starting in ample time.**

Those who intend depositing, will give the Committee or the Agent, notice as early as possible, stating the nature of the goods, and probable amount of room required, to exhibit them to advantage.

Circulars, containing a view of the new Hall and the full regulations of the Committee, with special information, if required, may be had promptly, by addressing the undersigned, or the Institute's Agent, J. S. Selby, Baltimore, *post-paid*.

ADAM DENMEAD,
Chairman Com. on Exhibition for 1851.

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Net prices to the trade—	
Quarts, per dozen, \$1 50	6 oz. per dozen, \$0 50
Pints, " 1 00	4 " " 0 37½
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On draught per Gallon, 20 cents.

This is the best Ink manufactured. It flows freely, is a good copying ink, and will not mould, corrode, precipitate or decay. Orders for export, or home consumption, carefully and promptly attended to by
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To Railroad Companies, etc.



The undersigned has at last succeeded in constructing and securing by letters patent, a **Spring Pad-lock** which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

I also invite attention to an improved **PATENT SPRING LOCK**, for **SLIDING Doors** to Freight and Baggage Cars, now in use upon the Pennsylvania Central, Greenville and Columbia, S.C., Reading, Pa., and other Railroads.

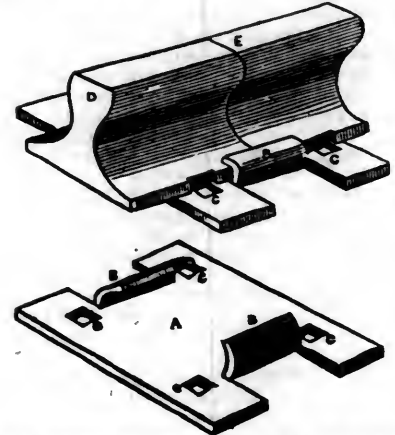
Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH,

46 South 8th St. Philadelphia.

May 9, 1851.

The American Railroad Chair Manufacturing Co.



ARE prepared to make **WROUGHT IRON RAIL ROAD CHAIRS**, of various sizes, at short notice.

By use of the **WROUGHT IRON CHAIR**, the necessity of the wedge is entirely done away—the lips of the chair being set, by means of a sledge or hammer, close and firmly to the flange of the rail.

The less thickness of metal necessary in the Wrought Iron Chair gives much greater power and force to the spikes when driven—and consequently a much less liability to the spreading of the rails by reason of the spikes drawing or becoming bent.

The less weight necessary in the Wrought Iron Chair, will enable us to furnish them at a cost much below that of **CAST IRON CHAIRS**.

DESCRIPTION OF THE ABOVE CUTS.

Figure 1 is a perspective view of the rail secured in the chair, and fig. 2 is a perspective view of the chair itself. D, E, are sections of two rails placed together, and secured at the joint on the chair by the jaws B, C. The chair is bolted down by spikes C, C. In fig. 2, the chair is represented as made of a single block or plate A of wrought iron.

The chair is set in its proper place on the track, spiked down, and the ends of the two rails brought together within the jaws as represented in fig. 1.

For further information address,

N. C. TROWBRIDGE, Secretary,
Poughkeepsie, N. Y.

June 1, 1851.

Railroad Commission Agency.

THE Subscriber offers his services to Railroad Co's and Car Makers for the purchase of equipment and furniture of roads and depots and all articles and materials required in the construction of cars, with cash or approved credit. No effort will be spared to select the best articles at the lowest market price.

He is sole Agent for the manufacture of the **ENAMELED CAR LININGS**, now in universal use. The best Artists are employed in designing new styles, and he will make to order pieces with appropriate designs for every part of the car, in all colors, or with silver grounds and bronzed or velvet figures.

He is also Agent for **Page's Car Window Sash Fasteners**, which is preferred by all who have used it to any other.

CHARLES STODDER,

75 Kilby st., Boston.

June 20, 1851.

3m.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 136 NASSAU ST., NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.

SECOND QUARTO SERIES, VOL. VII, No. 48! SATURDAY, NOVEMBER 29, 1851 [WHOLE No. 815, VOL. XXIV.]

PUBLISHED BY J. H. SCHULTZ & Co., 136 NASSAU ST.

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American Railroad Journal.

Saturday, November 29, 1851.

Ohio Railroads.

Though not entirely through preconceived action on the part of the different companies, there is now an extensive system of railroads in Ohio, connecting at different points the Ohio river with Lake Erie, and the railways east with those of the States west of Ohio. Ohio is so situated geographically, that the great thoroughfares to our principal seaports, must pass through her borders.

NORTH AND SOUTH LINES.

Of the north and south lines, the first that was finished and opened for use, is the road between Sandusky city and Cincinnati, completed entirely through in 1848. This line is 218 miles long, and is composed of the "Mad River and Lake Erie," from Sandusky to Springfield, 134 miles, and the "Little Miami" from Springfield to Cincinnati, 84 miles. Republic, Tiffin, Kenton, Bellefontaine, West Liberty, Urbana, Springfield and Xenia, are the chief towns on the route.

The second north and south road across the State, the Cleveland and Cincinnati line, was opened throughout in February, 1851. This line is owned by three companies—the "Cleveland, Columbus and Cincinnati" company, from Cleveland to Columbus, 135 miles; the "Columbus and Xenia,"

company from Columbus to Xenia, 54 miles; and the "Little Miami" company from Xenia to Cincinnati, 67 miles. It should be observed, these 67 miles are also part of the Sandusky and Cincinnati route.

The third north and south line, is the "Cleveland and Pittsburgh" road, presenting the shortest connection between the Lake and the river. It is 87 miles from Cleveland to Wellsville on the Ohio river, of which 75 miles are now finished and in daily use, and the remaining 12 miles are to be opened within a few weeks. It strikes the river 22 miles below Beaver, and 17 miles below Pittsburgh, and the company contemplate the extension at an early day, from Wellsville to Beaver, intersecting the Ohio and Pennsylvania railroad at that point. The railroad distance from Cleveland to Pittsburgh by this route, will be 144 miles. This line has a general course south east from Cleveland.

The fourth north and south line extends from Sandusky city (and it may be said also from Cleveland, Shelby being a common point of intersection) to Portsmouth, at the mouth of the Big Scioto river, a distance of about 23 miles. It is composed of three companies—the "Mansfield and Sandusky city" company, from Sandusky city to Mansfield, 56 miles opened in 1846, the "Mansfield and Newark" company, from Mansfield to Newark, 60 miles, opened in 1850, and the Newark and Portsmouth line more recently commenced and not yet finished.

The fifth north and south line, extends from Toledo to Cincinnati, a distance of 200 miles. This line runs from Toledo, through Lima, Sidney, Troy, (and perhaps through Piqua) Dayton and Hamilton to Cincinnati. From Cincinnati through Hamilton to Dayton, a distance of 60 miles, the line was opened this fall, and is now in very successful operation. From Dayton to Troy, the work is just about being put under contract. Surveys have been made from Troy to Sidney. From Sidney northward, towards Toledo, the line has not yet been surveyed, though the country is well known to be of a favorable character. This line will run to Detroit, and at that point it will unite with the Canadian system of railroads—forming the shortest and most favorable connection between Cincinnati, and the Canadian roads.

Before leaving the north and south lines, it should

be mentioned, that the "Mad River and Lake Erie" company have extended their road from Springfield to Dayton, 24 miles, and made a connection with the "Cincinnati, Hamilton and Dayton" company at Dayton; thus opening another distinct railroad connection between Sandusky city and Cincinnati, on which the total distance is 218 miles, the same as by the Little Miami route.

It should also be observed, that owing to the changes of direction at several points on the line of the Cleveland, Columbus and Cincinnati road, it is ascertained that the eastern half of the "Bellefontaine and Indiana" road (which is part of one of the east and west lines) taken in connection with the northern end of the "Cleveland, Columbus and Cincinnati" road at Galion, and the southern end of the Mad River road, at Bellefontaine, presents a shorter connection between Cleveland and Cincinnati, than the route through Columbus. Should the projected straight route be opened from Cincinnati to Dayton, this route will be 15 miles the shortest.

It may be further remarked, that 79 miles of the "Cleveland, Columbus and Cincinnati" road from Cleveland to Galion, constitute part of the great east and west chain of railroads extending from Boston to New York, along the Lake shore, and onward to Indianapolis, Terre Haute and St. Louis.

EAST AND WEST LINES.

No east and west railroad has yet been finished across the State, although several important links, which will hereafter constitute portions of east and west lines have already been opened.

The most important yet finished are, that portion of the Cleveland and Columbus road before referred to, between Cleveland and Galion, and the Columbus and Xenia road, which latter, besides being part of the main north and south line between Cleveland and Cincinnati, is also a link in the east and west lines running eastward towards Wheeling and towards Steubenville, and westward through Dayton to Indianapolis.

The probabilities are, that the first east and west line that will be finished entirely across the State, will be that which passes along the lake shore from the Pennsylvania State-line to Cleveland, thence to Galion, and thence by the "Bellefontaine and Indiana" road to the Indiana State-line, 118 miles from Galion.

It is expected that about the same time, the Ohio and Pennsylvania railroad, extending from Pittsburgh to Galion, will be completed, making the next east and west communication across the State, and bringing the Ohio improvements into connection with those of Pennsylvania at Pittsburgh. The Ohio and Pennsylvania line is to be opened this season to Massillon, 107 miles from Pittsburgh. In a few weeks it will be finished to Alliance, 81 miles from Pittsburgh, when there will be a continuous railroad from Pittsburgh to Cleveland, 136 miles long, of which 55 miles will be on the northern end of the "Cleveland and Pittsburgh" line. This will also open a continuous railroad route, tho' somewhat circuitous, from Pittsburgh, through Cleveland, to Cincinnati, a total distance of 392 miles.

But to proceed with the east and west lines, (regarding the Bellefontaine road as one western continuation of the eastern roads.) The second east and west line, in point of time, which is likely to be completed, is usually called the Lake Shore line, from Cleveland to Toledo, thence to connect with the Southern Michigan railroad, with Chicago, and all the railroads of the northwest. Several routes have been proposed between Cleveland and Toledo, and more than one line in this northern part of the State, may ultimately be constructed, one running through Sandusky City, and another through Norwalk.

The third main east and west line, the "Steubenville and Indiana" road extends from Steubenville to Coshocton, 79 miles, where it forks into two western lines; one running to Newark, in connection with the Newark and Columbus road, and the other running to Mount Vernon and Marion, into connection with the Baltimore and Indiana road. The whole line of the Steubenville and Indiana road from Steubenville to Newark, 116 miles, has recently been put under contract, and the same company have completed the surveys of the line from Coshocton to Mount Vernon. In connection with the "Pittsburg and Steubenville" line, running directly across the big bend of the Ohio, the surveys of which are now rapidly progressing, this presents a very direct route between Pittsburg and the west, and between Pittsburg and Cincinnati.

The fourth main east and west line extends from Wheeling through Zanesville, Newark, Columbus, Xenia and Dayton, westward towards Indianapolis, and southwestward from Newark, or Columbus, to Cincinnati. It is finished from Columbus to Xenia, 54 miles, and nearly finished between Dayton and Greenville, in Darke county. From Zanesville to Columbus, the work is under contract, and rapidly progressing, as well as upon portions of the route between Wheeling and Zanesville. Surveys have also been made between Xenia and Dayton.

The great object of this tier of roads is to effect a convenient connection between the western terminus of the Baltimore and Ohio railroad, and Indianapolis, and the west generally; and also with Cincinnati and the south west. The friends of this line are also looking to a connection with the Hempfield line, running from Wheeling to Greensburg, a point on the Pennsylvania Central railroad, 31 miles east of Pittsburg. But taking Columbus as a point, the same connection would be effected at Greensburg, in a shorter distance, and with more favorable grades.

The fifth main east and west line, or more properly east and southwest line, extends from Wheeling through Marietta to Cincinnati, by the way of

Chillicothe and Hillsborough. Taken in connection with the contemplated railroad from Cincinnati to St. Louis it becomes an east and west route across the State. It is the most southerly of all the east and west lines, and will afford a very direct connection between Cincinnati and the Baltimore and Ohio railroad.

The sixth east and west line is the continuation of the Ohio and Pennsylvania railroad by means of the Ohio and Indiana road to the Indiana State-line in the direction of Fort Wayne, running in a direction west of north. The route has been surveyed and found to be entirely practicable, with favorable grades and curves. This line runs thro' Bucyrus and Upper Sandusky. A considerable part of the route in the western part of Ohio is through a region not yet thickly settled, but in which the land is good, and the people very enterprising; and at no very distant day, this connection, or one passing through Marion, Kenton and Lima, to the same point on the Indiana State-line, will be completed.

There are other railroad projects in Ohio, but these comprise the main lines, and present the fairest prospects of completion within a reasonable period. The local trade and travel which most of these principal leading routes will command, will sustain them handsomely. The through business coming from other States, must be divided among them; and those which enjoy the best position, and are the best managed, will attract the largest share.

There is no longer a doubt that the great east and west line across the State of Indiana, from the western end of the Bellefontaine and Indiana road through Indianapolis to Terre Haute, 155 miles, will be finished early in the fall of 1852. It is already completed westward from Indianapolis to Terre Haute, 72 miles, and eastward from the same city to Anderson, 36 miles. The residue of the route is rapidly advancing to completion, and when the eastern links are brought into connection by a continuous chain, the railroad area of Ohio will be ramified, as it were, into nearly every part of Indiana, Kentucky and Illinois.

Within a couple of years, or less, the closing up of numerous links destined to form parts of the great lines of communication through this section of the Union, will give an impetus to railroad business such as the world has never before witnessed.

OHIO.

Iron Mountain on Lake Superior.

The property known as the Iron Mountain on Lake Superior has changed hands, and is now owned by the Sharon Iron Company, in Pennsylvania. They purpose, in the spring, to build a plank road from the Mountain to the lake shore, and their estimated cost of the iron, when made into blooms at Sharon, (about 75 miles south of Lake Erie,) is made up as follows:

Quarrying or picking up in loose blocks,	
per ton.....	\$ 1 25
Transportation to lake shore.....	1 00
" from lake shore to Erie,	
Pa.....	2 00
" from Erie to Sharon.....	1 00
Converting into blooms.....	12 00

Total cost of blooms per ton..... \$16 25

Juniata blooms (the best made in Pennsylvania, but by no means equal to blooms made from this ore) now sell in Pittsburg at from 55 to 60 dollars per ton.

Iron enough to build the Pacific railroad might be taken from the mountain, and not be missed. It lies three miles from the lake shore. Iron exists there in such abundance, and is of such an extraordinary quality, that, in a late report of the Unit-

ed States' geologists, this prophecy was made in regard to it. Says the report: "This region possesses an inexhaustible supply of iron ore of the best quality, removed from twelve to thirty miles from the lake shore, with a soil by no means sterile, and covered with a heavy growth of maple, yellow birch, pine and oak; and it is to this source that the great west will ultimately look for the finer varieties of bar iron and steel."

Commerce between Chicago and the Illinois River.

Since the subject of holding a convention at some point on the Illinois river for the purpose of taking into consideration the obstacles to the navigation of that river, and to memorialize Congress for an appropriation for the improvement thereof, we have been repeatedly inquired of as to the extent of the trade between our city and that river. In order to place this matter before the public in a clear light and in a shape that will render it accessible for future use, we have devoted some time to an examination of our files for the past three years, and the books in the Collector's office, for the present season, and are able to present the following as the result of our labors.

We first notice a few of the leading articles shipped by the canal, viz: lumber, salt, fish and merchandise:

SHIPMENTS OF LUMBER.

	1849.	1850.	1851
Pine boards, ft.....	25,773,000	38,338,333	47,014,080
Shingles.....	26,560,000	40,153,250	44,819,100
Lath.....	7,984,000	11,208,170	10,633,758

Of the above, the following amounts were landed this side of LaSalle for 1850 and 1851.

	1850.	1851
Boards feet.....	5,642,610	6,911,132
Shingles.....	3,937,000	2,718,000
Lath.....	1,174,800	1,049,600

Which gives the total amount of the several articles reaching the Illinois river, as follows:

	1850.	1851.
Boards.....	32,745,703	40,102,948
Shingles.....	38,271,170	42,101,100
Lath.....	10,033,370	9,584,188

SHIPMENTS OF SALT FISH AND MERCHANDISE.

	1849.	1850	1851.
M'disr. lbs.....	8,322,677	8,804,557	12,130,061
Salt, lbs.....	57,369	23,011	28,606
Fish, lbs.....	1,492	2,158	2,675

Of the above shipments for the current year the following amounts reached the Illinois river:

Merchandise, lbs.....	11,067,512
Salt, bbls.....	24,782
Fish, bbls.....	2,403

The reader will bear in mind that our figures for the current year both in the above tables and those which follow show the business of the season up to November 1st. Should navigation continue open during the month those amounts will be proportionately increased.

The following statement shows the receipt of a few leading articles by canal for the season:

Corn, bu.....	2,253,121
Wheat, bu.....	65,014
Oats, bu.....	175,655
Lard, lbs.....	2,069,625
Bacon, hams and shoulders, lbs.....	978,765
Sugar, lbs.....	3,257,515
Molasses, lbs.....	602,147
Coffee, lbs.....	145,186
Fruit, lbs.....	231,846
Coal, lbs.....	2,990,579
Hemp, lbs.....	891,549
Wool, lbs.....	506,328
Hides and Pelts, lbs.....	554,624

It would be a difficult matter to arrive at the precise amount of each of the above articles which came from the Illinois river. The articles of sugar, molasses, coffee and hemp are exclusively from that source. The bulk of pork, beef, salt, tallow, hides, skins and coal, are also from the river. Oats, wheat and flour are almost entirely from the canal; the St. Louis market having been better than ours for these articles, only a small amount of each came from the river. The bulk of our receipts of corn is from the river. On the first of March last, there were in store at the diffe-

rent shipping points on the canal 326,415 bushels of corn. Our correspondents at these points agreed pretty generally that about one-half of the surplus crop still remained in the hands of the producers. This gives us as the amount which came from the river 1,602,291 bushels.

A rough calculation of the articles enumerated in the last of the above tables gives an aggregate of 70,000 tons; or estimating the average capacity of our canal boats at 70 tons, an amount of freight that would require 1,000 boats to transport. But these articles constitute only a portion of the upward freights, while on the other hand, the downward freights are always fully equal to and sometimes exceed the upward.

It will be seen, by reference to the above tables, that in all those articles in which the course of trade acts steadily in one direction, such as lumber to the South, and sugar, etc., from the South, there is a rapid increase of the quantity passing the river. With reference to other articles, in which our market competes with St. Louis, the quantity varies; but this fact must be considered that whatever diminution the bills of one city show, those of the other will show a corresponding increase. For example: In 1849 there was received at Chicago by canal 560,181 bu. wheat, 717,936 bu. corn, and 7,267 bbls. flour. The next year, the course of trade took the opposite direction, and so much of the stock of wheat for 1849 as remained over winter in the warehouses in this city, went South in 1850—the shipments from Chicago in that direction having been 95,193 bushels wheat, and 34,439 barrels flour.

There is another fact which should be considered in this connection. It is not only the people who live upon the river and those of Chicago and St. Louis, that are interested in this commerce. The products which we receive go to the North and the East, while those which we ship find their way to almost every southern State. Merchandise from the Atlantic cities passes down it for distribution, while the products of the South pass up it for the same purpose. The pine regions of Wisconsin and Michigan are no more deeply interested in the navigation of the Illinois river than the planters of the South, the manufacturers and merchants of the East, and the various land and river transportation companies whose field of operations is upon the same great line of commerce; nor have all these a greater interest in it than the immense flood of travel which twice a year, like a huge pendulum, vibrates from the North to the South and from the South to the North, across the continent.

On the Progress of the Wave System of Naval Architecture.

BY JOHN SCOTT RUSSELL.

The great interest taken by the British Association in this system at its origin, and the numerous experiments which they instituted for the purpose of establishing its truth, and of diffusing information upon it, have rendered it my duty to place on record each year those steps of progress which it has made in affecting the character of practical construction, and especially in giving to steam vessels increased speed, not only without a sacrifice of other good qualities, but with an increase of the sea-going requisites and mercantile points of excellence. At the last meeting I laid before this section an account of the successful introduction of the wave system into practice on several steam vessels at Rio Janeiro, by Mr. Dodgson, who had found the system in all respects successful, and that the vessels which he had built on it had beaten their competitors on the old system. Since that time a treatise on naval architecture, published in America, has been transmitted to this country. It contains drawings of many of the most recent and celebrated vessels constructed in that country. The author of that treatise does not hesitate to avow frankly the general adoption of the principles of the wave system, by the builders of the best and fastest vessels in America. He gives accurate drawing, which are evidently made in accordance with it.

He quotes experiments, as high as twenty-four miles an hour, which speed has been attained by its use. He unhesitatingly declares his own implicit belief in the system and entire adoption of it. In our own country the most eminent builders of fast

steam vessels continue to adopt the most prominent characteristics of the wave system, viz., hollow water lines for the bow, much fuller water lines abaft than forward—the greatest breadth nearer the stem than the bow. I am not sure how far the builders of these vessels would wish it to be understood that they did adopt the wave system: and, I shall, therefore, confine my further observations to vessels which have been built under my own immediate care. During the last year an opportunity has presented itself of obtaining one of the most decided practical experiments on a larger scale regarding the excellence of the new form for steam vessels. It is very rare that in ordinary practice one can obtain an experiment which will exactly determine the relative merits of two different forms of ships, because there is generally some diversity in the application of the power or in the circumstances, as, for example, a difference between the excellence of the engines, which affect materially the result, and which is quite independent of the qualities of the ship.

But if one could get an experiment of the following nature, it would be a most valuable one. If one could take a steam engine of a given power, and supply it with as much steam of a given pressure as the engines could use; and a given pair of paddle-wheels, so as to apply that power in exactly the same way in both cases, and having first tried these engines in a ship built on the old system, if one could then simply take these engines out of that vessel and place them in one built on the new system, of equal or greater tonnage, then if the new vessel being tried in similar circumstances, should be found to excel the old one, we should have a result in a practical form which could not fail to be satisfactory. Such is the experiment which has just been obtained on a sufficiently large scale to be entirely conclusive. A pair of marine engines of 220 horse-power had been working on board a wooden steam vessel of 550 tons, being a proportion of one horse power to two tons nearly. The beam of the vessel was 24 feet, and her draft of water 9 feet. This vessel was built on the old system, according to his own plan, by one of the most eminent builders of steam vessels.

This vessel was placed on the line between London and Antwerp, and realized a maximum speed of ten miles an hour. These engines, with the same paddle wheels, were then taken out of the vessel, and were placed in a new iron vessel, built upon the wave system, by Messrs. Robinson and myself. This vessel was of larger beam and greater length of body than the former, being 570 tons, with 25 feet beam and 9 feet draft. The experiment has now been tried with the same old engines, but repaired and furnished with new boilers capable of supplying the full amount of steam to the engines. The result has been conclusive. The vessel has not been made unusually sharp or fine, but, on the contrary, is a capacious sea-going vessel, with capacity for 150 tons of cargo more than the former vessel. The new form of vessel with the old engines has attained a maximum speed of 15 miles an hour—being a clear gain of speed of five miles an hour. It is important to observe, that where speed is obtained by improved shape of vessel, it is obtained at the least possible first cost and greatest economy in daily use. I have next to report during the past year the first application of the wave system to the construction of war steamers. It had long been supposed that owing to the fineness of water lines of the bows of vessels built on the wave system, it would not be possible for them to carry the same amount of heavy ordnance calculated to fire in a line with the keel as in vessels of the ordinary construction. Even in these it is difficult to carry so large an armament in proportion to tonnage as desirable. It has been repeatedly urged as an objection to the wave formed vessels, that they would not carry a heavy armament. During last year, however, two war steamers have been constructed for a foreign government, of 500 tons, and 160 horse power, upon the wave system, by Messrs. Robinson and Russell. They have been fully armed, stored with provisions and fuel, and tried by a naval commission at sea; and have been accepted as having fulfilled the following conditions of their construction, viz., that they were to carry double the armament of any war steamer of the same tonnage and power in Her

Majesty's navy, and go two knots an hour faster than any vessel in Her Majesty's navy. Dimensions, power, armament, etc.; Vessels 165 feet long, 26 feet wide, 500 tons, engines 48 inches diameter, 4 ft. 6 in. stroke, 160 horse power; armament, four 8 inch guns, 9 ft. 6 in. long; ammunition 100 rounds; fuel, 2000 miles steaming; speed, 15 miles an hour light, 13 miles an hour loaded. I have last to report the trials during the past winter of a yacht, the *Titania*, built for Robert Stephenson, Esq., the eminent engineer, who had confidence enough in the wave system to give it a fair trial on a sailing schooner which he sent round during last winter by the Bay of Biscay to Alexandria, and in which he encountered severe hurricanes in the Mediterranean. The results of the experiments are, that the war vessel has been found to be in every respect, a good sea boat; and contrary to the expectations of many who fancied that the fine bows of wave vessels were only good for fair weather sailing, it has turned out that while in light airs and smooth water, vessels of a lighter build and larger sails may pass the *Titania*, yet that, in any weather stronger than a light breeze, she has beat every vessel she has encountered, including yachts of high reputation and larger tonnage. It thus appears that during 1850-51, very considerable progress has been made in the introduction of the wave principal into practical use.—*London Architect.*

Proceedings of the Franklin Institute.

ON ROLLING TAPERED IRON.

Mr. Charles E. Smith, made the following observations in regard to rolled tapered iron, illustrated by two specimens from the establishment of Reeves, Buck and Co., of Phoenixville.

Taper iron, or iron regularly diminishing in thickness, or width, or both, from one end to the other, has heretofore been made almost altogether by the hammer. The production of any such forms by the rolling mill, has been heretofore thought by many persons, to be impossible.

The principle and the merits of Mr. Clay's patent will perhaps be more readily understood if we first briefly review the nature of the attempts previously made. I believe among the first of these was the use of *eccentric rolls*: but the length of the taper was always limited by the length of the circumference of the roll; and the pressure was so unequal in the different parts of the revolution (the whole taper being necessarily given in a single revolution) that it was soon abandoned.

The next trial was with *bevel wheels*, placed on the heads of the screws which hold down the top roll. This succeeded in part, but it was extremely limited in its application, and required a new pair of wheels for every change in the rate of taper. It was also necessary to reverse the motion of the wheels after the passage of each bar, in order to run up the screws before entering another bar.

Revolving eccentricities bearing on the journals were then suggested, but they were more complicated than eccentric rolls, without possessing any advantages over those in other respects.

Lastly, a *hydrostatic press* was proposed to force down the roller as the iron was passing through, but this was found not to act with sufficient promptness.

Mr. Clay's plan is more simple and more efficient than any of these, and at the same time it is unlimited in the length or rate of taper that may be obtained by it.

The principle on which it acts is that of hydrostatic pressure, or more properly, *hydrostatic resistance*. A small chamber, similar to that of the common hydrostatic press, is set on the top of each housing; the closed end of the press being uppermost, and a plunger entering from below; but instead of water being forced into the press, the chamber is at the first filled with water, and the pressure of the iron in passing between the rollers, tends to lift the top one, which is held down by the plunger. An escape pipe provided with a valve, is inserted into the top of the chamber. When any upward pressure acts on the top roll, it is communicated by the plunger to the water, which escapes through the valve, and the roll rises.

When the valve is partially closed, the water escapes more slowly; and the rise of the roll, and,

consequently, the taper of the iron, are more gradual.

Any rate of taper may thus be had by regulating the size of the opening of the escape valve. If the water is all driven out before the bar is entirely through the rolls, the top roll ceases to rise, and the iron becomes parallel from that point. Then, if the ends of the bar be reversed, and it be again passed between the rolls, the parallel portion will become tapered; thus we can get a bar—

First, Regularly tapered from end to end.

Second, Tapered part of its length, and parallel the remainder.

Third, Tapered from each end to a point any where in its length.

Fourth, Tapered at each end and parallel in the middle.

Fifth, Alternately tapered and parallel; (by alternately opening and shutting the valve as the iron is passing through the rolls.)

Sixth, Tapering in an increased or diminishing ratio, (by gradually opening or closing the valve as the iron goes through.)

The principal use to which this iron has been thus far applied, is to form iron knees, for ship building; the storage of a vessel constructed with iron knees being about twelve and one-half per cent. more in bulk than that of one built with wooden knees. The arms of paddle wheels for steamers are flat bars, tapered upon either of their sides. Short switches and pointers on railroads are regular tapers. Locomotive pedestals are made from bars tapered at each end and parallel in the middle. The common carriage axle is square next the journal, and tapered in thickness to the middle. Straps for walking beams and connecting rods and all kinds of levers are tapered.—Anchor shanks are tapered "rounds," which have been passed through flat rolls, and have thus acquired an oval section. Windlass necks are tapered "squares." There are many things now made of common parallel bars of iron, which would be made of taper iron, were it not that the cost of forging is greater than that of the superfluous iron now used.—*Journal of Franklin Institute.*

Coal in Massachusetts.

The Pottsville Mining Journal gives the following account of the operations of the Mansfield Mining Company, at Mansfield, Massachusetts.—It appears that the coal was first discovered in that town about 16 years ago, on the farm of Mr. Alfred Harding. A futile attempt was made to work it, but want of skill and capital compelled its abandonment until the formation of the present company in 1848, since which time considerable progress has been made. The main shaft is 171 feet in depth. From the bottom of this other shafts extend horizontally, one of which, leading south, is 450 feet long, one leading north 250 feet, another 73 feet, another leading west 150 feet, following a bed of *free burning red ash coal* from 3 to 4 feet thick; from this bed the company have already mined *eleven hundred tons of coal*.

The total length of the shafts is 1100 feet, and their diameter 6 feet.

The fine dust resulting from the screening is used under the boilers of the engine, and is the only article of fuel used, this dust generating sufficient steam to carry on all the works.

The lands of the company lie in a body in West Mansfield, about 2 1-2 miles from the depot, and the eastern extremity of them touches the Boston and Providence railroad, near the junction of the Taunton branch. The company own the perpetual right, free from all incumbrances, over 1500 acres of anthracite coal land, in the town of Mansfield, which has been selected by Thomas S. Ridgway, Jr., Esq., a practical geologist from Pennsylvania.

This company, it is expected, will be able, in time, to supply Boston with all the coal that is necessary for that city.

Vermont.

Central Railroad.—The trustees under the mortgage have issued their report in pamphlet form.—It presents a clear and full statement of the present financial affairs of the company. The following facts and conclusions are drawn from the report:

FUNDED DEBT.

Bonds of 1847, due July 1, 1851.....	\$582,000 00
Bonds of 1850, due January 1, 1856....	280,300 07
Interest due shareholders.....	32,477 07
	<hr/> 894,777 07

LIABILITIES.

Treasurer's notes and acceptances.....	1,284 705 86.
Sundries as per schedule.....	42,585 14
	<hr/> 1,327,291 00
Additional liability for the Canada road.....	136,700 00
Amount required to finish and equip the road.....	158,249 67
	<hr/> 2,517,017 74

RESOURCES.

Seven per cent. mortgage bonds.....	2,000,000 00
Cash; notes receivable, (secured by stock collaterals;) amount due for assessments; amount (\$75,514 60), due from Canada railroad; award against Belknap's estate, and capital stock forfeited and reverted to the corporation. These several assets, in the opinion of the trustees, can be made available on or before July 1st, 1852, for.....	604,711 00
Vermont and Canada railroad, for endorsements.....	136,700 00
	<hr/> 2,741,411 00

Total resources to meet liabilities....2,741,411 00
The two millions of 7 per cent. mortgage bonds, on a property costing seven millions of dollars, and now earning nearly seven thousand dollars per month, ought to command prices fully equal to those of the Ogdensburg and Rutland railroads.—If this should prove to be the result, the resources will pay off all the liabilities, and leave a surplus.

RESOURCES NOT AVAILABLE AT PRESENT.

Grand Junction railroad, 1150 shares at \$100.....	\$115,000
Vermont Valley railroad, 135 shares, at \$100.....	13,500
Vermont and Boston telegraph stock.....	6,000
	<hr/> 134,500

After the disposal of the mortgage bonds, the cost and position of the entire line, through to the Ogdensburg line will stand as follows:

Mortgage bonds at 7 per cent.....	\$2,000,000
Vermont and Canada road.....	1,000,000
Vermont Central road, 100,000 shares at \$50.....	5,000,000

Cost of 160 miles of road, at \$50,000 per mile.....8,000,000

Virginia.

Richmond and Danville Railroad.—The Danville Register, of the 15th inst., gives a full account of the recent meeting in the town, of the stockholders of this company, together with the report of the president and chief engineer. We are gratified to learn from these sources, that, notwithstanding the discouragements arising from the failure of those so greatly interested in the speedy execution of the road promptly to subscribe the requisite means, the friends of the road and officers of the company exhibit great energy and perseverance in the use of means at their command, and their commendable zeal will yet, it is hoped, be attended with success. More than \$2,000 above the expenses of the company appear to have been realised to its revenue from the small portion of the road now in use and in the brief time since the completion of the 43 miles now in running order. About \$80,000 are wanting to meet existing liabilities, and to complete the road to Staunton river. The revenues of the company, to 1st October, 1851, are \$19,954 54,

of which, \$7,063 80 were for passengers.—*Farmville Republican.*

Louisiana.

New Orleans and Jackson Railroad.—We learn from the Jackson Mississippian, of the 8th, that Col. C. S. Tarpley, President of the Board of Commissioners, has just returned home after an expedition of two weeks through the counties of Copiah, Franklin, Amite, Pike and Lawrence, and in several places in each he has met and addressed the citizens upon the subject of the railroad from New Orleans to Jackson. The Mississippian says:

"Col. Tarpley represents the state of public feeling as fully prepared for this great enterprise, which is destined to shed more permanent advantages upon the State than any other that has ever been projected. At every place the subscriptions for stock fully met his expectations, and he informs us that he has learned from several places that they have been more than doubled since his return. The controversy about the route has pretty well subsided, and a general feeling seems to prevail to run the road the *shortest and cheapest* route, well knowing, as the people do, that very great advantages must accrue to the country generally from the railroad, and that it is utterly impracticable to locate it so as to suit the private convenience of each individual. In Copiah the best feeling prevails, and the subscriptions may be fairly set down at \$100,000. The same may be said for the eastern portion of Franklin, and also for Pike. In Amite, there is still some difficulty about the route; but we are satisfied that when the surveys shall have been completed, and it is found that the people of Liberty can have a depot within twelve or fifteen miles of their beautiful village, that they will give the road a liberal encouragement. And from the great amount of wealth in that county distributed among an intelligent, liberal, and high spirited population, we confidently expect Amite to take at least \$200,000 worth of stock in the road. The same may be said of Pike. The people seem to have abandoned the long cherished scheme of terminating the road at Madisonville, and notwithstanding the effort made by sundry interested individuals in that county to embarrass the operations of Col. Tarpley, he informs us the people were liberal in their subscriptions, and manifested every disposition to advance the great work in contemplation. They prefer that the road should go right into the city, rather than risk the delays and uncertainties of lake navigation. In old Lawrence, both at Monticello and Brookhaven, the citizens go for the railroad with a rush. They want it to run through the former place, if possible, but if not, then they want the road wherever they can get it through their county. The subscriptions in Lawrence amount to over \$100,000. On Monday last, the people were to have voted as to whether the county should take \$400,000 of stock, with a fair expectation of succeeding by a large majority. If they should, Lawrence may be set down as the banner railroad county—at all events until Copiah and Pike are heard to speak in the same language."

The Mississippian then asks—"What will Hinds county do?" and continues:

"Will she permit the piney-woods counties to send the iron horse snorting from the emporium of the south, with its thousand blessings to our State capital, and yet do nothing by way of assistance? Let not this be said. It is proper to mention here that books of subscription at New Town and Line Store, are rapidly filling up. It is expected that at least \$75,000 of stock will be taken at the two points alone. Now let Jackson, which will receive more benefit from the road than any other point, show how far she is willing to aid in this great enterprise, which when completed will build up our city, and enrich our people. Let a meeting of the citizens be called by our most influential men, and let us compare notes, and see what each one is willing to do in furtherance of the work. The Louisiana surveys are completed to the State line, intersecting the same in the edge of Amite county, on Terry's creek. Col. Walter, the principal engineer, represents the route from that place to New Orleans, west of Lake Manripas, as being exceedingly favorable for a road. Our corps of engineers, headed by Col. Harrison, are now surveying the

route from the State line to Jackson, and may be expected here early in December.

Col. Tarpley deserves the unbounded thanks of the people of the State for his services in this great enterprise. Himself its projector, he has devoted to it his time and talents, laboring with unflagging energy under the most unpropitious circumstances. The dormant energies of our people are now being fairly aroused, and we indulge the confident hope that complete success will soon crown his labors."

This is welcome news from Mississippi, and we hope it will have the effect to keep alive the hopes of the friends of well considered railroad enterprise in New Orleans, to cause renewed exertions on their part, and to arouse the dormant energies of our population, so that in good time we may see the accomplishment of this necessary, and in every way beneficial project, by which railroad communication between New Orleans and the heart—the capital—of Mississippi, will become a great fact.
—N. O. Com. Bulletin.

Ohio.

Cleveland, Painesville and Ashtabula Railroad.—The first thirty miles of the most important link in the chain of railway along the southern shore of Lake Erie, connecting the east and the west, is completed. On Saturday the iron horse ran from Cleveland to Painesville, and back, conveying a party of railroad gentlemen and members of the press, in a beautiful passenger car from the Cleveland manufactory of Messrs. Stone & Witt. On the way down, the connecting rails were laid, which detained the party but a few moments; an elegant repast was discussed in the travelling "Revere House" of the track-layers, while under motion; and the "Man with the Wheelbarrow" was propelled to Painesville, on his way to rouse the "Sleepy Borough." The track was found to be remarkably smooth for a new road, and all the work of the most substantial character.

Since the commencement of active operations ten months ago, the construction of the road under the general contract with Messrs. Stone & Witt has been prosecuted with remarkable energy, and is an unusual example of works without words. Within that period the right of way has been principally secured, over sixty miles have been graded, and all the heavy masonry completed except at Conneaut—the thirty miles from Cleveland to Painesville completed and run over—twelve miles more to Centerville will be finished about the 10th of January, and perhaps the iron laid to Ashtabula before spring, though not certainly. The Willoughby crossing abutments contain 800 perches (25 feet,) the Painesville 2100 perches, and the Ashtabula 2000 perches of stone masonry, that challenge comparison with any in the west.

The bridges over these crossings are to be constructed by Messrs. Stone & Witt on Howe's plan, and are, at Willoughby, 170 feet one span; at Painesville 800 feet, five spans, and 93 feet high; at Ashtabula 780 feet, five spans, and 65 feet high; at Conneaut 830 feet, five spans, and 65 feet high; Euclid Creek is crossed by a 50 foot arch culvert. The only heavy embankment is at the Willoughby crossing, and contains one hundred thousand yards.

The timber work at Painesville will be completed in about forty days, that at Ashtabula and Conneaut not until next spring.

The character of the road is such as to render its future expense for repairs light, and its running peculiarly safe and economical. There are but 15 miles of "clay road" on the line, the remainder running through sand and gravel, so that its "ballasting" will be but little extra labor. The maximum grade is sixteen feet to the mile, and the sum of curvature between Cleveland and the State-line, a distance of seventy-two miles, is 242°, or about two-thirds of a circle, and that is confined almost entirely to points near the stations at the great crossings, the intermediate distances being principally straight. The ties are almost exclusively of white oak, and for miles together average sixteen inches surface each, being the heaviest we have ever known.

Soft water, with a head of from 30 to 80 feet, and filling from 1 and ½ to 2 inch pipe, is procured at convenient distances of 10 to 15 miles, the value of which no one but an engineer can fully appreciate.

In order to complete the communication with Erie, the Cleveland, Painesville and Ashtabula railroad company have purchased and taken a transfer of nearly all the stock of the Franklin Canal Company, and have assumed and will immediately complete the construction of that road from the State-line to Erie—25 miles. The right of way is all secured, and the grading two-thirds done; a large portion of the bridge timber is also on the ground.

The subscription list of the Cleveland, Painesville and Ashtabula railroad company is one of the most prompt, and it is a gratifying fact that with an unfinished road, the stock has remained at par, and for what work the company have so far done, they have not yet raised one dollar on their bonds, and but a small amount on temporary loans.

No road now constructing in the United States has so fair and so flattering a prospect for a large and profitable business as that portion of the "south shore railroad" lying between Cleveland and Erie. Few are aware of the importance that Cleveland is about to assume as a focus or the common centre to which the western southwestern, and southern systems of railroads point on their way to the east and the northeast. A glance at the map will discover—first, the Michigan, southern and northern Indiana railroad connecting with Chicago and Galena, and bearing the immense travel and commerce of the far west; next, the Bellefontaine and Indianapolis road, which draining the centre of Indiana, and intersecting the Cleveland, Columbus and Cincinnati railroad at Galion, gives us all its business, drawn towards the northeast—next, the Cincinnati, Hamilton and Dayton railroad, and Mad river and Sandusky road, which reaches Cleveland by the construction of the Junction railroad from Sandusky here—next, the Cleveland, Columbus and Cincinnati road, the immense business of which has since its opening far exceeded the expectations of its most sanguine advocates—again, the Newark and Mansfield railroad, intersecting the Cleveland, Columbus and Cincinnati railroad at Shelby, will thence send its passengers to Cleveland—and last and farthest east, the Cleveland and Pittsburgh road with its Akron branch penetrating the richest portions of northern Ohio, will throw a large portion of business for the northeast into this city.

Thus accumulated and centered in Cleveland, it will thence pass over the single line from Cleveland to Erie, and again diverging from Erie, Dunkirk and Buffalo, will seek the various destinations of Philadelphia, New York and Boston; the only competition being the steamers on the lake, and many a storm-tossed traveller this fall has wished the road completed to enable him to make his choice.

There will be a large increase of business upon the completion of the Erie and Sunbury railroad, which will no doubt be constructed at an early day.

We have said that the construction of this road is an unusual example of works without words. The character of the men engaged in it explains why. The President of the company, Hon. Alfred Kelley, is the acknowledged internal improvement King of Ohio. Mayor Case, Vice President, is the acting President in the construction of the road. He has devoted his time, talents, energy, great intelligence, and sound judgment, aided by an enterprising Board of Directors, to pushing the work forward, and his efforts have been ably and satisfactorily seconded by the experienced engineer-in-chief, Mr. Beckwith, the resident engineer, Mr. Collins, and those widely and favorably known railroad builders, Messrs. Stone and Witt. They have employed men of like stamp. Mr. D. H. Lockhart, the builder of the masonry at Painesville, and of the heavy Rocky river viaducts on the Cleveland, Columbus, and Cincinnati railroad, is a gentleman whose ability, energy and honesty, place him among the foremost of reliable men—one who never yet failed to accomplish what he undertook, to the satisfaction of all concerned. The wood work, by Mr. Weeks, is of the best. Messrs. Smith and Ackley, need no better recommendation than the masonry they have completed at Ashtabula, nor no other guarantee of the manner in which they will finish the heavy work at Conneaut. The brothers McLaughlin, Mr. Burke, and Messrs. Brown, Collins and Gibbons, are also con-

tractors whose industry and ability have been of great service in pushing forward the work, and will entitle them to confidence wherever they may hereafter engage. Mr. H. M. Reynolds, the bountiful host of the railroad "Revere House," is one of the oldest and most energetic railroad men in the country, and has no superior as a track layer.

The line was first run by Mr. F. Southgate Smith, as chief engineer, an officer of great ability, but who left the road last spring, for a situation at Washington. The lamented Mr. Harbach, as consulting engineer, made the first report to the company.

The Station House at Painesville is a model one, combining convenience, neatness, and good taste.

The cars will commence running regularly to Painesville on Thursday.—*Cleveland Herald.*

European and North American Railroad.

The recent movements in the British Provinces, indicate a decided and salutary change of policy on the part of those who have recently advocated the claims of the Halifax and Quebec railway; and there is now every reasonable assurance that, so far from their being any serious difference of opinion on the principal questions heretofore in issue in regard to British American railways—all interests may yet be brought into harmony and concert.

The line of the Halifax and Quebec railway, as recommended by Major Robinson, was to pass along the shore of the Gulf of St. Lawrence, keeping as far from our frontier as possible, and making the distance 635 miles. The principal reason assigned for this absurd policy, was its military advantages, in case of a war with the United States—allowing Great Britain to maintain a connection between her different North American colonies, without subjecting the line to the dangers of invasion or interruption.

When this scheme was abandoned in 1850, the Portland convention was called—and the plan of the European and North American railway, adopted. Hon. Joseph Howe was sent to England, to raise funds for the construction of that part of the European and North American railway which is in Nova Scotia. Failing to gain the ear of the British Ministry in support of the scheme, Mr. Howe was reluctantly compelled to yield to the necessity of supporting the Halifax and Quebec line, or fail entirely in his mission. But so distasteful was the proposal of Earl Grey, to the Provinces generally, that New Brunswick promptly rejected the offer, and gave her whole support to the European and North American railway.

Canada, however, apparently gave her support to the plan of Earl Grey, and appropriated \$16,000,000 to construct a "main trunk line of railway throughout the length of the Province."

This bill was most ingeniously framed, to conciliate all interests, and included a provision giving a guarantee of principal as well as interest to the St. Lawrence and Atlantic railroad, the other roads already commenced, under the assurances held out by the Facility bill of 1849.

This law of 1851, vested all the powers granted, in support of the Halifax and Quebec line, in the Governor in Council, and authorized said line to be built on the joint account of the three Provinces, in equal proportions, or by each Province constructing that part within its own territory, or "by making such other engagements for the construction of the said railway as may be agreed upon with the said government of the United Kingdom and of the said Provincial governments." This bill was carried by a decided vote, after a most strenuous opposition, but the local interest affected by the bill, was too great to be resisted.

The St. Lawrence and Atlantic, the Great Western, and the Toronto and Simcoe companies having secured the enlarged guarantee by this bill, became at once, interested, to defeat the expenditure of a dollar below Quebec, and the friends of the whole line from Quebec to Hamilton, have the same interest at stake. Whatever is absorbed by the Halifax line, diminishes the support of the government to their own, to the same extent. The press of Canada, west of Quebec, has taken the ground of decided opposition to the Halifax line, and the repeal of so much of the law of 1851, as authorizes this expenditure, is now demanded.

The retirement of the Hon. Mr. La Fontaine and the Hon. Mr. Baldwin, from the ministry, last summer, required the construction of a new cabinet, with Hon. Francis Hincks at the head, and in which Hon. John Young, of Montreal, is made Commissioner of Public Works.

Mr. Young, in 1850, in his note to Mr. Poor, among the published proceedings of the Portland convention, expressed himself in decided terms in opposition to the Halifax line. His acceptance of a place in the ministry, might seem to pledge him to the support of the Halifax railway, and his constituents in Montreal, recently requested his views upon that question.

Mr. Young says, in reply, that he "is not in favor of the line proposed by Major Robinson," but of a line "by the way of the river Du Loup and the Grand Falls, and from thence intersecting the European and North American railway at or near St. John."

Meanwhile, Nova Scotia has been called upon to act upon the matter, and the recent election, finds Mr. Howe in a doubtful house if not in a political minority. Mr. H. has introduced his bill, in the general terms of the Canadian law, but provides for nothing more than an extension of the line to the New Brunswick frontier, a distance of 124 miles, instead of attempting to assume one third of the 635 miles contemplated by Major Robinson's survey.

What action may be taken, in Nova Scotia, we are not at present assured, but from the altered tone of the ministerial press in Nova Scotia, it is quite evident that the original scheme of Earl Grey is not to be insisted on. The Hon. Mr. Hincks has recently expressed himself in favor of the line proposed by Mr. Young, and we cannot doubt that this point is now satisfactorily agreed upon.

The question then returns, what course will New Brunswick adopt? Her resolute stand, promptly and fearlessly taken, has changed the whole course of British policy, and the thanks of the whole of British North America are due to Messrs. Botsford and Jardine, of the executive committee of the European and North American railway, for their forecast and sagacity in meeting this question at the outset, and successively opposing its adoption. That the question in New Brunswick is entirely changed by the course of recent events, is sufficiently apparent to all; and if the line now proposed by Mr. Young is agreed to, her interests will be fully satisfied in the matter.

A line of railway from Halifax to St. John city, and thence to Quebec, following the St. John's valley, is an enterprise which should command support, and the completion of a line from St. John to Calais and Bangor may be regarded as one of national importance, and within our own territory, should command the support and countenance of the General Government. It may perhaps turn out, that New Brunswick will prefer to make the European line, form her eastern frontier to Calais as part of the trunk line to Quebec, and make the St. Andrews and Quebec line a part of the scheme, with a branch to Frederickton. This plan has advocates and supporters. But the natural line from St. John to Quebec will take the valley of the Nerepis and the Oromuctoo, to a point at or near Frederickton, and thence on the most direct practicable line to the Grand Falls.

If the British Provinces, however could be induced to disregard political considerations and be governed by the natural laws of business,—the obvious laws of physical geography, they will seek to find the most direct route to Quebec, through the northern part of Maine. Our state would we think readily grant them the right of way, and the jurisdiction over it, with the assent of the General Government and in this way the city of St. John, would at once become the natural market of the whole St. John valley. The nearer proximity of Bangor and Calais to Woodstock attracts this trade or a portion of it to our own ports.

At any rate, there seems to be every assurance of carrying out the plan of the European railway; for we cannot believe that any hesitancy will occur in the movements of the people of Maine, as soon as the assurances of meeting our line at the boundary, are made certain.

Nova Scotia will unquestionably agree by nearly a unanimous vote in support of the policy now put

forth, which limits her expenditures to the construction of her own line within the limits of the Province.—Portland Adv.

Georgia.

ATLANTA AND LAGRANGE RAILROAD.

Report of the President to the Stockholders.

Though your annual convention should have been held on the 25th day of May last, it was deemed expedient to postpone the meeting until the completion of the road to Newnan. This suited better the convenience of many of the stockholders, and no emergency rendered an earlier meeting of any importance to the interests of the company.

The reports of the Chief-Engineer and Treasurer, accompany this report. The former exhibits, in a very clear and satisfactory manner, the progress and prospects of the work, and the latter, in like manner, exhibits our receipts and disbursements, and the present reliable resources of the company.

In the present state of progress, the entire cost of our work may be estimated without much danger of material disappointment; and the Board are gratified to find, by the report of the engineer, that the estimate for the entire work to West Point has only been increased the sum of \$27,000, and this mainly from unexpected discoveries in the character of excavations. When the great increase in the price of labor, and of almost every element entering into the cost of railroad construction, is considered, this result must be gratifying to the stockholders, and give them increased confidence in the value of their investments.

The progress of the work has, however, been much retarded by the causes named in the engineer's report. The largest contractor forfeited his contract, and abandoned his work at a season of the year when it was impossible to let at anything like reasonable rates. This misfortune will delay the superstructure beyond Newnan longer than was expected. It is hoped, however, that in a short time, labor will be more abundant and more easily commanded; and that the superstructure may be re-commenced at Newnan late in the present year, and progress with little or no interruption, until it reaches LaGrange.

To guard against any interruption to the progress of the work, the state of our finances requires early attention. It is the policy of the company to operate alone upon cash resources, and to contract no debt beyond what will be redeemed by the available subscriptions to the stock of the company. Not much effort has been made to increase subscriptions to the stock since the last convention. It was hoped and believed that an investment so undoubted on the score of safety and profit, would have secured an increase of our means by subscription, fully as fast as the wants of the company would require. Available subscriptions have been increased since the last convention, about 150,000. This would have nearly completed the road to LaGrange, but for the increase in cost, from the causes before alluded to. It was necessary, however, to use a part of these resources for an outfit, and it was deemed expedient to make a further encroachment upon them, for the purchase of iron. Iron is so important an element in the cost of railroads, and is subject to such sudden and heavy fluctuations in prices, that it was deemed a matter of first importance to secure it at the lowest cost, even at the hazard of some loss of interest. Accordingly, the company has purchased, and nearly paid for, the iron (except a few hundred tons) to extend over the whole line to West Point. This has pressed heavily on its present resources, and makes an appeal to the stockholders absolutely necessary. As the stockholders are generally abundantly able to pay up their subscriptions, the Board have an abiding confidence, that the call for the last installment will be promptly responded to.

Should the expectations of the board be realized, the work may progress without delay, at least as far as LaGrange. Though the subscriptions increase slowly from the present stringency in the money market, yet the directors confidently believe that the trifling amount now needed to build and equip the road to that point, will be made up in due time, if the present subscription can be made available. To enable persons of small income to

subscribe—to put all stockholders strictly on the same footing, and the more accurately to ascertain the actual outlay (principal and interest) to the Stockholders, the company, in its first organization, resolved to pay interest half-yearly to the stockholders from the date of the payment of their subscriptions, till the road should be in profitable operation. This policy, though it will increase the stock, has not heretofore, nor will it hereafter, take much from the means of the company. The stockholders are generally willing to take stock for their interest, and in some cases, to add a further subscription. This demand will, therefore, not hereafter be felt by the company, especially as it will certainly be more than balanced by the income of the road.

The road is now doing a profitable business to Newnan; and the directors agree with the engineer in his opinion upon the future prospects of the road. Rival roads may be built, that will share with us the travel from a distance, but our location must always give us a fair proportion of it. This, however, has never entered into our estimates as a certain element of profit. No road should ever be built with a view to investment, without the more certain reliance of a profitable domestic trade, and the travel it carries with it. In this respect, no road in the south offers a more certain investment for the regular payment of profits. A reference to the map, and a knowledge of the country, must afford satisfactory assurances to all, that no road, either built or contemplated, can reduce our receipts below a fair remunerating profit upon the capital to be expended upon it.

The directors deem it of much importance to the company to push the work to completion, and especially, that there shall be as little delay as possible in reaching LaGrange, as much dead capital is lying unproductive between Newnan and that point. The following rough sketch will exhibit with sufficient accuracy for all practical purposes, the means necessary for that purpose:

TO REACH LAGRANGE.

Revised estimate of engineer. . .	\$685,000
Paid for iron beyond LaGrange. . .	28,000
Three locomotives, two passenger and two baggage cars.	30,000
Subscriptions.	\$743,000
	648,000
	\$95,000

It is believed that this sum may be reduced by a further subscription of the amount due for freight on iron from Charleston.	\$24,300
Net income beyond the interest that will not be taken in stock.	35,000—59,300
	\$35,700

With the aid of thirty-five thousand seven hundred dollars, it is believed that the road can be carried without interruption to LaGrange, with the partial outfit above specified, and 625 tons of iron yet on hand.

TO CARRY THE ROAD TO WEST POINT WITH FULL OUTFIT, ETC.

Balance above.	\$35,700
Engineer's estimate from LaGrange to West Point, including bridge and depot.	180,000
Outfit complete.	106,000
	\$321,700
Deduct surplus iron.	\$28,000
Partial outfit on hand.	30,000
	\$58,000

To finish the road to West Point with outfit complete. \$263,700

The directors have made the above exhibit to the stockholders in convention, that they may take such order, and give such instructions for the future progress and management of the work as to them may be deemed expedient. The directors will only add, that they feel no apprehension of failing to reach LaGrange with the present subscriptions, if they be promptly met. Some defaults there doubtless will be, but other pledges to sub-

scribe, not now upon the stock book, will fully make up the deficiency from that cause.

All of which is respectfully submitted by
JOHN P. KING, President.

Louisville and Nashville Railroad.

We are pleased to learn that the committees of both Houses of the Tennessee Legislature have reported a bill authorizing the Louisville and Nashville Railroad Company, as organized under the Kentucky Charter, to construct the road from the State line to Nashville, and on terms entirely acceptable to the Company.

Mr. Shreve, the President, and Mr. Robinson, the engineer of the Louisville and Nashville Railroad Company, have been in attendance upon the Legislature at Nashville and the gratifying result announced above, is doubtless in some degree, to be ascribed to their influence and exertions. When this resolution was passed, there was about \$40,000 of Scrip outstanding. Now there is about \$12,000 out, and there is nearly \$100,000 of taxes for the year to be collected.

Intelligent members of the Council think that by the next meeting of the Boards, there will be several thousand dollars of cash in the Treasury subject to warrants, and that thereafter the receipts will be sufficient to liquidate all current expenses, and redeem all warrants and outstanding claims of the year.

It will be seen too from the proceedings of the last meeting of the Councils, that there is some \$10,000 of cash, and \$10,000 and over of other assets in the Sinking Fund at this time—enough to pay all the January interest on the city funded debt, and all the principal of the debt chargeable on the Sinking Fund due within the present [city] fiscal year.

Thus it will be seen that not only is our city in an unusually favorable condition financially, but we may expect soon to see her permanently placed on a cash system of payments instead of the ruinous and unjust plan of issuing scrip, which must go to the monied speculators at heavy discounts, which fall heavily upon the poorer class.—*Lou. Cour.*

Ohio.

Wilmington and Zanesville Railroad.—We are gratified to learn that the Cincinnati, Wilmington and Zanesville railroad company have contracted with A. DeGraff & Co., of Dayton, for the construction of all that portion of the road advertised for contract, extending from Morrow on the Little Miami railroad to Lancaster, a distance of 89 miles. The contract embraces the completion of the work in all respects—the company furnishing only the rails, chairs and spikes. The work will be finished in July, 1853.

The surveys of the line from Lancaster to this place are rapidly progressing, and we see nothing to cause a change in our opinion, that it also will be ready for contract by Christmas. That when the surveys are finished it will be speedily let, we little doubt. True, the company have deemed it to be indispensable to require a preliminary subscription, as shown by the subjoined resolution, but we cannot for a moment suppose that, in a populous and rich community like ours, with such an important stake as it has in the prompt and successful completion of this work, the conditions fixed very properly by the company will on our part fail to be complied with. The resolution alluded to, adopted by the Board at its meeting on Wednesday last, reads as follows:—

Resolved, That the interest of this company require the location of that portion of the road lying between Lancaster and Zanesville, as soon as the necessary surveys are completed and the valid subscriptions in Perry and Muskingum shall reach \$100,000 for the former county and \$200,000 for the latter.

In Perry the amount fixed will undoubtedly be obtained upon either of the routes through that county. In this county, the amount lacking should be at once raised, in order that the work, which will be of a difficult character, may be let for contract without delay. The county and city subscription amount to \$125,000, and the private stock about \$8,000, making say \$133,000 unconditionaly subscribed. The town of Putnam has also vot-

ed \$25,000 conditionally. Our readers now see how much remains to be done. If they think it worth while, they can make the figures of the company good in 48 hours. Will they do it?—*Zanesville Courier.*

Cincinnati and St. Louis Railroad.

The Louisville Courier has an article confirmation of that which we recently copied from the St. Louis Republican, stating that a contract had been concluded for the construction of that portion of the great Straight Line railroad extending from Cincinnati to St. Louis. The Courier does not over estimate the value of this work when it says—

"The importance of this road does not admit of a question, and the company have certainly been most fortunate in being able to contract at once for its entire completion with a firm or association whose ability to fulfil their engagements is said to be beyond dispute. Illinois and Indiana will derive almost incalculable advantages from this road, while Cincinnati will share largely of its benefits, as the terminus of the great thoroughfare on the Ohio river. These great strides of our sister States towards annihilating distance, by means of the iron horse, should stimulate us, as well as Tennessee to push forward our railroad projects with renewed energy and a more determined spirit. The construction of railroads is no longer a debatable question of policy, but the State that would preserve her prosperity, and secure her future progress in a comparative ratio with her sister States, must embark in similar enterprises from necessity. And while we congratulate the friends of the above road in their success, at the same time admonish our own citizens, that it behooves us to follow their example, by pushing forward our roads in all directions."

As we have heretofore remarked, the only link unprovided for in the great chain of railroads which is to unite Baltimore with Cincinnati and St. Louis, is that extending from Three Fork, on the Baltimore and Ohio railroad, to Parkersburg. This link it is the province of Baltimore to care for, and provision for its completion at the very earliest day should be made promptly and liberally.—*Baltimore American.*

Pennsylvania.

Reading Railroad.—We give the following statement as to the income of this road for the year ending November 30th, 1851.

Net earnings to 1st October.....\$819,891 34
Estimate for October and November.. 200,000 00

Interest on debt.....\$613,266 00
Sinking Fund..... 100,000 00

Dividend Fund.....\$306,625 34
"on prefer'd stock, \$112,050 00
"on common stock
4 per cent..... 166,393 28
State tax on Div'd.... 13,920 00

Surplus.....\$14,262 06

This it is thought will give a dividend on the common stock, on the first of the year.

A Railroad from the South Shore Road Approaching Detroit.

It will be recollected that several years since, a charter for a railroad, was granted from Monroe to Havre, a village plotted out by the Wadsworths in 1835, below Manhattan on the Maumee river, the charter of which is said to be still valid.

We learn that some arrangement is being made by the Junction railroad company in Ohio, for their track to end at Havre and continue to Monroe under the old charter granted in the State.

Then, we must have a road from Monroe to this city, by the extension of the Port Huron and Detroit charter to Monroe.

With the Canada road finished—the Pontiac extended—the Port Huron completed—the Central now under way, and the South Shore road met by a road from this city to Monroe, we should be well provided and the engine bell and the snorting of

the steam-horse would be heard every moment throughout the day, as is now the case in Boston. Five years, will witness it. Mark the prophecy! Put it down as a fixed fact—it is no air castle.—*Detroit Tribune.*

Baltimore and Susquehanna Railroad.

This road continues to do an active and steadily increasing business, both in freight and passengers, and with a corresponding increase of revenue and profit. Our readers will peruse with interest and gratification, the following statement, exhibiting a comparison of the receipts of the company for the months of July, August and September, 1851, with those of the same months in 1850:

1850.		
	Passengers.	Burden.
July.....	10,206 90	12,826 29
August.....	12,535 63	16,761 72
September.....	8,098 27	14,658 37
	30,840 20	44,246 38
1851.		
	Passengers.	Burden.
July.....	12,071 67	15,500 47
August.....	13,710 67	20,573 70
September.....	9,116 51	16,756 17
	34,898 85	52,830 34
	30,840 20	44,246 38
Increase.....	\$4,058 65	\$8,589 96

We are also enabled to publish the following statement of the tonnage transported over the road during the late month of October.—*Baltimore Patriot.*

Massachusetts.

Eastern Railroad.—We understand that negotiations are in progress, and nearly completed, for bringing the Eastern railroad into Boston, over the route of the Grand Junction railroad, passing alongside of the main road, and terminating on Haverhill street, on the easterly or westerly side of the main track. The ferry property, owned by the Eastern railroad, will probably be purchased by the East Boston Ferry Company, as it is now much needed to accommodate the increasing travel to this section of the city. One of the tracks of the Eastern railroad, from the point of junction to the ferry, will be purchased by the Grand Junction company. This arrangement settles the question of the Eastern railroad passing through this city, as they have a chartered right to do, under a portion of Chelsea street and along our wharves.

Virginia.

Manassas Gap Railroad.—The following gentlemen have been appointed a committee from the two Boards of the Corporation of Washington, to represent the interests of that city in the Manassas Gap railroad convention, which is to be held at Romney, Virginia, on Tuesday the 25th inst.; Mr. Towers, from the Board of Aldermen, and Messrs. Bryan and Ennis from the Board of Common Council. The object of this convention is to promote the scheme of extending the Manassas Gap railroad westwardly to Paddytown, in Hampshire county, Va., where it would intersect the Baltimore and Ohio railroad, and thus open a direct line of communication between the latter point and Alexandria. The report of a committee presented to a meeting recently held in Hampshire county, says that—

The extension of this road will greatly advance the interests of that section of country, as well as those of the State at large, by affording the most direct and economical line of communication between the Ohio river and the Atlantic seaboard.—The gain in the distance between Parkersburg and Alexandria, as compared with the Baltimore and Ohio railroad, will be thirty-seven miles, and in the distance to Washington fifty miles. As to the cost of carrying this project into effect, it is estimated that the proposed extension from Strasburg to Paddytown will not exceed \$1,250,000; and that the entire expense of the Manassas Gap road from

Alexandria to Paddytown, including the cost of the section of the Orange railroad which it uses, and also the cost of the proposed extension, will not exceed \$2,500,000.

American Railroad Journal.

Saturday, November 29, 1851.

Tehuantepec Railroad.

The vast tide of travel and the immense commerce which now exist between the Eastern States and California, renders the question of the route by which these shall be accommodated, exceedingly important and of universal interest. Every mile and every cent saved, in such a commerce as that which must soon grow up between the Atlantic and Pacific coast, become matters of the highest importance, and that route which is the cheapest and shortest, must in time supplant all others.

The three great routes now occupying public attention, are the Panama, the Nicaragua and the Tehuantepec. Over one of these must pass for all time, a very large part of the commerce between the two shores of the continent. The cost of transportation by water is so much less than by land, that we never expect to see the more important articles of commerce sent direct by railroad from New York to San Francisco.

The Panama route is the one chiefly followed at the present time. It took the lead of the other two, from the fact of its crossing the Isthmus at its narrowest point, and being the only one opened at the time. It had been the great route of the early Spanish invaders, and has ever since been used to keep up a communication with the east coast of South America. When the discoveries of gold in California turned the tide of travel to that quarter, our people took the best existing route, and in fact the only one opened across the Isthmus. For similar reasons, the Panama route became connected with the lines of steamers between New York and California, and until other lines became established, it completely monopolized, notwithstanding its great disadvantages, the whole travel across the Isthmus.

The next in order is the Nicaragua. This has the advantage of the Panama in being shorter, and having less land carriage. It is undoubtedly much the healthier of the two. When all its advantages shall become fully developed, we have no doubt of its being able to supersede the Panama route.

We omitted to allude to the efforts that have for a number of years been made to construct a railroad from Chagres, or rather Navy Bay, to Panama. The few miles of flat country near Navy Bay have thus far exhausted the efforts of the company. We are not aware that any part of the road is yet brought into use. As the greater difficulties are yet to be encountered, and as the company have already called in, and have probably expended nearly \$2,000,000, the completion of the road may be regarded as quite beyond the means of its projectors. We have no expectations of ever seeing this road finished. Independent of the inherent difficulties in the way, the Tehuantepec would render the Panama road worthless, if built. Such a result the friends of the latter admit, provided the other succeeds; and as its entire practicability has been fully established, we can see no reason why the Panama road should be further prosecuted.

The third is the Tehuantepec route. It is admitted on all hands that this, when opened, must become the great channel of communication be-

tween the Atlantic and Pacific coasts. For California, it is something like 2,000 miles shorter than those already named. It is vastly more healthy, and it is ascertained to possess better harbors, and greater commercial facilities, than either of its rivals. The land portion of this route, is much longer than in either of the others, which explains the reason why it has not been contemporaneously opened for travel. But time is only wanting to remove this objection, and we are glad to learn that there is every reason to believe that it will soon be in active operation for the transit of travellers and merchandise.

We have recently been favored with an examination of the maps and profiles of the Tehuantepec route, and have been furnished with some statistics, the results of the recent survey carried on under charge of Major Barnard. The whole distance from the mouth of the Coatzacoalcos river to the Pacific, by the route proposed, is 166 miles. A fair line has been run at a grade not exceeding 60 feet to the mile, (the same as the maximum on the Erie.) The maximum curvature has 1000 feet radius. A small amount of tunnelling may be required, to cut off some sheep spurs of the mountains, but these will be only a few hundred feet each, making an aggregate of some 2500 feet.

For 62 miles on the Gulf side of the mountains, the country is a plain. The same is true of 35 miles of the Pacific slope. The mountain division embraces 69 miles. Of the whole route, it may be said, that it would not compare unfavorably in its general characteristics, with those of many of our leading roads, and is decidedly superior to some. We may also state, that only one line was run, owing to want of time; that very probably a new and greatly improved line will, for a large part of the distance, be selected. The object of the company in the surveys that have been made, has been, not so much to select the particular route that shall finally be adopted, as to demonstrate the existence of a practicable one. For this purpose instrumental surveys have been made of one line, reaching from the Gulf to the Pacific coast, and a careful estimate made of the entire cost of a road (with its equipment) upon such line.

The company intend to open a common road for the transit of passengers and merchandise immediately. On the Gulf side, the Coatzacoalcos is navigable for about 62 miles at all stages of water for the highest draft steamers. This will reduce the land carriage to about 100 miles.

The harbor made by the Coatzacoalcos is well known to be as good, if not the very best on the Gulf. It has 12 feet water on the bar at the lowest tide. This immediately deepens to more than 20 feet as soon as the bar is crossed. The bar is composed of a narrow ledge of sandstone, which can easily be removed, so as to give any desirable depth of water. Miniutian, 18 miles from the mouth of the river, is at the head of ship navigation, though vessels drawing 12 feet of water can go 30 miles above the point last named.

On the Pacific side a good harbor has been discovered, with from 20 to 40 feet of water. The shore is bold, and ships may come within a few hundred feet of it. The holding ground is good and ships may lay at anchor with entire safety.—By running out a mole of less than half a mile, shipping would be completely protected against all the prevailing winds. An inner harbor could be easily made by deepening the channel of the Tehuantepec river, which it is proposed to have done. It is well known that the prevailing winds on the

Isthmus are the northers, which blow directly across it. These winds create no swell in the Pacific near the shore, nor are they considered dangerous to ships laying at anchor. Vessels now enter this harbor and discharge by means of lighters with perfect safety. The same is done at Panama, but there, owing to the extreme shallowness of the water, the shipping is compelled to lay some miles from the shore.

The company have now in preparation and will publish in a short time the complete results of the survey, which we have been permitted to anticipate in the above particulars.

The company will commence the work of construction at the earliest practicable moment. There is no truth whatever in the rumor that they were negotiating a surrender of their claims to the Mexican government. They are confident of the soundness of their title, and expect the protection of our government. If this cannot be had, they will commence operations upon their own responsibility.—The entire population in the vicinity of the route are exceedingly anxious of having the work go on, and offer all the assistance in their power. The company wish to have the approbation of Mexico, but they will proceed if necessary without it, confident that there will be no real attempt to interfere with their movements.

As soon as the common road shall be opened, the company believe that the length of the trip to California will be reduced to 16 days, viz:—4 days from New Orleans to the Coatzacoalcos harbor; 4 more in crossing the Isthmus, and 8 more to California.

Ohio and Pennsylvania Railroad.

Twenty-eight miles more of this road will be opened for travel next week—about fourteen miles between Brighton and Enon Valley, and about the same distance between Salem and Alliance. Stages will be run between Enon Valley and Salem. It is reported that passengers will be carried through to Cleveland, by this route in less than 12 hours. The hours of departure will be announced in a day or two. Two first class passenger cars have been purchased in Cleveland, and will be placed on the line between Alliance and Salem, where one of the locomotives of the company has been at work on the construction train for some time. All along the unfinished portion of the line the work of tracklaying is progressing with great spirit, and in a few weeks we shall have the pleasure of announcing that Pittsburg is connected by a continuous railroad with Cincinnati.

Coal-burning Locomotives..

Mr. Dimpfel's anthracite coal-burning locomotive, which had been in active use for one year on the Reading railroad, has been bought by the Utica and Schenectady railroad in this State. It is stated that it has fully overcome all obstacles in the way of burning anthracite coal, and has greatly reduced the cost in fuel.

Troy and Rutland Railroad.

The Troy and Rutland railroad company, have agreed to let the Rutland and Washington railroad company run their road for one year in consideration of \$9,000, and repairs of the road. At the end of the year, if the Albany Northern railroad is built, the Rutland and Washington railroad company are to take a lease, during the existence of the charter, of the Troy and Rutland railroad, and are to pay all taxes, expenses and repairs, and 4 per cent. and one-half of the net proceeds above that sum.

Stock and Money Market.

The money market still remains tight, the heavy shipments of specie of last week having had the effect to shake the confidence that was beginning to be felt, of an easy market. Securities of new works are negotiated with difficulty, unless of the very best class, and the prospect is that they must sell at a heavy discount for some time to come.

Our country friends must begin to rely more upon their own resources. In the west, particularly, there is altogether too much disposition to run to New York for nearly every cent of money wanted for their roads. The western people want roads, but they are not willing to make half the sacrifices that New Englanders make for theirs. The former are willing to promise any price for money, but they have little disposition to take it out of their own pockets, and put it into their roads. This they must begin to do, or many of their schemes must stop. Ruinous prices are now paid in this market for money, and from the number of projects offering, a great number of securities will find no sale at all.

Wabash and Erie Canal.—The business of the Wabash and Erie canal continues to show an increase, as will be seen by the annexed statement: Receipts from tolls in October, 1851....\$31,593 31
" " " " 1850.... 25,718 02

Increase 5,875 29
Receipts from sales of land, Oct., 1851, \$24,834 85
" " " " 1850, 17,679 44

Increase 7,155 41

The following are the total receipts from Nov. 1, 1850, to Nov. 1, 1851:

From sales of land.....\$189,878 38
From tolls on canal..... 174,299 36

Total receipts 364,177 74

During the same period last year, viz:
Nov. 1, 1849, to Nov. 1, 1850, and
on the same line of canal, the receipts
were:

From tolls.....\$157,153 38
From lands..... 112,669 63

269,828 01

Increase this year. 94,349 73

The Evening Journal gives the annexed statement of the quantity of flour, wheat, corn and barley, left at tide water during the 3d week in November in the years 1850 and 1851, as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1850....	263,917	371,974	17,665	113,432
1851....	157,537	156,546	136,741	259,111

Dec....106,380 215,428 Inc. 119,076 145,679

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 22d Nov., inclusive, during the years 1850 and 1851, is as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1850....	2,868,772	3,066,336	3,184,057	1,630,848
1851....	3,204,585	2,999,943	7,517,115	1,686,791

Inc. 335,813 de. 66,393 In. 4,333,058 45,843

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 22d Nov., inclusive, during the years 1849 and 1851, is as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1849....	2,921,438	2,455,619	4,968,915	1,302,289
1851....	3,204,585	2,999,943	7,517,115	1,686,791

Increase. 283,147 544,324 2,548,200 384,502

By reducing the wheat to flour, the quantity of the latter left at tide water this year, compared with the corresponding period of last year, shows an increase of 322,535 bbls. of flour.

Canal Tolls.—The amount received for tolls on the several canals of this State, during the 2d week in November was.....\$119,969
Same period in 1850..... 165,933

Decrease 45,964

The aggregate amounts received for tolls from the commencement of navigation to and including the 14th inst., and for the second week in November for the following years were:

	2d week Nov.	To 15th Nov.
1851.....	\$119,969	\$3,171,839
1850.....	165,933	3,027,608
1849.....	144,576	3,043,965
1848.....	150,519	3,097,314
1847.....	161,491	3,513,942
1846.....	141,947	2,625,488
1845.....	144,173	2,510,131

United States Mint.—The following is a statement of the business of the U. S. Mint, during the week ending Nov. 22, 1851:

	Deposits.	Coinage.	Payments.
Gold.....	\$2,080,600	\$1,781,940	\$896,860
Silver....	4,500	6,000	6,511
	2,085,100	1,787,940	903,371

The amount of coinage executed at the mint in one month, at this rate, would be over \$7,000,000, an amount greater by about \$2,000,000 than the aggregate receipts of any month since the discovery of gold in California.

Railway Share & Stock List;

CORRECTED WEEKLY FOR THE
AMERICAN RAILROAD JOURNAL.

NEW YORK NOVEMBER 29, 1851.

GOVERNMENT AND STATE SECURITIES.

U. S. 5's, 1853.....	101½
U. S. 6's, 1856.....	106½
U. S. 6's, 1862.....	110½
U. S. 6's, 1862—coupon.....	114½
U. S. 6's, 1867.....	115½
U. S. 6's, 1868.....	116½
U. S. 6's, 1868—coupon.....	122½
Land Warrants.....	140a145
Arkansas 6's.....	52a53
Alabama 5's.....	91a92
Indiana 5's.....	83
Illinois 6's, 1870.....	65a68
Kentucky 6's, 1871.....	104a106
Massachusetts sterling 5's.....	105a106
Massachusetts 5's, 1859.....	100½
Maine 6's, 1855.....	103
Maryland 6's.....	102½
Michigan.....	—
Mississippi.....	—
New York 6's, 1855.....	103½
Ohio 6's, 1860.....	109
Pennsylvania 5's.....	91

RAILROAD BONDS.

Atlantic and St. Lawrence, 6 percent.....	85
Baltimore and Ohio, 1867.....	94½
Boston and Providence 6's, 1855.....	101
Boston and Worcester 6's, 1855, convertible.....	107½
Bost., Concord and Mont. 6's, 1860, mortgage.....	87½
Cheshire 6's, 1860.....	91½
Connecticut River 6's, convertible.....	89
Erie 7's, 1859.....	101
Erie 7's, 1868.....	106
Erie income 7's.....	93
Hudson River 7's, 1853.....	101½
Michigan Central, convertible, 8's, 1856.....	104½
New York and New Haven.....	100½
Norwich and Worcester, mortgage, 1860.....	80a85
Old Colony, 1854.....	97½
Ogdensburg 7's, 1859.....	93
Portsmouth and Concord.....	80a85
Passumpsic 6's, 1859.....	94½
Rutland 7's, 1863.....	90
Reading mortgage, 1860.....	78
" " 1870.....	70
Sullivan, mortgage 6's, 1855.....	67
Vermont Central 6's, 1852.....	90
" " 6's, 1856.....	85
Vermont and Massachusetts 6's, 1855.....	84

RAILROAD STOCKS.

[CORRECTED FOR WEDNESDAY OF EACH WEEK.]

	Nov. 26.	Nov. 19.
Albany and Schenectady.....	89½	93
Atlantic and St. Lawrence.....	60a65	—
Androscoggin and Kennebec.....	30a35	—
Boston and Maine.....	106½	105½
Boston and Lowell.....	108	109
Boston and Worcester.....	103½	102
Boston and Providence.....	89½	86
Bost., Concord and Montreal.....	36	—
Baltimore and Ohio.....	67½	—
Baltimore and Susquehanna.....	34	—
Cheshire.....	47	48
Cleveland and Columbus.....	—	—
Columbus and Xenia.....	—	—
Camden and Amboy.....	—	—
Connecticut River.....	60	—
Delaware and Hudson (canal).....	108½	107½
Eastern.....	99½	95½
Erie.....	88	87
Fall River.....	97½	94
Fitchburgh.....	110½	110½
Georgia.....	—	—
Georgia Central.....	—	—
Harlem.....	67	68½
Hartford and New Haven.....	122	—
Housatonic (preferred).....	—	—
Hudson River.....	70	74½
Kennebec and Portland.....	50a55	—
Little Miami.....	—	—
Long Island.....	15	14½
Mad River.....	—	—
Madison and Indianapolis.....	90	93
Michigan Central.....	105	108½
Montgomery and West Point.....	—	—
Michigan Southern.....	—	—
Manchester and Lawrence.....	70	—
Morris (canal).....	14½	15½
New York and New Haven.....	108½	108
New Jersey.....	—	130
Northern.....	68½	68
Nashua and Lowell.....	104½	—
New Bedford and Taunton.....	108	—
Norwich and Worcester.....	57	46½
Norfolk County.....	14	16
Ogdensburg.....	30	30½
Old Colony.....	66	65
Passumpsic.....	70½	72
Pennsylvania.....	—	—
Pittsfield and North Adams.....	95	—
Philadelphia, Wilm'gton & Balt.....	28½	28½
Petersburg.....	—	—
Richmond and Fredericksburg.....	—	—
Richmond and Petersburg.....	—	—
Reading.....	58½	56½
Rochester and Syracuse.....	110	110
Rutland.....	40	43½
Stonington.....	51½	44
South Carolina.....	—	—
Syracuse and Utica.....	123½	—
Sullivan.....	15a20	—
Taunton Branch.....	108	110
Troy and Greenbush.....	90	—
Tonawanda.....	—	—
Utica and Schenectady.....	127½	127½
Vermont and Canada.....	97	99½
Vermont Central.....	26	26½
Vermont and Massachusetts.....	27½	27½
Virginia Central.....	—	—
Western.....	103½	103½
Wilmington and Raleigh.....	56	—
York and Cumberland (Pa.).....	19½	—

Missouri.

Pacific Railroad.—The movements in favor of the "Pacific" railroad, from the city of St. Louis to the Western boundary of Missouri, are encouraging. The St. Louis Republican says—

Within the past week, the county of Jackson has subscribed \$100,000 in the stock of the Pacific railroad company; and the county of Morgan, the sum of \$20,000 in the same company. As soon as the county of St. Louis subscribes the \$100,000 which the people have voted, the company will be prepared to notify the Governor that \$1,500,000 of stock have been taken by individuals and counties, and the obligation of the State to loan its credit to the amount of two millions of dollars, will be binding.

St. Charles and Mississippi Railroad.

We have received a report of the survey of a route for a road from St. Charles, on the Fox river, to two points on the Mississippi river—at Albany and at Rock Island. St. Charles is directly west from Chicago, and distant therefrom by railroad, 40 miles. It is connected with the Chicago and Galena road, by a short railroad, called the St. Charles branch.

The main line from Chicago or St. Charles to the Mississippi river, at Albany, follows nearly a west course. The length of line surveyed from St. Charles is 101½ miles, or 138½ from Chicago, making probably the shortest practicable line between Lake Michigan and the Mississippi. The cost of this line fully equipped, is estimated at \$12,135 78 per mile, or a total cost of \$1,230,265.

A branch was also run to Rock Island, diverging from the direct line at or near Como, on the Rock river, 79½ miles from St. Charles, and following down the west bank of that river. The whole length of this line is 124½ miles, making the entire distance between Rock Island and Chicago, 161½ miles. The cost of this route is estimated at \$10,803 64 per mile, or an aggregate of \$1,340,732 20.

There were various deviations from the above line surveyed, but these possess only a local interest, and present the same general characteristics with those already noticed. The main features of the leading routes are what generally interest the public.

The estimates of cost show the route to be very easy of construction. In this respect it compares favorably with most of the western routes. The general adaptedness of Illinois for railroading is too well known to require any further description from us. The uniform surface of the country makes but little cutting necessary, and allows the use of easy curves upon almost every occasion. Upon many lines nothing like rock is met with. Railroads may be built with nearly equal ease in any part of the State, and the inquiry that chiefly concerns those interested in them, and the public, is not their cost, but their capacity for business. Will they command the travel of the great route, or the business of a sufficient section of country, to afford a liberal support? Both of these queries, when applied to the St. Charles road, may, we think, be answered in the affirmative. There can be no doubt that the shortest route to the Mississippi river from the great lakes, must have a large through travel at whatever point that river is struck.

It is contemplated by the friends of the above road to extend it to Iowa city, to form a junction with the proposed road from that place to Council Bluff. It is said, and we presume correctly, that the distance from Chicago to Iowa City by this route is 35 miles shorter than by any other.

For local business, the St. Charles road can present a strong case. It is sufficiently distant, both from the Galena and Rock Island roads, not to suffer from the rivalry of either. The belt of country properly belonging to it would afford ample local traffic. The country traversed by the road is, we presume, equal in fertility and amount of production, to any other portion of northern Illinois. As it would intersect the Galena branch of the Central road at or near Dixon, the latter would become tributary to the St. Charles road for the travel and business designed for Chicago. On this account, the importance of constructing the St. Charles road to Dixon is very much increased.

We are not so well informed as to the means of

the company. We believe, however, that a sufficient sum has been raised to authorize the organization of a company: that is, \$1,000 to the mile. We believe there are abundant means on the route, were there sufficient public spirit to draw them out. We think that if one half the cost could be actually raised by the people on the line of the road, the balance might be obtained on the company's securities. The road is an important one, and the route could not fail to attract the eye of the capitalist.

Virginia.

Richmond and Danville Railroad.—We have received the report of the officers of this company, submitted at a meeting of the stockholders held on the 12th inst., at Danville. The road is now open to Jetersville, 44 miles from Richmond, and graded, with some trifling exceptions, 12 miles further. Considerable work has been done on other parts of the line. The road can soon be opened to Burkville, a very important point, as it here forms a junction with the South Side railroad, extending from Petersburg to Lynchburg.

There has now been expended upon the road the sum of \$1,257,582 41, viz:

Richmond depot, station houses, water stations, wood sheds, etc.....	\$36,474 22
Masonry, grading and bridging, on main line and branches.....	676,338 60
Permanent way.....	292,000 00
Materials on hand for permanent way.....	165,559 27
Furniture, for motive power.....	22,576 88
“ for cars and machinery.....	64,633 44
Total.....	1,257,582 41

The means of the company remaining on hand, are \$53,000 private and \$59,000 State subscription. The State subscription is not available until the private subscription is paid; and as this is collected very slowly, the company is somewhat cramped for means with which to prosecute the work with that vigor and energy which is felt to be desirable.

For the necessary means to carry the road forward to Danville, the company are allowed to increase the capital stock beyond the amount already raised, \$635,000. Of this sum, the State subscribes three-fifths, provided the other two-fifths are subscribed and paid by individuals. This sum we presume would be at once subscribed upon any route in the United States, but that of the Danville road; yet all efforts thus far to effect this object have failed. In reference to these efforts, we copy the following from the report:

To keep the work in progress and give the country the benefit of its early completion, new subscriptions became necessary. It was believed the counties along the line could easily, and would as readily, make up the amount. Under an act of the General Assembly, the courts of the counties, respectively, of Halifax, Charlotte, Pittsylvania, Henry and Amelia, made an order authorising polls to be held on the question of a subscription by each of them—in the sum of \$50,000 in the three first named, and of a less sum for the other two. The intermediate counties, lying immediately on the line of the road, and having hitherto subscribed very partially to the improvement, it was fondly expected could have no difficulty in such a proposition. We regret to inform the stockholders, that in this expectation we have been disappointed.—The county of Halifax, penetrated as it is diagonally by the road, running through its entire extent, from northeast to southwest, and with three navigable streams reaching it at most convenient points—a country of immense wealth, being indeed one of the largest and most wealthy in the commonwealth—was the first to refuse its aid. The county of Charlotte, not less interested, nor less advantageously intersected by the line of road, followed the example of her large, populous and wealthy neighbor. This is no place for comment on these

proceedings. They belong, however, to the social, and domestic history of our region of the State, and challenge at least our wonder and astonishment.

We may, however, upon a calm view of the influences brought to bear upon the public mind, consider the vote obtained a flattering one, and a matter rather of exultation than despondency. Two most respectable and worthy young gentlemen of liberal attainments and collegiate education, and deservedly high in the estimation of their fellow citizens, were candidates for the legislature in the former county, and conducted the canvass throughout the county, with the bitterest and most unrelaxing hostility to the proposed measure, and made it indeed the chief ground of their claim to public favor. No effort was wanting, “no stone left unturned,” to prejudice the public against the proposed mode of favoring the enterprise. The great extent of the county, the novelty of such a proposition on a subject itself so novel to the mass of the people, the difficulty of conferring with them over so large an area, in the short space allotted to its decision, were the main and controlling reasons of failure. Equal opposition was made in the county of Charlotte. An aged and experienced minister of the gospel took the stump in a regular and constant canvass against the county subscription, and the same difficulties of conferring with the masses in the time allotted, and the unfailing appeals to the prejudices of the people, have given a decision upon the subject, which it is presumed is without a parallel any where on the American continent, and is in keeping with the opposition which has presented itself to your enterprise in every form since its commencement. A succinct but detailed history of the peculiar obstacles and impediments which have obstructed your path since the first effort made on the subject, would furnish a source of curious amusement and instruction, and, with time and leisure, shall be given to the public at some future day.

We congratulate the stockholders, however, upon the fact, that the investigation which has been given to the subject in this canvass, has operated to awaken a renewed and more vigorous interest in the enterprise on the part of the people; and we may safely say, that never so much as now, and never until now, has it been adopted as a people's question. It has taken hold of their judgments, and found lodgment in their hearts, and there is no shadow of doubt about the favorable result, with the kindly influences of a little more time. Indeed, although defeated for the present in the effort for county subscriptions, we feel safe in assuring the stockholders that there is no doubt of ultimate success. Intelligence has been received since the vote in the counties above named, of liberal subscriptions by individuals, and made, in many instances, by those who voted against the county subscription.

We hope this history will be published. The people of this portion of Virginia certainly present a most singular spectacle, unlike anything we witness in any other portion of the United States. The country traversed by the Danville railroad is one of the most fertile and productive in Virginia. Without the Danville road, it has no other means of sending its produce to a market, than the ordinary wagon road. The people, it is admitted, have abundant means to build the road. The State subscribes three-fifths of its cost. Yet there is not sufficient public spirit to raise the balance; an amount which the road would probably save to them in two or three years, in transportation alone. This part of Virginia stands supremely pre-eminent for her folly and stupidity, and cannot be matched on this side of the water. In most cases, without aid from abroad, our people are too willing to subscribe, and more apt to go beyond their means, than to fall below them.

The company are exceedingly fortunate in having a most public spirited, liberal minded and energetic president, who has labored for years with the most enthusiastic zeal in the service of the road, and has endeavored almost in vain to infuse some of his own life into the spiritless forms around him.

We are glad to see that there is beginning to some fruit of his labors. The company are fortunate, both in their directory and engineering department, both of which have contended against almost innumerable difficulties, in effecting what has already been accomplished.

We copy the following in reference to testing the iron bridge recently thrown over the Appomattox, built upon Col. Long's patent, by M. M. White, Esq., of this city.

Before receiving the iron from the contractor, it was subjected to a severe trial of its strength, by loading it with earth its entire length, half a ton to the foot, then loading as many gravel cars, heaped to their utmost capacity, as would cover an entire arch; with this load the engine was run over the bridge, at as high a rate of speed as could be attained, over 24 miles an hour, which produced a deflection in the centre of 3-16ths of an inch. After this, two wedge-shaped iron bars, one inch thick at their base, were laid upon the rails in the centre of the arch, the same engine and load then ran over them, at a speed not less than 15 miles the hour. At this time it had become too dark to note the deflection produced, but no sensible change was produced in any part, that can be discovered.

BUSINESS OF THE ROAD.

No regular transportation business was done upon the road prior to the first week in January, except what was done for construction by transporting materials and gravel for the road; but the engine with passenger cars made occasional trips previous to that time. Since the first week in January the cars have run regularly six days in a week for passengers, and as often for coal, stone and freight as the business required. The road was opened to the Appomattox river on the 19th of May, and to Amelia C. H. the 20th inst.

The earnings up to September 30th, 1851, have been as follows:

Coal.....	\$8,324 61
Stone.....	1,203 84
Freight.....	3,016 99
Mail.....	345 30
Passengers.....	7,063 80
Total.....	19,954 54

Manassas Gap and Paddytown Railroad.

There was a large meeting at Romney on Saturday last, for the purpose of appointing delegates to the convention that is to assemble, at the same place, on the 25th inst., to take into consideration the propriety of extending the Manassas Gap railroad to Paddytown, on the Baltimore and Ohio railroad.

The meeting adopted a report, with accompanying resolutions, in favor of the extension, and appointed a delegation of more than 100 citizens to attend the convention.

In the report, it is claimed that the proposed extension would afford the most direct and economical route between the Ohio river, and the Atlantic seaboard. By the Baltimore and Ohio railroad, the distance from Baltimore to Parkersburg is stated to be 402 miles, with Paddytown equidistant between the two points. From Alexandria to Strasburg, by the Manassas Gap road, the distance is 91 miles. From Strasburg to Paddytown, a railroad is believed to be practicable in a distance not exceeding 75 miles—making the total distance from Alexandria to Parkersburg, 367 miles, or 35 miles less than by the other route. If Washington is taken into the calculation, the distance by the Manassas Gap railroad extension is said to be 50 miles less than by the Baltimore and Ohio railroad. It is also said that a short railroad of 25 miles from Brentsville, on the Manassas Gap railroad to Fredericksburg, would connect Parkersburg with Richmond by a series of railroads of 423 miles in aggregate length, which is the precise distance from

Parkersburg by the Baltimore and Ohio railroad to Washington City.

In respect to cost, the report argues that the Baltimore and Ohio railroad to Paddytown has cost about \$7,500,000, while the Manassas Gap railroad from Alexandria to Paddytown, including cost of the section of the Orange railroad, which it uses, and of the proposed extension, will not exceed \$2,500,000, or just one third of the former amount. The estimated cost of the Paddytown extension is stated at \$1,250,000, for the 75 miles of estimated distance.

Such are the statements of the report, which we publish for the information of those who understand the matter better than we do.

The report concludes with the following interesting statement:

Professor Wm. B. Rogers, in his Geological Reconnoissance of the State of Virginia, made in 1836, thus speaks of the mineral resources of the country around Paddytown.

"A simple enumeration of the strata here exposed will furnish an illustration of the resources of this corner of the State well calculated to inspire astonishment and exultation. Upon a stratum of iron ore, not less than 15 feet in thickness, there rests a bed of sandstone, upon which reposes a coal seam 3 feet thick; above this another bed of sandstone, then a two foot vein of coal, next sandstone, then another coal seam of 4 feet, again a stratum of sandstone, and over it a 7 foot vein of coal, over this a heavy bed of iron ore, and crowning the series, an enormous coal seam of from 15 to 20 feet in thickness."

History of the Post Office Department.

We find in the Tribune a brief history of the Post Office department from its earliest organization. It is an interesting document, and as it will be a very useful matter for reference, we condense the account for our columns.

The first monthly post was organized between New York and Boston in 1672; trip to be made in about a fortnight each way. Ten years subsequently a postal communication was effected between Philadelphia and the principal towns in Pennsylvania and Maryland. Offices for the receipt and dispatch of letters were set up at Philadelphia in 1683, at Boston in 1687, and at New York, in 1692.

Somewhere about the year 1700, a patent was issued by the British Government to Thomas Neal, conferring on him and his heirs the right to erect Post Offices in the Colonies for twenty-one years. At this time no mail route was in operation south of Philadelphia. In 1753 Benjamin Franklin was appointed the situation of Superintendent. He was dismissed in 1774.

On the rupture in 1775, between the mother country and the Colonies, an opposition Post Office was started by the Colonies, the British establishment nominally continuing for some years thereafter. On the 26th of July, 1775, the Congress of the Confederation passed a resolution for the appointment of a Postmaster-General, who should hold his office at Philadelphia, with a salary of \$1,000 per annum, and have power to appoint a Secretary, and Controller at \$340, and "such and so many deputies as to him may seem proper and necessary," whose compensation should be twenty per cent. of the postages they might collect and pay over, not exceeding \$1,000 in amount, and ten per cent. on larger sums. Benjamin Franklin was unanimously elected to the office. Other resolves

of the same date authorized him to put in operation a line of posts between Falmouth, in New England, and Savannah, in Georgia, with such cross routes as he may think fit, and exempt Postmasters and post-riders from military duty.

On the 17th of October, 1777 two additional surveyors of the posts were authorized by this body, who were to be paid \$6 a day. An Inspector of dead letters was also provided for, with a salary of \$100 per annum.

In 1776 Richard Bache succeeded to the office, Franklin having been called to more important public trusts.

Ebenezer Hazard succeeded to the office early in 1782. On the 18th of October, 1782, the Colonial Congress passed the first extended ordinance for the regulation of the establishment. It set out thus:—

"Whereas, The communication by intelligence with regularity and dispatch, from one part to another of these United States, is essentially requisite to the safety as well as the commercial interest thereof; and the United States, in Congress assembled, being by the articles of the Confederation vested with the sole and exclusive right and power of establishing and regulating Post-Offices throughout all these United States; and whereas it has become necessary to revise the several regulations heretofore made relating to the Post Office, and to reduce them to one Act, be it therefore ordained," etc.

The act then went on to authorize the Postmaster-General to appoint the necessary deputies, (for whose fidelity he was to be accountable;) to put in operation a postal line from New Hampshire to Georgia, and such other parts of the United States as he might think fit, or Congress direct; to appoint the necessary post-riders, etc. His compensation was fixed at \$1,500 per annum, and that of his Assistant at \$1,000. He was directed to allow his deputies for their services what he might think them worth, not exceeding 20 per cent. of the postages they collected and paid over. The act prescribed a tariff of postages, fixing the charge on single letters, going not over 60 miles, at one penny weight (equal to 6-90 of a dollar) and eight grains two pennyweights for distance not exceeding 100 miles, and so on; and authorized the riders to convey newspapers outside of the bags, at rates deemed by the Postmaster-General reasonable, on condition of their paying over to him a stipulated portion of such earnings.

On the 20th of September, 1786, Congress passed a resolve requiring the collection of the postages in specie. In 1789, the appointment of Postmaster-General fell in the hands of the President and Senate. Washington selected for the place Samuel Osgood, of Massachusetts, a man of fine abilities. He kept his office in the city of New York till about the first of December, 1790, when it was transferred to Philadelphia, where it staid till the removal of the seat of the General Government to Washington in 1802.

At this epoch there were but 75 post-offices in the Union, and less than 2,000 miles of post-road, consisting of a long route from Wiscasset, in Maine, along the principal Atlantic towns, to Savannah, in Georgia, with half a score of cross routes, the entire cost of which was \$22,274. The postage receipts at the principal offices were as follows:—Philadelphia \$9,674 per annum; New York, \$5,537; Baltimore \$3,937; Boston \$3,695; Richmond \$2,994; Petersburg, \$1,863; Alexandria, \$1,580; Fredericksburg, \$1,326; Norfolk, \$1,350; Charleston, \$1,040.

Mr. O., on the 20th of January, 1790, submitted to the Secretary of the Treasury an interesting re-

port on the state of the office, with suggestions for its improvement.

Col. Timothy Pickering, of Pennsylvania, succeeded to the office on the 7th of November, 1791, at which time there existed but 89 Post-offices in the Union, and the gross receipts of the establishment, were but about \$46,000. Charles Burrell was his assistant.

Congress passed a revised and much improved postal law on the 20th of February, 1793, arranging the postal tariff in federal money, and on a more equitable basis. No prophetic genius having yet foreshadowed the future consequence, and almost illimitable circulation of newspapers through the mails, no postage rates had hitherto been designated for them. This ordinance fixed those at one cent and one-and-a-half cents, according to distance, which continued the charge down to 1845. Half the revenue therefrom was allowed to the Postmasters collecting the same. The act also made the salutary provision of allowing newspaper publishers to transmit to each other, through Uncle Sam's portmanteaus, a single copy of their issues without charge. It fixed the salary of the Postmaster-General at \$2,000 per annum, and that of his Assistant at \$1,000, which, two years subsequently, got up to \$2,400 and \$1,200 respectively, and at a five years latter date, to \$3,000 and \$1,700.

Joseph Habersham, of Georgia, a very intelligent gentleman, took the Postmaster-General's desk on the 25th of February, 1795, in consequence of Mr. Pickering's transfer to the War Department. He is said to have proved eminently successful in imparting system and certainty to the operations of the establishment. In January, 1799, he informed Congress that the list of post-offices had increased to 700, and the length of post-roads to 16,000 miles—sevenfold their amount ten years before, making it necessary to settle about 3,600 accounts annually; that he had to superintend the conduct and performance, as well as answer the letters of said deputies, and of about 200 contractors; also to open 40,000 dead letters annually; which made it essential, in his opinion, for the law-makers to augment the number of his clerks, then only four.

A revised postal law, proposed by him, was enacted on the 2d of March, 1799, embracing among other improvements, a repeal of the death penalty, contained in the then existing statutes, for stealing or robbing the mail.

The laws on the subject now in existence make the punishment therefor from five to ten years imprisonment, and death for the second offence.

At this period it required forty days to obtain an answer at Portland to a letter mailed at Savannah, and forty-four at Philadelphia, for a reply to one addressed to Nashville.

Gideon Granger, of Connecticut, took the Postmaster generalship in 1802. And continued in the office over twelve years.

About this time, as has been stated, the establishment was transferred to Washington. It was at first located at the corner of E. and Ninth-sts., in a building now used for a female seminary, whence it was subsequently taken to some of the rooms in the Old War Department, west of the President's mansion, and in 1812 to a building located on its present site, and originally built for a hotel.

Return Jonathan Meigs, of Ohio, was commissioned Postmaster-General on the 7th of March, 1814, at which period the establishment had grown to considerable importance—having nearly 3,000

postmasters and over 43,000 miles of post road in operation, and a gross annual revenue of \$730,000.

In 1816, a postal act was passed fixing the postage rates as they stood from that time till 1845, viz: 6 cents for single letters going less than 30 miles, 10 cents under 80, 12½ cents under 150, 18½ under 400, and 25 cents for greater distances. Thanks to National Legislation that these high rates, under which the country so long groaned, are among the things that were.

John McLean, of Ohio, then Commissioner of the General Land-Office, and previously a member of Congress from Ohio, took the reins of the establishment on the 1st of July, 1823. He possessed fine administrative talents, and great tact in infusing his own spirit of energy and zeal into his associates and subordinates. His administration forms a bright page in the history of the Department. During his term, in March, 1825, a postal act superseding all previous ones was passed, which, in its main features, constitutes at this day the fundamental law of the Department. Some two years after this, Congress augmented the Postmaster-General's salary to \$6,000 per annum, thus raising the Post-Office, which till then had been a bureau, to the rank of a Department of the Government. Mr. McLean did not, however, take a seat in the President's cabinet. He was the first to carry into effect, if not to conceive, the happy idea of paying the mail contractors by drafts on the post-offices, thereby superseding the old, loose and hazardous system of having the money transmitted by those officers to Washington, thence to be returned by the same hazardous mode to the contractors. During his term the mail service was immensely extended.

The following shows the moneys paid into the Treasury during the administration of this gentleman and some of his predecessors, viz:

Osgood.....	1789 to 1791.....	\$15,392
Habersham.....	1795 to 1801.....	363,310
Granger.....	1801 to 1813.....	291,579
Meigs.....	1814 to 1823.....	387,209
McLean.....	1823 to 1829.....	13,466

Mr. McLean's plan was to keep all the funds of the establishment in active operation.

Gen. Jackson having, on his accession to the Presidency, transferred this gentleman to the Supreme bench, Wm. T. Barry, of Kentucky, succeeded to the management of the Post-Office. He was the first Postmaster-General that took a seat in a President's Cabinet. He followed out his predecessor's favorite idea of keeping the receipts of the Department in active employment.

His administration became nupopular, and the credit of the postal establishment being in a low state, he resigned, and Amos Kendall was called to the duties of Postmaster-General.

He had an eagle eye, and a strong head, which enabled him to perceive at a glance what steps were necessary to retrieve the affairs of the Department, as well as to put them in force, and in a few months had the satisfaction to inform Congress that the concern was out of debt.

Mr. Kendall submitted to Congress, soon after taking the office, a plan for its organization, which became a law on the second of July, 1836. The distinctive feature of this consisted in the appointment of an officer styled "Auditor of the Treasury for the Post-Office Department," and appointed by the President and Senate.

In 1836, the Department was burned down, but lost few papers of value by the accident. The office was then removed to the building now known

as Willard's Hotel, where it remained till December, 1841, when it was transferred to the present magnificent structure.

On Mr. Kendall's resignation, in May, 1840, Mr. Van Buren called to the postal chair, John M. Niles, of Connecticut.

On the 4th of March, 1841, General Harrison selected for his Postmaster-General Francis Granger, of New York. Who held the office for a few months only.

Charles A. Wickliffe, of Kentucky, was commissioned Postmaster-General in September, 1851. The establishment was in a prosperous condition throughout his term of three and a half years. On the last day of his official term, 3d March, 1845, Congress passed two laws of considerable importance touching the Post-Office; the first, authorizing the Postmaster-General to make contracts, for periods from four to ten years, for mail transportation to foreign countries, giving a preference to bidders proposing to carry in steamships, and agreeing to surrender their vessels to the United States for their value, if wanted, in time of war; the other, reducing the postage on letters not weighing over half an ounce, or going over 300 miles, to five cents, and requiring the Postmaster-General, when making future contracts for the service, to regard only the regular, safe and expeditious transportation of the mails. The former ordinance was called for by the wants of our rapidly extending foreign commerce; the latter was an immense boon to the social intercourse of the masses, as well as a judicious release of the inland correspondence of the country from taxation for the conveyance of passengers in the mail-coaches.

On the accession of Mr. Polk to the Presidential chair, he called to the Post-Office Cave Johnson, of Tennessee, a gentleman of bland manners and clear head, who presided over its interests with dignity and success for four years.

Jacob Collamer, of Vermont, was the person selected for the office by General Taylor on his elevation to the Presidency, in March, 1849.

On the 23d of July, 1850, the present incumbent, N. K. Hall, of New York, was commissioned Postmaster-General, at which time there were about 19,000 Postmasters, 4,760 mail contractors, and 5,500 operating post routes on the lists of the Department. The revenue from postages amounted to \$5,495,000 per annum, of which \$919,486 arose from newspapers. Of the gross annual expenditure for mail conveyance, (\$2,724,426.) \$265,506 was for five foreign routes. This estimate does not take in the Liverpool, Chagres and Astoria lines, which are paid for by the Navy Department.

In his first report to the President of the condition of the Department, he strongly urged a reduction of the single postage rate to three cents prepaid, or five cents unpaid, and of a more accommodating tariff on newspapers and other printed matter. His suggestions having been, in the main, adopted as the public are aware, this highly important improvement went into effect on the 1st of July last. I understand that its workings during the first quarter were highly satisfactory.

There are employed in the entire concern, which is all under one roof, 155 clerks, viz: 85 in the Auditor's office and seventy in the Department proper, whose average annual salary is about \$1,150, a sum barely sufficient to maintain a small family in Washington. The Auditor employs 30 of his force in examining the accounts of acting postmasters, 10 in paying contractors, and the residue in settling the accounts of ex-postmasters, prose-

cutting defaulting contractors, stating the accounts of contractors, copying letters, etc., etc.

The Postmaster General assigns about 20 of his clerks to the office of mail contracts, the residue being divided between the Appointment, Finance and Inspection bureaus.

Northern against the Southern Route.

In relation to the comparative advantage of the southern and northern routes from Kentucky to New York. The Louisville Courier says:—

Saturday last a German house shipped through the house of Messrs. E. Webb & Huston, of this city, by the northern railroad route to New York, sixty-eight hogsheads of tobacco, there to be reshipped to Antwerp, for which market it was purchased. Before the contract was closed with Messrs. Webb and Huston, the holders of the tobacco telegraphed to the agents at New Orleans to learn the rates of freights between New Orleans and Antwerp, and after receiving an answer, and comparing the rate with that at which the tobacco could be shipped from New York to Antwerp, found it to be a saving in expense of transportation, as well as an economy of time, to give the northern route the preference. The charges between this city and New York are now high, owing to the lateness of the season, which compelled the shippers here to rely upon railroads all the way except across the Lake instead of being able to avail themselves of the cheaper navigation by canal through the States of Ohio and New York.

Railroad Instruments.

THEODOLITES, TRANSIT COMPASSES & LEVELS on a new principle, with Fraunhofer's Munich Glasses, Surveyors' Compasses, Barometers, Chains, Drawing Instruments, etc., all of the best quality and workmanship, for sale at unusually low prices by
E. & G. W. BLUNT,
No. 179 Water st.

New York, Dec. 1, 1851.

LOWMOOR LOCOMOTIVE TIRES.

THE Subscriber, sole agent for the Lowmoor Co., is prepared to take orders for this superior description of tires, which are furnished, bent, welded and blocked to any dimensions, having but one weld, and at a cost to the importer of less than ten cents per pound for the heaviest weights.

WM. BAILEY LANG.

Boston, November 29th.

Railroad Iron.

THE undersigned offer for sale 1000 tons Railroad Iron, (about 56 lbs. to the yard,) now at Brooklyn.

CHOUTEAU, MERLE & SANFORD,
Oct. 1, 1851. 51 New st.

Railroad Iron.

2000 TONS of an approved pattern 59 to 60 lbs. per lineal yard, now manufactured in England, and ready for immediate shipment, from thence.

Also, 2,500 tons of different patterns in port and expected to arrive within sixty days. For sale by
DAVIS, BROOKS & Co.
28 Beaver Street, New York.

CONTRACTS made for Railroad Iron at a specific price delivered in England, or at port in the United States.

Notice to Contractors.

PROPOSALS will be received at this office, from the 15th to the 30th of November next, for the grubbing, grading, ballasting, masonry, bridging, ties and track laying of the Dayton and Michigan railroad, between Dayton and Troy. Maps, profiles and specifications will be ready for inspection at this office, on and after the 15th November next, and information may be obtained from R. W. Shoemaker, Esq., Engineer, Cincinnati, and P. Pomeroy, Esq., resident Engineer, or of the undersigned.

Office Dayton and Michigan

Railroad Co., Troy, 15th Oct., 1851.

WILLIAM BARBER.

President.

Best Cast Steel Axles & Tires, (A NEW ARTICLE.)

For Railroad Carriages and Locomotives.

THE quality of this Steel is sufficiently attested in the announcement that it has carried off the first prizes awarded at the World's competition of 1851, in London. The axles are in general use on the Continent, and are now offered in competition with any other that can be produced; and to be tested in any way that may be desired by the Engineers of the United States, either by impact or by torsion. This Steel is manufactured by Fried Krupp, Esq., of Essen, in Renish Prussia, represented in the United States by

THOS. PROSSER & SON,
28 Platt st., New York.

November 1.

To Railroad and Canal Companies, Contractors, etc.

THE undersigned wishes to direct the attention of Chief Engineers and Contractors to the facilities he possesses for supplying them with workmen, laborers, etc. of any description, and also to remind them that he forwards such men to whatever destination they may be required.

Companies or Contractors desirous of receiving peaceable and industrious men, will be promptly supplied at the shortest possible notice.

C. B. RICHARDS,

No. 35 Greenwich Street, New York.

REFERENCES:—Chas. H. Webb, Esq., Supt. of the St. George's and British Protective Society, New York; Messrs. Harris and Leach, Philadelphia; Wm. P. Malburn, Esq., Albany.

To Stone Masons.

THE NEW ALBANY AND SALEM RAILROAD Company have about 10,000 c. yards of Abutment Masonry to let at private contract, to be completed by the 1st of July, 1852.

To contractors who can produce testimonials of character for ability as STONE MASONS, fair, remunerating prices will be given.

Early applicants, by securing the work now offered, will gain advantages over competitors for the erection of an additional 15,000 yards, to be let out early next spring, in bridging the streams between Bedford and Michigan City, via Bloomington, Gosport, Crawfordsville and Lafayette, (the most productive and healthy region in Indiana,) by the knowledge they will have acquired of the resources of the country.

Application may be made in person, or by letter addressed to the undersigned, at New Albany, Indiana.

S. B. WILSON, Engineer.
Engineer's Office, New Albany,
Sept. 29th, 1851.

Engine Waste.

CLEAN WASTE for Locomotive and Steamboat Engines, in lots as wanted; also, superior Steam Packing. Orders, with explicit directions for forwarding, should be addressed to

J. MORTIMER HALL,
36 South st., New York.

November 1. 3m

Notice to Contractors.

SEALED proposals will be received at the office of the company in Galesburg, on Wednesday, the 24th day of December next, for the grading, bridging and masonry of the Central Military Track road. The road will be nearly fifty miles in length, and embraces a variety of work well worth the attention of contractors.

Proposals will also be received at the same time and place, for the Cross Ties, to be delivered at different points on the line.

Contractors will be expected to state in their bids the amount of the stock of the company they will be willing to take for work done; and preference will be given to those bidders who will take the greatest amount of stock.

Plans, profiles, specifications, etc. will be exhibited ten days previous to the day of letting, and all the necessary information with regard to the manner of its construction, etc., furnished by the engineer of the Board.

By order of the Board of Directors.

WM. McMURTRY, President.

GEO. G. LANPHERE, Secretary.

To Railroad Companies.

H. & F. BLANDY, Proprietors
LOCOMOTIVE ENGINE WORKS,
ZANESVILLE, OHIO.

RESPECTFULLY give notice to Railroad Companies that they are now prepared to furnish Engines of the most approved construction and finish, which, for capacity, speed and durability, are not excelled in this country.

Also, all other Railroad machinery, of both wrought and cast iron, pertaining to the road, stations or machine shops.

Terms as favorable as any other builders in the United States.

The facilities for transportation from Zanesville are as good as from any other point in the Union, having steamboat navigation to the Ohio river, and Canal boat and Railroad connection with the Ohio river and Lakes.

One of their Engines, the "MUSKINGUM," on the Central Ohio Railroad, may be referred to, or others, at their works. The attention of those interested is invited, and orders solicited.

Oct. 30th, 1851.

To Contractors.

OFFICE OF THE E. AND ILL. R. R. Co.,
Evansville, Oct. 23d, 1851.

SEALED PROPOSALS will be received at this office from the 13th to the 23d day of December next, for the grubbing, grading and bridging of that portion of the Evansville and Illinois railroad, lying between Princeton and Vincennes, a distance of 24 miles.

This work includes two bridges; one across White River, about 600 feet, the other across Patoka, about 200 feet.

Contractors will state what proportion of the Stock of the Company will be taken in payment.

Plans, profiles and specifications, will be exhibited, and all requisite information given at the Office of the company in Evansville, on and after the 13th day of December next. By order of the Board of Directors.

SAM'L. HALL,
President.

RAILROAD SPRINGS.

Fuller's India-rubber Springs.

THESE are now made in our own Factory, of the best materials. Each spring is guaranteed to perform the required work. Purchasers guaranteed against adverse claims.

Car Builders will save great expense by calling at the office of the Company.

23 Courtlandt St., New York.

To Railroad Companies.

THE undersigned has discovered and patented an imperishable, cheap, and sufficiently elastic substance, to be introduced between the sill and rail, so that the stone sill can be used in place of the wooden sill: entirely overcoming that rigidity where the rail is laid directly on stone. Address

J. B. GRAY, Philadelphia.

July 10, 1851.

4m

Railroad Iron.

THE undersigned are prepared to enter into contracts now at specific prices, to deliver Railroad Iron during the coming Winter and Spring, free on board at the shipping ports in Wales, or at ports in the United States.

CHOUTEAU, MERLE & SANFORD,
Sept. 30, 1851. No. 51 New st.

To Contractors.

OFFICE WILMINGTON & MANCHESTER R. R. Co.,
Marion C. H. S. C., October 18, 1851.

SEALED PROPOSALS will be received until the 15th of December next, for the Piers of a Bridge across the Great Pee Dee River. The job comprises four piers, one a very heavy pier for a draw, and the sinking of cast iron hollow piles by "Dr. Pott's Pneumatic Process," for forming foundations. The plans and specifications of the piers will be exhibited by the Secretary of the Company at Marion Court House, and by the Resident Engineer, L. J. Fleming, Esq., at Wilmington, North Carolina.

WALTER GWYNN,
Chief Engineer Wilm. and Man. R.R.
November 1. Richmond, Va.

Bridges & Brother, DEALERS IN RAILROAD AND CAR FINDINGS,

61 Courtlandt street, New York.

Having established a general Depot for the sale of articles used in the construction of Railroads, Locomotive Engines and Railroad Cars, we would invite your attention to our establishment. We have already in store a good assortment of CAR FINDINGS and other articles used in the trade, and feel justified in saying, that should you desire anything in our line, we can supply on terms perfectly satisfactory, and in the event of your desiring to order, you may feel assured that your terms will be as good as though you were here to make your own purchases.

Among our goods may be found Railroad Car Wheels, Axles, Jaws and Boxes, Nuts and Washers, Bolts, Brass Seat Hooks and Rivets, Window and Blind Springs, Lifters and Catchers, Door Locks, Knobs and Butts, Ventilators and Rings, Car Lamps, Coach and Wood Screws, Jack and Bed Screws and Babbitt's Metal; also Plushes, Damask, Enameled Head Linings, Cotton Duck for Top Covering in width sufficient without seams, Curled Hair and all other articles appertaining to cars.

Also a new and valuable CAR DOOR LOCK, well adapted to the Sliding Door. This is decidedly the best yet introduced.

LOCOMOTIVE ENGINE LANTERNS, the best article made in the country. Whistles, Gauge and Oil Cocks, Hemp Packing, American, Russian and Italian. We are also agents for Lightner's Patent Journal Box for Car Axles, that invaluable invention, for the economical use and preservation of Car Journals.

Coach VARNISH and Japan of the best quality.

We would also offer our services for the purchase as well as for the sale of goods on commission.—Both members of our firm have had the experience of many years in the manufacture of Railroad Cars, and our Senior was a member of the well known house of DAVENPORT & BRIDGES, Car Manufacturers, Cambridgeport, Mass. With our knowledge of matters pertaining to Railroads, we feel quite confident in giving satisfaction to both buyer and seller, and hope that through assiduity and attention to any business entrusted to our care we shall merit a continuance of confidence and patronage.

BRIDGES & BROTHER.

July 22, 1851.

Lightner's Patent Axle Boxes.

THE Undersigned are Agents for, and offer for sale, *Lightner's Patent Axle Boxes*, for Railroad Cars and Tenders, which have, by thorough experience, been demonstrated to be one of the most valuable improvements ever introduced in Locomotion. The saving effected in oil alone, will in a few months pay the first cost of these boxes, independent of other advantages. They are now in use upon the following, among other roads, viz:

Boston and Worcester, Boston and Providence, Boston and Fitchburg, Nashua and Lowell, Providence and Worcester, Northern, N.H., Cheshire, Manchester and Lawrence, Concord, N.H., Concord and Claremont, Ogdensburg, (Northern, N.Y.) Stonington, New London Willimantic and Palmer, New Jersey Central, New Hampshire Central, Worcester and Nashua, Fitchburg and Worcester, Connecticut and Passumpsic, Lowell and Lawrence, Salem and Lowell, Wilton Branch, Newburyport.

Below will be found the certificates of a number of gentlemen, whose opinions will be good authority in every part of the country.

Office Boston and Prov. R. R.,
Boston, Dec. 28, 1849.

MR. JOHN LIGHTNER,

Sir,—It affords me pleasure to say, that after two years' trial of your boxes, I am fully and entirely satisfied of their superiority over any other pattern we have used. This superiority consists in economy of oil and freedom from "heating." I have tried every pattern of box in use, of any note, and do not hesitate to say, that you have devised one which in every respect combines greater advantages than any other within my knowledge; these advantages are so manifest, that I am fitting up all

our cars with your boxes, as fast as practicable.

Annexed, is a statement of an experiment with your boxes, the result of which may be of use to your interests.

Ten passenger cars, running 72 wheels, fitted up with Lightner's boxes used 41½ pints of Patent Oil, at 50 cts. per gallon, ran 43,099 miles, equal to 5-18 pints per wheel for 43,099 miles. Speed, 30 to 40 miles per hour.

Very respectfully yours,

W. RAYMOND LEE, Supt.

I have examined the above statement of Mr. Lee, and fully concur with him in his opinion of the superiority of Lightner's box.

GEORGE S. GRIGGS,

Supt. Machine Shop B. & P. R. R.

Boston, July 26, 1849.

This is to certify that J. Lightner's axle boxes for railroad cars and locomotive tenders, have been in use on the Boston and Worcester railroad one year, and I unhesitatingly pronounce it, in my opinion, the best and most economical one in use, requiring less oil, of easy application, not susceptible of derangement, as in most kinds in use. When requiring repairs or renewal, the same may be done in one-fourth of the time usually occupied for that purpose. The box requires oiling not oftener than once a month—is kept quite free from dust, and consequently wears much longer than those generally in use.

D. N. PICKERING,

Supt. Motive Power, B. & W. R. R.

Office of Boston Locomotive Works,
December 12th, 1849.

The Boston Locomotive Company have been using J. Lightner's patent axle boxes under the tenders of their engines for several months, and find them more highly spoken of by the railroad companies that have used them in regard to economy in the use of oil, their durability and their ease of adjustment, than any other boxes which they have used. We therefore do not hesitate to recommend them to all railroad companies.

DANIEL F. CHILD,

Treas. Boston Locomotive Works.

Taunton Locomotive Works,
Taunton, July 7, 1849.

MR. H. F. ALEXANDER,

Dear Sir,—Your favor of yesterday came to hand in which you ask what success we have met with, in using Mr. Lightner's patent box for cars, engines, &c.

We have put it in use on the Boston and Providence railroad, New Bedford and Taunton Branch railroad, Central railroad, N. J., Norfolk County, Rutland and Burlington, and as yet we have not had one complaint from them; and from what we have used of it, and witnessed, we do not hesitate to say that it is superior to anything in use for that purpose. It is simple in its construction, and easy of access, and the reservoir is held close to the shaft, and the oil and journal is perfectly secure from dust; they will run from four to six weeks without replenishing the oil. The brass in the box is changed very much easier than by any other plan that we have seen.

Very resp. yours,

W. W. FAIRBANKS, Agent.

Office Providence & Worcester R. R. Co.,
Providence, Dec. 17th, 1850.

H. F. ALEXANDER, Esq.,

Sir,—The "Lightner patent boxes" for cars and locomotives have been in use under a portion of the passenger cars and engines of this company for upwards of two years, and have given very great satisfaction.

Though combining many excellent qualities, their great superiority consists in the economy of oil.

The result of experiments upon this road shows the consumption of oil by the use of this box, to be not more than one sixth part the quantity consumed by the use of the common box.

With the common box, eight passenger cars, 64 wheels, running 90 miles per day, consumed in 12 months 520 gallons of oil, being an average of 8½ gallon per wheel per annum.

With the Lightner box the same cars running the same number of miles per day, during the same space of time consumed 73½ gallons of oil, being an average of 1½ gallon per wheel per annum.

So manifest are its advantages over any other box used by this company, it is intended to place it under all our cars as soon as practicable.

Besides the saving of oil, as they afford complete security from dust, we think them more durable than any other box in use.

Another advantage resulting from the use of this box is, cars run more easier than with the common box. The saving in fuel which it would effect, would of itself, we think be a sufficient inducement to use this box in preference to any other known to us.

Very respectfully,

ISAAC H. SOUTHWICK, Supt.

JOHN B. WINSLOW,
Supt. Machine Shop, P. & W. R. R.

Cambridgeport, April 5th, 1851.

H. F. ALEXANDER, Esq.

Sir,—This may certify that I have been engaged in the manufacture of railway cars since 1834, and have built for the different railroad companies cars of all descriptions to the amount of three millions of dollars, and have used on the above cars all kinds of journal boxes, and find that none give better satisfaction than the "Lightner patent box," both on account of the saving of oil and the arrangement for taking out and re-placing the composition by means of the sliding key, and other conveniences which no other box possesses.

Yours respectfully,

CHARLES DAVENPORT.

Worcester, March 17th, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—This is to certify that I have been for some years past engaged in building cars, and that I have tried most, if not all of the patent boxes, and have found Lightner's patent superior to all others as far as the saving of oil is concerned, also the ease with which they are fitted and exchanged in case they get out of order.

For the last three years, I have put them under all of the cars I have built, and in every instance they have given the most entire satisfaction.

Yours truly,

OSGOOD BRADLEY.

Office Union Works, So. Boston,
May 23d, 1851.

This certifies that I have applied Mr. J. Lightner's patent axle boxes to my locomotives and tenders for the past two years. I consider them superior to all others,—economical in their use, and possessing many important advantages not found in any other boxes.

SETH WILMARTH.

Office 15, R. R. Exchange, Boston,
June 1, 1851.

This is to certify, that we have known the success of Lightner's patent journal boxes upon various roads in New England the past three years, and have been led to examine their peculiar construction.—We are well satisfied of their merits, and have adopted them upon our small gravel cars, and take pleasure, as we ever have done, in recommending their use upon all roads where we are employed in the construction.

GILMORE & CARPENTER,
Contractors.

Amoskeag Manufacturing Co. Machine Shop,
Manchester, May 31, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—We are using the Lightner box on all the engines and tenders we build, and we are satisfied that it is the best box in use, and recommend the same to all those who purchase engines at our works.

Yours respectfully,

O. W. BAYLEY, Agt.

This is to certify that the Fitchburg railroad company having become satisfied of the superiority of J. Lightner's patent Axle Boxes for Railway Cars and Locomotive Tenders adopted the same

and are bringing them into general use upon their road.

One year's experience with the above improvement, has fully convinced me that there has never been anything offered to the public for that purpose which possess such intrinsic value; in fact, this is an improvement which seems to overcome all the difficulties found in all the various kinds now in use. It possesses very many advantages over all others: Some of which are [first] the first cost is much less than that of most boxes in use. [Secondly] 75 per cent is saved in oil; one gill applied to each Journal once a month, or one quart to an eight wheel car, is all these boxes require per month [Thirdly] no dust can gain access to the Journal, which is constantly lubricated with clean oil; hence the saving in repairs of Journals and composition bearings, is a matter of importance. [Fourthly] its construction is truly simple—not complicated, having nothing liable to become loose by constant and severe service. [Fifthly] for convenience there is nothing which approaches this improvement.—The composition bearings may be removed from the Journals of an eight wheel car, by one man, and returned, or duplicates, in twenty minutes, while under the car: the same would require two men, at least half a day with other boxes in use.—The trucks and wheels using these boxes, are free from oil and dirt, usually seen upon all railroad cars, at great expense to the corporation.

NATH'L JACKSON.

Supt. Car Building and Repairs, F.R.R. Co.

Boston, March 9, 1849.

I hereby certify, that I have examined a box for Car Journals, invented by Mr. Lightner of Roxbury, Mass, and I have thought so well of it that I have adopted it on our railroad, I have known of its success on other roads.

S. M. FELTON,

Supt. F. R. R.

Office of the Central R. R., N. J., }
Elizabethtown, May 1849. }

H. F. ALEXANDER, Esq.,

Dear Sir:—Your favor, [wishing to be informed how we liked Lightner's patent axle boxes for R.R. Journals,] has been duly received; in answer we would say, we have used the boxes on Locomotive tenders one year, more or less, and on our cars some six months. I consider them the best boxes in every respect, I have ever used, or even seen used on any other roads—for safety, durability and the economy pertaining to all the details connected with the boxes and Journals of R. R. Car wheels; and we shall adopt them upon this road.

Yours Respectfully,

JOHN O. STEARNS.

Supt. Central Railroad Co., N. J.

Manchester, N. H., Nov. }
1st, 1850. }

H. F. Alexander, Sir,

I have used "Lightner's Boxes" under all the Cars of the Manchester and Lawrence railroad, and feel no hesitation in saying that I think them to be the best boxes now in use.

Yours, &c.,

THEODORE ATKINSON, Agent.

Cheshire R. R. Office, Keene, }
March 5th, 1851. }

Mr. H. F. Alexander,

Sir,—Lightner's Patent Boxes have been used on the Cheshire R. R. about a year, and have given the highest degree of satisfaction.

All the Passenger Cars now in use, and a considerable number of Merchandize Cars are furnished with them, and they will take the place of the Common Boxes on all the cars as fast as circumstances will permit.

Very Resp't.

L. TILTON,

Supt. Cheshire R. R.

Boston and Worcester Railroad, }
Boston, April 1st, 1851. }

H. F. Alexander, Esq.,

Dear Sir,—Lightner's Patent oil saving box for railroad cars, has been adopted by this corporation; we are taking out the common and substituting the

Lightner's at the rate of fifty boxes per month; it will soon take the place of all others, as it is decidedly preferable to any heretofore used by this corporation.

G. TWITCHELL, Supt.

Statement of amount of oil used on 32 8-wheel freight cars, on the Boston and Providence Railroad (with Lightner's Boxes) from March 10, 1849, to February 27, 1851, and upon 12 8-wheeled passenger cars from September 8, 1849, to February 27, 1851.

FREIGHT CARS.							
Amount Oil.	No. months.	Amount Oil.	No. months.	Amount Oil.	No. months.	Amount Oil.	No. months.
1.—21 pts.	10	17.—23½ pts.	14				
2.—19 "	6	18.—23½ "	11				
3.—25 "	13	19.—36 "	21				
4.—18 "	7	20.—22 "	10				
5.—22 "	12	21.—38½ "	24				
6.—24 "	13	22.—29 "	23				
7.—20 "	11	23.—35½ "	23				
8.—21 "	11	24.—37½ "	23				
9.—23½ "	10	25.—51 "	23				
10.—21 "	9	26.—31½ "	24				
11.—20 "	9	27.—28½ "	23				
12.—21½ "	11	28.—36 "	23				
13.—19 "	8	29.—50½ "	24				
14.—25½ "	17	30.—50 "	23				
15.—20½ "	10	31.—41 "	23				
16.—31 "	18	32.—39½ "	23				

Total, 925½ pts. 510

PASSENGER CARS.

1.—19½ pts.	18	7.—36 pts.	18
2.—25½ "	18	8.—25½ "	18
3.—33½ "	16	9.—29 "	18
4.—19 "	15	10.—46½ "	17
5.—15 "	15	11.—9 "	9
6.—22 "	18	12.—65½ "	17

Total, 340 pts. 197

Averaging 1 4-5 pints of oil for freight, and 1 7-10 for passenger cars per month only!

All orders and enquiries promptly attended to.

BRIDGES & BROTHER,

No. 64 Courtlandt st., New York.

July 25, 1851.

Trautwine on R. R. Curves.

By JOHN C. TRAUTWINE, Civil Engineer,
Philadelphia, Pa.

JUST published, accompanied by a Table of Natural Sines and Tangents to single minutes, by means of which all the necessary calculations may be performed in the field.

This little volume is intended as a field-book for assistants; and will be found extremely useful, as it contains full instructions, (with wood cuts) for laying out, and adjusting curves; with Tables of Angles, Ordinates, etc., for Curves varying from 13 miles, down to 146 feet Radius.

A portable Table of Natural Sines and Tangents to minutes, has for a long time been a desideratum among Engineers, independently of its use in laying out curves.

The volume is neatly got up in duodecimo; and handsomely bound in pocket-book form.

Sold by Wm. Hamilton, Actuary of the Franklin Institute, Philadelphia. Price \$1.

Also, "Trautwine's Method of Calculating Excavation and Embankment."

By this method, which is entirely new, (being now made known for the first time) the cubic contents are ascertained with great ease, and rapidly, by means of diagrams, and tables of level cuttings. Thin octavo; neatly half bound, \$1. For sale by Wm. Hamilton.

June 28, 1851.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff St.

CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by POWERS & WEIGHTMAN, manufacturing Chemists, Philadelphia.
Jan. 20, 1849.

To Chief Engineers, Directors of Railroads, Canals, etc.

A Civil Engineer and Surveyor, who has been professionally engaged under the British Government, East India Company, etc., is desirous of obtaining employment as an Assistant. No objection to the South or West. Address for one month to C. E. & S., American Railroad Journal office.

August 16, 1851.

To Engineers.

A NEW WORK on the Marine Boilers of the United States, prepared from authentic drawings, and illustrated by 70 engravings, among which are those of the fastest and best steamers in the country, has just been published by B. H. Bartol, Engineer, and is for sale at the store of

D. APPLETON & CO.,

Broadway

September 1, 1851.

Pneumatic process for making Foundations for Bridges, Piers, etc.

THE Attention of Engineers, Contractors, and Bridge Builders, etc., is directed to this method of forming secure foundations. Hollow Cylindrical piles from 8 inches to 10 feet in diameter may be sunk through sand, mud, clay, etc., to any required depth, and filled with concrete or masonry.

The efficacy and economy of the process has been demonstrated in the construction of numerous permanent works, at a much less cost than the use of any other method. (See evidence in Parliamentary enquiry, Railroad Journal, April 19, 1851.)

Contracts made, or licenses granted for the use of the invention in any part of the United States, by

CHARLES PONTEZ,

34 Liberty street, N. Y.

LOWMOOR IRON.

THE LOWMOOR IRON COMPANY having appointed Wm. BAILEY LANG their sole agent in America and Canada, he is now prepared to receive and execute all orders for Railway Tire Bars, bent, welded, and blocked Railway Tires, Axles, Piston Rods, and Boiler Plates. Also, plain, angle, rivet and every other description of Lowmoor Iron.

All communications respecting the above are requested to be sent to Wm. Bailey Lang, at his Steel Warehouse, No. 9 Liberty Square, Boston, or to the Lowmoor Iron Works, Bradford, Yorkshire, England.

30th Sept., 1851.

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Fuller's Patent India-rubber Springs.

PRICE reduced to 50 cents per pound. The owners of this Patent now manufacture the Springs in their own Factory, and guarantee that each spring shall perform its required duty.

Purchasers guaranteed against adverse claims. They may have full confidence in the working qualities of the springs.

The suits brought against Ray & Co., will soon be brought to issue, and we await the result with satisfaction, having full confidence in the pure administration of the Laws.

The long advertisements put forth by Ray & Co. about prior invention of the spring are worthless he has not proved prior invention, and cannot sustain his patent in a Court of Law.

For the owners of Fuller's Patent,

G. M. KNEVITT,

23 Courtlandt st., New York.

October 7, 1851.

Railroad Iron.

THE undersigned, Agents for British Manufacturers, continue to sell Railroad Iron of the best quality, and of any weight or pattern required; deliverable at any part of the United States or Canada.

They have now on hand, ready for delivery

New York:
2,000 tons of an approved pattern, weighing about 60 lbs. to the yard.

WM. F. WELD & CO.,
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Now being published in Twelve Parts, price 25 cents each, the **PRACTICAL MODEL CALCULATOR**, for the Engineer, Machinist, Manufacturer of Engine work, Naval Architect, Miner and Millwright.—By Oliver Byrne, Compiler and Editor of the Dictionary of Machines, Mechanics, Engine Work and Engineering, and Author of various Mathematical and Mechanical works—illustrated by numerous Engravings; forming, when completed, one large volume, octavo, of nearly 600 pages.

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The examples selected will be found appropriate, and in all cases taken from the actual practice of the present time. Every rule has been tested by the unerring results of mathematical research, and confirmed by experiment, when such was necessary.

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THE Fourth Annual Exhibition of AMERICAN MANUFACTURES, by the MARYLAND INSTITUTE for the Promotion of the Mechanic Arts, will be opened in Baltimore on the 20th October, 1851.

The Exhibition will be held in the **SPLENDID NEW HALL** of the Institute, (fronting on Baltimore street) now being rapidly completed. Their edifice is centrally situated, chaste in its architecture, solid in its construction, and is by far the largest and most complete building in the United States, devoted to the Mechanic Arts. It may be added that this building is 355 feet long by 60 in breadth, with an average height of 68 feet, containing some twelve apartments, the largest of which is 255 feet by 60, and that the cost will be over \$70,000.

To this Exhibition, the Managers ask the attention of all engaged in industrial pursuits throughout the country, and cordially invite them to contribute specimens of their best productions for public inspection, and to compete for the prizes offered by the Institute. These prizes consist of **GOLD and SILVER MEDALS, DIPLOMAS, etc.**, which were last year distributed as follows:—*Gold Medals, 16; Silver ditto, 90; Diplomas, 60;* besides 85 articles of Jewelry, etc., to ladies. *Fair play will be scrupulously observed towards all,* and every facility of Steam power, shafting, fixture, labor, &c., &c., will be amply provided *free of expense.* The machinery will be under a special superintendent, and a fine display of it is looked for. The last exhibition of the Institute was visited by more than 40,000 persons, and with their vastly improved accommodations and alterations, this number will be doubled at the coming display, embracing many Virginians, Pennsylvanians, and other strangers from the South and West.

Joshua Vansant, President.

Ed. Needles, } Vice Presidents.

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Samuel Sands, Rec. Sec'y.

Wm. Prescott Smith, Cor. Sec.

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(The last nine in *Italics* are the Committee on Exhibition.)

The Hall will be opened for the reception of goods on **MONDAY, 13th October**; on the next Monday, 20th, at 7 P. M., the Exhibition will be formally opened to the public, and will positively close on Wednesday, 19th November. Articles for competition must be in the Hall by **Thursday night, Oct. 16, unless delayed in shipment after starting in ample time.**

Those who intend depositing, will give the Committee or the Agent, notice as early as possible, stating the nature of the goods, and probable amount of room required, to exhibit them to advantage.

Circulars, containing a view of the new Hall and the full regulations of the Committee, may be had promptly, by addressing the undersigned, or the Institute's Agent, J. S. Selby, Baltimore, post-paid.

ADAM DENMEAD,
Chairman Com. on Exhibition for 1851.

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Quarts, per dozen, \$1 50	6 oz., per dozen, \$0 50
Pints, " 1 00	4 " " 0 37½
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On draught per Gallon, 20 cents.

This is the best Ink manufactured. It flows freely, is a good copying ink, and will not mould, corrode, precipitate or decay. Orders for export, or home consumption, carefully and promptly attended to by
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To Railroad Companies, etc.



The undersigned has at last succeeded in constructing and securing by letters patent, a **Spring Pad-lock** which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

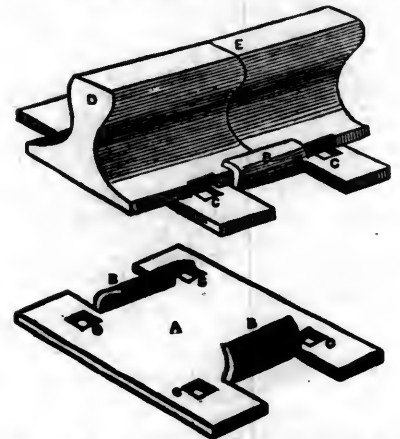
I also invite attention to an improved **PATENT SPRING LOCK**, for **SLIDING Doors** to Freight and Baggage Cars, now in use upon the Pennsylvania Central, Greenville and Columbia, S.C., Reading, Pa., and other Railroads.

Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH,
46 South 8th St. Philadelphia.

May 9, 1851.

The American Railroad Chair Manufacturing Co.



ARE prepared to make **WROUGHT IRON RAIL ROAD CHAIRS**, of various sizes, at short notice.

By use of the **WROUGHT IRON CHAIR**, the necessity of the wedges is entirely done away—the lips of the chair being set, by means of a sledge or hammer, close and firmly to the flange of the rail.

The less thickness of metal necessary in the Wrought Iron Chair gives much greater power and force to the spikes when driven—and consequently a much less liability to the spreading of the rails by reason of the spikes drawing or becoming bent.

The less weight necessary in the Wrought Iron Chair, will enable us to furnish them at a cost much below that of **CAST IRON CHAIRS**.

DESCRIPTION OF THE ABOVE CUTS.

Figure 1 is a perspective view of the rail secured in the chair, and fig. 2 is a perspective view of the chair itself. D, E, are sections of two rails placed together, and secured at the joint on the chair by the jaws B, B. The chair is bolted down by spikes C, C. In fig. 2, the chair is represented as made of a single block or plate A of wrought iron.

The chair is set in its proper place on the track, spiked down, and the ends of the two rails brought together within the jaws as represented in fig. 1.

For further information address

N. C. TROWBRIDGE, Secretary,
Poughkeepsie, N. Y.

June 1, 1851.

Railroad Commission Agency.

THE Subscriber offers his services to Railroad Co's and Car Makers for the purchase of equipment and furniture of roads and depots and all articles and materials required in the construction of cars, with cash or approved credit. No effort will be spared to select the best articles at the lowest market price.

He is sole Agent for the manufacture of the **ENAMELED CAR LININGS**, now in universal use. The best Artists are employed in designing new styles, and he will make to order pieces with appropriate designs for every part of the car, in all colors, or with silver grounds and bronzed or velvet figures.

He is also Agent for Page's Car Window Sash Fasteners, which is preferred by all who have used it to any other.

CHARLES STODDER,
75 Kilby st., Boston.

June 20, 1851.

3m.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 136 NASSAU ST., NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.

SECOND QUARTO SERIES, VOL. VII, No. 49! SATURDAY, DECEMBER 6, 1851 [WHOLE No. 816, VOL. XXIV.]

PUBLISHED BY J. H. SCHULTZ & Co., 136 NASSAU ST.

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American Railroad Journal.

Saturday, December 6, 1851.

Tehuantepec Railroad.

In our last, we gave a brief description of the route of this proposed road, showing its practicability, and its superiority on the score of directness, and in possessing better harbors, and a more healthy climate, over any other across the Isthmus. We now wish to point out the advantages that will result to the railroads of the United States from the opening of the above route, compared with those by way of Panama and Nicaragua.

But before proceeding to this, we will state one, and perhaps the great cause of the unhealthiness of the Panama route. This results from the very rapid change of climate to which a person is subjected in a few days, in running from high latitudes, such as New York or San Francisco, to the region of the equator. The effect of this sudden change is most pernicious to health. A person has no time in which to become acclimated to it. His constitution becomes so excessively debilitated, that the least imprudence or want of care is fatal. All this is due, as we said before, to the rapid change of climate in the passage from New York to San Francisco. When we add to this the pes-

terious climate of Chagres, no wonder that so many fall victims to disease on the Panama route. Just in proportion as we can avoid the low latitudes in the passage, shall we diminish the dangers of the route from sickness.

But to the question before us. A greater part of the travel to California now leaves the northern Atlantic ports in steamers and sailing vessels. Of course very little of this travel passes over our railroads. They receive but a slight accession to their business from the immense tide of travel flowing to the Pacific coast.

Let us suppose the Tehuantepec route to be opened, and that we have a continuous line of railroad from New York to New Orleans. That city would be in the direct line from New York to Tehuantepec, and the whole route to the Pacific coast could be performed by land, with the exception of crossing the Gulf of Mexico, a distance of about 900 miles. If such a route could be opened, nine out of every ten passengers, going to, and returning from, California, would take it. In the first place, it would be the cheapest. It would be much the most expeditious. It would be far the pleasantest and safest, by avoiding the dangerous navigation of the Florida keys. It would be much the most convenient route, as it would enable the business man, to take all the leading eastern cities on his way. All these advantages combined would throw upon our lines of railroad running in the direction of New Orleans, from the most distant extremes of the country, the whole tide of travel, and a very large amount of freight, destined for California. This travel, though now in its infancy, is enormous. Of its future extent we can form but a faint idea. If all of this travel and business could be thrown upon our roads, and be carried by them from one extreme of the Union to the other, a vast addition would be made to their ordinary revenues.

Every portion of the country is now struggling to complete the lines of railroad which they have in progress. Many of these lines threaten to overtask the efforts of those engaged in their prosecution. Now, we contend that when government proposes to extend aid to private enterprises, it is in duty bound to do this in such a manner, as to benefit the greatest number possible. Take, for instance, the Panama route. Only a very few of our citizens are interested in this, and any gratuity extended by government, goes for the benefit of a small number of wealthy capitalists of New York,

who certainly stand in no want of such favors. If on the other hand, the aid of the general government could secure the opening of the Tehuantepec route, every person interested in the numerous lines of railroad running north and south, would be directly benefitted by such a result.

We shall very shortly have what may be termed a coast line of railroads, extending from New York, or rather from the eastern part of Maine, to New Orleans. This line is already in full operation to Wilmington, North Carolina. The Wilmington and Mauchester railroad, now well advanced, and most energetically prosecuted, will carry this line to the railroads of South Carolina, Georgia and Alabama, and to Mobile and New Orleans. The line indicated, must always constitute one of the great through routes between the north and the south, and every portion of it is directly interested in having New Orleans the port of embarkation for the travel to California.

In moving west, we come to what may be called the great central line between the northern and southern States, traversing western Virginia, eastern Tennessee, northern Georgia and central Alabama, and running in a general southwesterly direction towards New Orleans. This line is interested equally with the coast line, in having the California travel take the New Orleans and Tehuantepec route. This line is of vast extent, and entails immense interests. It is built at great cost, and it is with difficulty that it is carried forward by the people on its route. Any aid that government can bestow, would here accomplish a great good, and would materially lessen the burdens of a large class of our citizens, engaged in a most meritorious object.

On crossing into the Mississippi valley, we find lines equally important, and equally deserving. The great Mobile and Ohio railroad is, taken together, one of the grandest projects ever undertaken on this continent; and, when completed, is calculated to exert the most beneficial results, not only in a material and commercial, but in a political and social point of view. Extending from the Gulf to the Lakes, it will become the great channel of commerce between our northern and southern boundaries, between the tropics on the one hand, and high northern latitudes on the other. Socially it will blend and harmonise the peculiarities of these two extremes. The general government, influenced by the considerations to which we have

referred, have already made a liberal donation to this great line; but we believe that if it could secure its portion of the California travel, this would be a greater boon than all it has yet received. This road will be connected with New Orleans, by the road from that city through Jackson, Miss.

What we have said above, is equally applicable to the Alabama and Tennessee, and to the lines with which that will become connected. It applies in some degree, to nearly every road in the United States, particularly to those running north and south, and the advantage which they will derive will be in proportion to the magnitude of their respective lines.

We believe that our railroad companies feel the full force of what we have above stated. Why then should they not unite in a common object and upon a ground of mutual interest, in securing the opening of the Tehuantepec road. Money is not required to secure this. All the Tehuantepec company ask for is, that the government should protect their rights to their grant for a road, and encourage their efforts, by the same aid now extended to the Panama company, in the shape of contracts for carrying the government mails. So much our railroad companies can and should insist upon, and an united and concentrated effort, through the representatives in Congress, of the different sections interested, would turn the vast tide of California travel upon our leading lines of railroad.

We hope to see such efforts made to effect so desirable a result. It is called for, not only upon the ground of justice, but as a measure dictated by a wise self interest. Government, too, in extending aid to the Tehuantepec route, should have another object in view, and this should be to break down the odious and unscrupulous monopoly now enjoyed by the Panama company, in the carriage of freight and passengers to California. The cost of the passage thus far has been beyond all reason, and has been borne with peculiar hardship, as most of our emigrants are men of very limited means. The price charged for a passenger has had no relation to the expense, but has been graduated solely by the power that the Panama company possessed of getting the largest possible sum. The only way by which this abuse can be corrected, will be to open every practicable route, and by affording ample facilities, to allow competition to bring down the price to a fair rate. Congress could not perform a more just, or more humane act, than by assisting to throw open ALL the Isthmus routes; as, in such an event, competition between them would not only bring down the price charged for the passage to a reasonable point, but would secure good treatment, and comfortable quarters for the passengers. Let Congress look at, and maturely consider, these things, before it yields any further to the rapacious demands of the Panama company, which will be the more clamorous, from the immense sums expended, and we believe fruitlessly so, upon their road across the Isthmus.

The slight progress which the Panama company has made, and the improbability of that work ever being carried through, have been urged as objections against the probable success of the Tehuantepec project. Though there may be some plausibility in this objection, we are satisfied that it is not well grounded. The circumstances of the two cases are entirely different. The Panama route is notoriously unhealthy. The Tehuantepec route is believed to be as healthy as the routes of many of our southern and western roads. We all know how many engineers on the Panama route have fallen

victims to the climate. We never met with a person who had been upon that line, who did not return the mere ghost of a man, or who did not express an unwillingness to return. On the other hand, the whole corps employed on the Tehuantepec route not only enjoyed the best of health, under great privations while upon the ground, but all of them, without exception, are most anxious to return to the field of their labors. This fact speaks volumes in favor of the Tehuantepec route, and proves its vast superiority over the Panama on the score of health, as well as in other respects.

Letter from the President of the Pacific Railroad Company to the Hannibal Convention.

St. Louis, October 29, 1851.

GENTLEMEN: I regret that my continued bad health will not permit me to participate with you in celebrating the commencement of work upon the Hannibal and St. Joseph railroad. I thank the committee of the citizens of Hannibal, and the Board of Directors of the railroad company sincerely for their several special invitations to be present upon so interesting an occasion. My heart and good wishes, however, will be with you, as they have been heretofore, and I shall look with confidence to see a work so warmly sustained by the people immediately interested, so much needed, and so important to the whole country, prosecuted from the 1st Monday in November to its triumphant completion. I regard the line you have projected as very favorably situated in every respect for the construction and support of a railroad. You have a comparatively level country—you have coal, wood and water accessible for all the purposes of operation. You are on the great route of emigration to the Far West, and will connect the waters of the Missouri with the Mississippi. You are upon fertile lands, all the way, capable of sustaining a vast population, and of producing an immensely valuable surplus of agricultural staples for exportation. In a national point of view, however important the Central railroad of Illinois may be, I regard your road as of equal—direct value to the United States, and therefore as equally entitled to their aid. The Central road is longitudinal—yours is latitudinal. The great currents of trade and population take the lines of latitude, not of longitude. I presume that it will be found that no lines of railroad to facilitate Northern and Southern intercourse and trade, pay so well as those which facilitate Eastern and Western intercourse and trade.

I say this in no invidious spirit, but allude to it as perhaps a "fixed fact." Experience is demonstration that the great policy of the East is *Western extension* of railroad lines, and the more capital there is invested by the Eastern States in works projected to the West, the more works there will be glad to see constructed in the same direction. New York, for example, the undoubted commercial capital of this country, and likely long to remain so, has constructed a canal and two railroads to connect tide water and the Lakes. It is evidently the interest of the capital invested in these works to extend the lines along both shores of Lake Erie, and to continue in the natural course by the way of Terre Haute to the Mississippi at St. Louis, on one side, and to Chicago, reaching the great river at Galena, and Rock Island on the other. This trade of the West has enriched New York, and rendered her lines of travel and transport valuable. Boston, by her unexampled enterprise, has for a time shared it, taking a large portion of it, as it were, from the very mouth of New York—Philadelphia and Baltimore are reaching afar their arms to engage in a contest for this trade in the Valley of the Ohio, or upon the plains of the Buckeye State.

The two lines we are now constructing in Missouri, the one from Hannibal to St. Joseph on the north, the other from St. Louis to the western line on the south will be links in the great chain which will connect the eastern and the western boundaries of the United States. All the railroads which may be finished east of the Mississippi river, will be interested in the success of these two lines, and all

the States, as they cherish their own works from Illinois to Maine, and from Maine to Carolina, are interested in encouraging them by any influence, political or otherwise, which they may bring to bear.

Missouri stands in an attitude somewhat different now from that she has occupied for many years. She has not heretofore given much notable evidence of active friendship for internal improvement. She has now emerged from her barbaric stolidity, and entered a career of enlightened improvement. She has commenced with due caution. She was particularly fortunate in being able to avail herself of the vast experience of the other States, in having a good credit unimpaired, and being comparatively free from debt. We shall soon feel these advantages. The last Legislature must have the credit of bringing the State to a fair commitment, and of preparing the way for more liberal and perfect laws hereafter. In the old attitude of Missouri, the subject was approached with some timidity, and perhaps not so much was gained or even asked, as might have been in a more advanced state. Yet I am not prepared to say that I would alter materially, the act loaning the credit of the State to our two railroads. There are very few of our railroad charters, however, that will be found to work well in practice. Experience will show in what particulars of detail they will require amendment. A railroad, although necessarily in the hands of a corporation, is a public enterprise, almost always engaged in, as was especially the case in Missouri, for the promotion of the general prosperity. If authorized at all by the Legislature, it is because public convenience or good requires it. In similar designs, generally, private interests are required to yield to those of the public. Individual rights ought always to be protected certainly, and are, so far as the intention of the law is concerned. But that an individual should be permitted to obstruct for months and perhaps a year or more, such a work, in order to obtain not only his rights, but something more, unreasonable and unconscionable sums of money for pretended and unreal damages, seems preposterous and absurd. Yet an individual through whose premises a railroad corporation may desire to construct their road, however much the road may enhance the value of his property, may, it seems, harass, delay and worry a company into a virtual surrender of their purse into his hands, till he gorges himself to his entire satisfaction. This seems to me nothing less than "fiat burglary," and requires a little legislative doctoring, or railroads in Missouri will cost much more than has been estimated.

In appropriating three millions and a half to our two leading lines of railroad, the last legislature did as much as prudence, in the use of the public credit, seemed to warrant. It is now of the highest importance that we make a careful and economical use of this credit, in order, that it may not depreciate under our management, but that it may take and maintain a rank to which it is entitled, at par with the leading State stocks of the country. There is no reason why Missouri credit should not be first rate. She has never failed to meet her engagements, nor has she made any she cannot meet. With a great variety of valuable natural resources, such as few other States possess, and immense territory of 65,000 square miles, a present population of 700,000, increasing at a rate that will enable her, if continued, to number over a million in the next ten years, she must act very unwisely and very differently from other States and people, if she does not find herself entirely at ease in regard to any obligations she has yet entered into, or is now contemplating.

The two railroads now going forward will furnish a test of the wisdom and utility of their projection in this State, and if the test is unfavorable, probably no more will be attempted. If favorable, they may be used as base lines, from which branches may be projected whenever they will pay, and as examples for independent lines. For myself, I anticipate the success of the system, and hope to live to see the Pacific road in operation, at least to the western boundary line, with a branch reaching into a southwestern district of the State, and either a branch or an independent line to the Iron Mountains, and perhaps a continuation to Arkansas. On the north side of the river, I hope to witness your

line completed, and a line from St. Louis crossing yours and reaching toward Iowa, and a connecting link between your road, and the Pacific road at their upper end, if not also, in or near their middle sections.

Having the advantage of a new country, and no old railroad connections to make, we have, on our Pacific road, adopted the wide gauge—five and a half feet. I should be glad to see your road adopt the same. It is a gauge particularly suited to the great west, and there is scarcely a doubt that the great east, if they were to commence *de novo* now, would adopt that gauge. Its great advantage consists, briefly, in admitting of a better arrangement of the engine, higher driving wheels, lower centre of gravity, greater speed, greater safety, and of larger and more commodious cars for passengers, as well as for cattle, and freights of a bulky character as many of yours will be. I found while at the east, that our gauge was generally approved by engineers, superintendents of roads, and manufacturers of engines. We are endeavoring to construct the Pacific road, so far as we go, as well as we can get the work done in this part of the country. We are going on by special contract—not by the 'lumping process,' which is so often availed of as wonderfully easy for a company, but as often turns out so hard for travellers, and so bad for working, that reconstruction necessarily has to follow.

It is much to be regretted that we cannot manufacture our engines and rails at home, where we have such an abundance of iron. But our Missouri mechanics are not yet quite prepared for the manufacture of the former, and nowhere in the country can manufacturers compete with the English in the production of rails. A dispatch from London, written during the present month, informs me that they can now be purchased for less than £5 per ton, delivered on board ship. We hope, however, after our first models of engines are brought out from the east, that we shall soon have a locomotive manufactory here. Everything else, cars, chains, spikes, and probably wheels and axles, etc., we expect to have manufactured in St. Louis, for our own supply, and for the furniture of any other neighboring road that may require them.—And everybody knows that one branch of industry generates and sustains another.

We shall then be fairly launched in internal improvement and domestic manufactures. And who shall then say, with all these resources, with these evidences of industry and enterprise, and this wide and free field around us that we cannot maintain a respectable footing in the race of civilization? Under such circumstances nothing but some great and radical wrong done, or suffered by us, can prevent our prosperity.

I remember, with great pleasure, the agreeable acquaintances I formed in the Legislature among the friends of the Hannibal and St. Joseph railroad. On the Loan Bill, the friends of that road, and of the Pacific road, co-operated heartily together. Let the kind spirit which prevailed there continue. We have still great labors before us. We want the right of way through the public lands, and such a grant of the lands themselves as we are in justice and equity entitled to. If it is right and proper to give lands to one State to make railroads, it probably is to another. And it would be grossly partial and unfair for him to give one of his boys a large slice, and another one, equally deserving, but perhaps not quite so smart, none at all. This cannot be. And it will be no good argument to say, because one of his big boys has not turned out so smart in the use of the gift, as Uncle Sam expected, that therefore Missouri shan't have any. Missouri must have justice. Uncle Sam is a large landholder here, pays no taxes, and his lands are to be largely benefited by these improvements. He can afford, without any loss, but with positive profit to himself, to give us every other section, for six miles on each side of our two roads, or the equivalent of that, on the usual conditions. I trust, we shall not only co-operate together in procuring this grant, but that we shall have the unanimous support of the State, and the co-operation of the friends of internal improvement in the Union, and that our claims may be so fairly and vigorously presented at the next session of Congress, that the grant will be made at once.

I fear I shall not be heard for much speaking, but the heart sometimes gets the better of the head, when the unlucky possessor of it must crave indulgence.

I am, very respectfully,

Your obdt servt,

THOS. ALLEN.

To Messrs. W. M. Cooke, R. N. Anderson, J. P. Ament, J. F. Hawkins, E. M. Moffett, Committee of citizens, and W. Jones, Esq., Sec. H. and St. J. R. R. Co.

From the Merchant's Magazine.

Internal Improvements in the State of New York.

A SKETCH OF THE RISE, PROGRESS, AND PRESENT CONDITION OF INTERNAL IMPROVEMENTS IN THE STATE OF NEW YORK.

RAILROADS, ETC.

Continued from Page 637.

At the time the public attention was first awakened to the importance of connecting the Atlantic with the western Lakes, railways were very little known, except the rude structures which had been used to facilitate the transportation of coal from the mine to the shipping port. And hence, when the resolution of 1810 was introduced into the legislature of the state of New York, by Jonas Platt, for the appointment of commissioners on internal improvements, it directed them "to explore the route of inland navigation, from Hudson's river to Lake Ontario and Lake Erie, examining the present condition of the navigation, and considering what further improvement ought to be made therein."

In making their report in 1811, under this resolution, the commissioners allude to the probable necessity of using railways in two cases only; one at the falls of Oswego, and the other in the vicinity of Albany. Mr. Weston, an English engineer employed by the "Western Inland Lock Navigation company," had given an opinion that a canal was impracticable at the falls of the Oswego, about twelve miles from the lake;* and as canal-boats could not navigate the lake, the commissioners came to the conclusion that a railway might be substituted for the canal from the falls to the lake. This says the report, "according to the estimate of Mr. Latrobe, would cost about \$10,000 per mile; and by the aid of it, one horse could transport eight tons, supposing the angle of ascent not to exceed one degree. But an angle of one degree will ascend in a mile upwards of ninety-two feet, or nearly as much as the difference of level in the whole twelve miles."

In another part of the report, where it was proposed to bring the Erie Canal on an inclined plane from Lake Erie, "to a reservoir near Hudson's river, without locks," the commissioners say, that the descent there, of from three to four hundred feet by locks, would cost, perhaps, a million of dollars; "or if it should be deemed more advisable to transport by railways, the water used for machinery would probably yield a rent sufficient to keep the canal in repair."

In February, 1812, about one year after the publication of this report, Col. John Stevens, of Hoboken, New Jersey, addressed "a memoir to the canal commissioners," in which he urged them to substitute for the canal, on the whole distance from Lake Erie, "a railroad, on which the travel at no time would be interrupted." There is a precision in his estimates of the qualities of a railroad, and the power and speed of an engine, which is quite remarkable, when it is considered that this memoir was prepared fourteen years before the Liverpool and Manchester railroad was chartered in England, and seventeen years before the offer of £500 was made by that company for the most approved locomotive engine, to draw twenty tons at the rate of ten miles an hour.

As late as 1829, a committee of engineers in

* These obstacles have been overcome by the construction of the Oswego Canal. Mr. Weston, in a letter to the commissioners in 1812, says:—"I know not whether I ever declared that it was impossible to conduct a canal by this route. I should rather think it was the technical term *impracticable*; of course restricted in the sense mentioned in the report of 1811." That is, in reference to the means which could be prudently applied to the object.

England, after examining the operations on the Stockton and Darlington railroad,* reported that the advantages and disadvantages of stationary and locomotive engines were pretty equally balanced, but that, upon the whole, looking especially at the expense of each, *the fixed engines were preferable*.

The reader will bear in mind, that the report of the New York commissioners, to which Col. Stevens refers, proposed to construct a canal from Lake Erie to Hudson river, on an inclined plane, to be supplied for the whole distance from the waters of Lake Erie, and maintaining a uniform descent in the canal by filling up ravines, which would have required at the Cayuga outlet an embankment for the bed of the canal one hundred and thirty feet high, for a distance of more than a mile. It was, therefore, a canal of this description to which Col. Stevens alluded when he spoke of it as a work "unparalleled for the boldness of its conception and the grandeur of its objects;" and the completion of which he thought would be protracted to a distant day, and that many might hesitate in regard to such heavy expenditures on an object presenting so distant a prospect of remuneration: adding, however, that a cost of even fifty millions would not probably exceed half the value of the property which at no distant period would be carried along the canal. Col. Stevens reminds the commissioners that the projected route from Lake Erie to the Hudson being in a high northern latitude, a canal would be locked up by frost for five months in the year; and that from the southern border of the lake, connections might be formed with the head-waters of the Ohio and the Susquehanna, subject to little interruption from ice. He admits, however, that the elevations on these routes are such, that the one to Albany is comparatively level. When, in addition to these advantageous circumstances," says Col. Stevens, "we take into consideration the decided superiority of the city of New York, in a commercial point of view, it will not be practicable to divert into another channel the current of trade, when once fairly established, from the interior to this city." To secure the completion of the communication in the shortest time, and an uninterrupted use of it during winter as well as summer, Col. Stevens recommended a wooden railway, to be supported on pillars from three to six feet from the surface of the ground.† The carriage-wheels of cast-iron, the rims flat with projecting flanges, to fit on the surface of the railways. The moving power to be a steam-engine with a cylinder of ten inches diameter, the elastic power of which, fifty pounds to the circular inch, would possess a power equal to five thousand pounds on the whole area of the piston, moving with a velocity of three feet in a second. This exceeds the power of twenty horses, equal to one hundred and sixty tons, on Mr. Latrobe's estimate of the power of one horse to draw eight tons on a grade of ninety-two feet to the mile. Should the wooden rails wear, so as to be inconvenient on account of renewal, "recourse could be had at any time to cast or plated iron railways, which could be fastened on the top of the wooden rails."

In a letter dated Albany, March 11, 1812, Chancellor Livingston wrote to Col. Stevens as follows:—

DEAR SIR:—I did not till yesterday receive yours of the 25th of February: where it has lain on the road I am at a loss to say. I had before read of your very ingenious proposition as to the railway communication. I fear, however, on mature reflection, that they will be liable to serious objection, and ultimately more expensive than a canal. They must be double, so as to prevent the danger of two such heavy bodies meeting. The walls on which they are placed, must be at least four feet below the surface, and three above, and must be clamped with iron, and even then would

* This road, used for the conveyance of coal, was put in operation in 1825. All kinds of locomotive power were employed upon this line—locomotive engines, horses, and fixed engines.—*North British Review*, Aug. 1849.

† The railway from St. Petersburg to Moscow, as it was projected by the Chevalier Von Geistner, lies wholly on an embankment ten-and-a-half feet high. This height was adopted to facilitate the sweeping off of the snow by the wind.

hardly sustain so heavy a weight as you propose moving at the rate of four miles an hour on wheels. As to wood, it would not last a week. They must be covered with iron, and that too very thick and strong. The means of stopping these heavy carriages, without great shock, and of preventing them from running upon each other—for there would be many running upon the road at once—would be very difficult. In cases of accidental stops, or the necessary stops to take wood and water, &c., many accidents would happen. The carriage of condensing water would be very troublesome.—Upon the whole, I fear the expense would be much greater than that of canals, without being so convenient.

R. R. LIVINGSTON.

On the 16th of the same month, Gouverneur Morris, chairman of the board of commissioners, sent him the report of a committee to whom his proposition had been referred. The report contains several objections to the plan of Col. Stevens, to which the latter replied in a second communication. For a copy of the report and reply, see Vol. XIV, of this magazine, pp. 256-7.

In 1812, Col. Stevens published a pamphlet entitled "Documents tending to prove the superior advantages of railways and steam-carriages over canal navigation." In an introduction accompanying these documents, he says: "Although my proposal has failed to gain the approbation of the commissioners for the improvement of inland navigation of the state of New York, yet I feel by no means discouraged respecting the final result of the project. The very objections the committee have brought forward, serve only to increase if possible, my confidence in the superiority of the proposed railways to canals."

Col. Stevens had also presented his plans to Mr. Madison, and in referring to the importance of railways to the general government, he says: "They would at once render our frontiers on every side invulnerable. Armies could be conveyed in twenty-four hours a greater distance than it would take them weeks, or perhaps months to march." He alludes to "the celerity it would afford of communication with the distant sections of our wide-extended empire. To the rapidity of the motion of a steam-carriage on these railways, no definite limit can be set. The flying proas* in the Pacific ocean sail twenty miles the hour. The resistance of the water increases in the velocity of the vessel. Not so with a steam-carriage: it moves in a fluid eight hundred times more rare than water. The resistance will be proportionately diminished. If then, a proa can be driven twenty miles per hour by the wind, through so dense a fluid as water, I can see nothing to hinder a steam-carriage from moving on these ways with the velocity of one hundred miles an hour. This astonishing velocity is considered as merely possible. It is probable that, in practice, it may not be convenient to exceed twenty or thirty miles per hour. Actual experiments, however, can alone determine this matter, and I should not be surprised at seeing steam-carriages propelled at the rate of forty or fifty miles per hour."

Col. Stevens added in his introduction, that "these railways are calculated to be pre-eminently useful in the Southern States. The predominance of sand, the level surface, and abundance of pine-timber would not only render the construction of these railways very cheap, but peculiarly advantageous."†

It should not be forgotten that these views of Col. Stevens were presented to the public in 1812; and that in 1829, seventeen years thereafter, Mr. Gurney, of England, was experimenting with steam-carriages on common roads, from London to Bath; and so prevalent was the idea, that the means of interior communication would be effected by steam-

* A kind of sailing-vessel.

† A railway, 135 miles in length, from Charleston, South Carolina, to Augusta, in Georgia, was commenced in 1830, and finished in 1833, at an expense of \$1,336,615, including engines, cars, and depots; less that \$10,000 per mile. At the time of its completion, as stated by Mr. Pitkin, this was the longest railroad then in operation in any part of the world. Horatio Allen states, that it was decided to use the locomotive engine on this road, before the question was determined as to using it on the Liverpool and Manchester railway.

carriages on common roads, to the exclusion of railways, that, as late as the year 1831, a committee of the English House of Commons presented to Parliament a very favorable report on the subject.‡

Mr. Bloomfield who called the public attention to the highly interesting production of Col. Stevens, in the *Merchants Magazine* for March, 1846, (vol. xiv. p. 249,) has the following remark, in regard to the rejection of a proposition for a railway by the New York commissioners: "Upwards of sixty millions of capital, and more than half that amount in interest and expenses—say one hundred millions—has been thrown away in these States, because such distinguished men as Robert L. Livingston, Gouverneur Morris, and De Witt Clinton, did not investigate the merits of railways, which are now in a fair way to supersede the canals in these States."

The resolution of the New York Legislature of 1810, from which the commissioners derived their authority, contemplated the examination of the works of the "Inland Lock Navigation Company," and a recommendation of such improvements in the "inland navigation," from the Hudson to the Lakes, as they deemed necessary for the interests of the State. They were, in fact, a board of "canal commissioners;" and whilst they referred the communication of Col. Stevens to a committee of the board, to examine and report thereon, they seem to have preferred their own plan of uniting the great Western Lakes and the Atlantic by a canal, to the proposition of Col. Stevens for a railway. At the time when the first Commissioners were called on to decide the important question as to the best plan for uniting the Western Lakes and the Atlantic Ocean, canals had been successfully tried in England, whereas the work which has been styled "the grand British experimental railway," from Liverpool to Manchester, was not fully tested until three or four years after the Erie canal was finished. The commissioners of 1811-12, were surrounded with many difficulties, and found it no easy task, although the great advantages of canals had been fully established in England, to satisfy the people of the State that a canal 350 miles in length was not a hazardous enterprise. And whilst it is reasonable to believe that their judgments were convinced of the superior usefulness of a canal on the lines from the Lakes to the Ocean, they may not have considered that it was their duty to present the proposition of Col. Stevens to the Legislature, or to do more than furnish the author of the railway memoir with a report on it from the body to which it was addressed.

Those who had the direction of the public works twenty years subsequent to the period referred to, and after the practicability and the advantages of railroads were fully established, can with more justice be arraigned for not having recommended to the Legislature the substitution of railways for the Chenango, the Black river, and the Genesee Valley canals. The canals which connect extensive navigable lakes with the Hudson river, have been much more useful in getting the products of the forest, of agriculture, and of the mines, to market, than railroads could have been. Among other advantages is the avoidance of one and in most cases two transshipments. This may be illustrated by comparing the Northern canal, which connects Lake Champlain with the Hudson river, with the Chenango canal, which does not intersect navigable waters. The former, with the Glens Falls feeder, has a canal navigation of seventy-nine miles; the Chenango canal has ninety-seven miles. The products accumulated from two hundred miles of the shores of Lake Champlain enter the canal at Whitehall, and, in many cases, the boats which are laden on the lake one hundred miles north of the canal are taken to New York without a transshipment of the property. In this case heavy products are conveyed 314 miles by water, paying toll on sixty-four miles only. The result of this accumulation by lake navigation, gives to the Champlain canal a business equal to 395,456 tons in 1850, whereas the business on the Chenango canal, in the same year, gives only 41,892 tons; the former averaging 5,075 tons per mile of canal navigation, and the latter only 531 tons per mile. In compari-

‡ *North British Review*, Aug., 1849, p. 308.

son with the Oswego canal the contrast is still more striking. The business of that canal, [which is not as long as the Chenango by fifty-nine miles, and cost \$1,850,000 less,] in 1850 was equal to 583,346 tons, against 41,892 on the Chenango; averaging on the Oswego 15,351 tons per mile of canal navigation, and on the Chenango, as before given, 531 tons per mile.

It is quite obvious that a railroad through the Chenango Valley, principally a grazing region,* would have furnished adequate accommodations for the tonnage, and, by concentrating the whole transportation of passengers and products, would probably have yielded a fair remuneration on the outlay, and furnished to the inhabitants at all seasons of the year, accommodations far superior to the canal.

As a question of mere pecuniary investment, the substitution of a railroad for this canal would probably have saved the State \$3,678,130, which it has already expended on the Chenango canal. But this misdirection of the public funds to a canal where a railroad would have been more useful and profitable, cannot with propriety be charged to an error of judgment on the part of the commissioners of 1812. When the condition of our own State at that time, and that of the country on the borders of the Lakes is considered; and when we look back on the wonderful achievements, during the last thirty years, of the "lake-canal policy," the weight of evidence is strongly in favor of the wisdom of the commissioners who decided in favor of connecting the great Western and Northern Lakes.

In what other channel of transportation could the coarse and bulky products of the forest, of agriculture, etc., have been brought to market, with the same facility and saving of cash payments, as by the canals? When the Erie and Champlain canals were completed, the inhabitants on their borders, in getting their products to market, adopted the method in which their own labor and means could be made available, with the smallest outlay of ready money. Those engaged in the lumbering business would construct cribs of a size to pass the locks, and fastening these cribs together, and using their own teams, would pass from lock to lock with rafts a thousand feet in length, to be separated and passed through each lock, and again formed into a raft at the foot of the lock. In this way twenty-two and a half millions of feet of sawed lumber, and twelve hundred thousand cubic feet of timber, passed the Champlain canal in 1823. The commissioners state, in their report of 1824, that the rates of toll on rafts had been doubled, to induce those who adopted this mode of transportation to use boats. Scows, costing three or four hundred dollars, were constructed for the transportation of lumber, wood, &c.; and it was estimated by the commissioners, that, by this regulation, three-fourths of the sawed lumber was transferred to boats. Yet, for the whole of the thirty years of canal navigation, timber has been prepared in rafts on Lake Champlain, towed to Whitehall, and, after being passed through the canal, re-raftered on the Hudson, and towed to New York. Companies were organized at the commencement of canal navigation, and regular lines of boats established, for the transportation of merchandise, emigrants, agricultural products, etc.; and the prices of transportation used in the tables annually published in the trade and tonnage of these canals, are the average cost of conveyance by these lines. But the advantages derived by those who furnished their own boats, horses, forage for them, and provisions for their own boats'

* It is shown in Senate doc. No. 27, of 1839, that the product of animals, [or of a grazing country,] such as pork, beef, butter, cheese, lard, and wool, which came to market on the canals in 1838, was, in weight, equal to 16,892 tons, valued at nearly four-and-a-half millions of dollars, and all the tolls received on account of these articles, either coming to market, or moved on the canals, was only \$31,155. This is a little more than two-and-a-half per cent of the tonnage, and less than two per cent of the tolls of the canals, and yet the value of the product of animals is more than nineteen per cent of the marked value of all the articles coming to tide-water. This, says the report of 1839, "illustrates that a canal cannot, at our rates of toll, receive a support from a grazing country."

crews, all of which were, at one time, exempt from the payment of toll,* are not easily computed. A large portion of the tonnage of the canals, embracing the coarser and less valuable products of the forest, of agriculture, and other commodities of little value and large bulk, find their way to market through this cheap mode of conveyance. Even in 1850, amidst the lockage of thirty seven thousand boats, there passed on the Erie canal, towards tide-water, 1663 cribs of timber; and the scow-boats, without decks, used principally for lumber, wood, stone, etc., exceed in tonnage the aggregate both of the "lake-boats" and the "line-boats." Whilst the "packet" and the "lake" and "line" boats number 2,645, and are rated at 110 500 tons, the scow-boats, with and without decks, number 2,370, and are rated at 230,800 tons.

The canal is a common highway constructed by the State, on which every person may transport his products to market in his own boat, by paying the established rates of toll. Inhabitants of other States register their boats, and navigate the canals with all the privileges of our citizens. If, instead of the Erie canal, a railroad had been constructed, the State would have become the common carrier of the products of the country, furnishing the cars and the motive power; and its citizens would have been shut out from all participation in the transportation of their own products to market. The transit of seventy millions worth of property belonging to the citizens of other States, which is now under the management of companies responsible for its careful preservation and safe delivery, would be exposed to the custody of State agents, possessing the power to screen themselves from personal responsibility, and casting the claim for damages on the State, which is not suable, and leaving the claimant to the protracted remedy of an application to the Legislature. Under the management of transportation companies on the canals, and railroad corporations, damages to persons and property, if not promptly settled by the party doing the injury, are readily redressed through the courts; and there is, probably, no highway of commerce in the world where the same amount of property is transported with less damage, and with as great security to the owner of the property, as on the Erie canal.

The management of a canal by the State is much more simple than that of a railroad; and although repeated efforts have been made to induce the Legislature to construct railroads to be managed by the State, and to assume those which have been constructed by companies, yet a prevalent conviction that the transportation business can be conducted more usefully, to all parties, by individuals than by State agents, has thus far kept the State free from any other connection with railroads than the loan of its credit to some of them.

For the transportation of light merchandise, and of products requiring speed in their transit to market, the railroad possesses decided advantages over any canal. But could any railroad, however well constructed, have performed the Herculean labors of the Erie canal, for the last thirty years? The Reading railroad, in 1849, carried 1,098,000 tons of coal to market. This road, ninety-three miles in length, has a double track, and, with its equipments and all expenses, cost eleven millions of dollars.

The products coming to tide water on the Erie canal in 1850, were equal to 1,554,000 tons. The railroads which are engaged in the transportation of passengers, and in the conveyance to market of the products of the country generally, do not carry in twelve months more than one-ninth part of the tonnage which passes on the Erie canal in seven months. On the Albany and West Stockbridge road, the transportation, exclusive of passengers, in 1850, was 170,588 tons. This road is connected with the Massachusetts "Western" railroad, and forms a part of the great line from Albany to Boston. The transportation of the Erie railroad, exclusive of passengers, for nine months ending on the 30th of September, 1850, was equal to 131,000 tons. The tonnage passing on the Erie canal in seven months of 1850, was more than four and a

half times as much as that on the Erie and Boston railroads united.

The State engineer, in a note on page 14, assembly document No. 45 of 1851, says:—"It would require six double-track railroads, having other traffic from which to earn dividends, to perform the business of the Erie canal during the year 1850."

Although a railroad, in usefulness and economy, could not have supplied the place of the Erie canal, yet it is an essential auxiliary to it, on such a great business thoroughfare as that along the central line of New York. Notwithstanding the utility, if not necessity, of such a railroad, we have seen that, after the Mohawk road was fully tested, a proposition to construct a continuous road from Schenectady to Buffalo, in 1832, was rejected by a strong vote in the Senate, and found very little favor in the other House.

Private and local interests, however, may have influenced the legislation of 1832, for it was believed that it would be hostile to the interests of those engaged in the transportation business on the canal; and there was a feeling in the villages along the old post road—which by the construction of the Erie canal was left at a considerable distance from the great thoroughfare of business—that if one great company was organized, the road might follow the natural grade along the route of the canal, looking more to the accumulation of revenue by a route which would secure the western business, than to the accommodation of the interior villages. Whatever may be said at this day in regard to the necessity of adopting the easiest grade and the shortest line, it could not be expected in 1833 to 1836, that the capital and the influence of Auburn, Geneva, Canandaigua, and the other villages along the ancient thoroughfare, would be used for the construction of a railroad to make the canal line more completely the business thoroughfare of the State than it then was. Thus it is seen by the legislative history of railroad applications, as heretofore given, that, although there were applications for the whole line from Albany to Buffalo, and for separate portions of the route, in 1831-2, and each year after, the charters were doled out as follows: The Tonawanda railroad, from Rochester to Attica, was chartered in 1832; the Utica and Schenectady in 1833; the Auburn and Syracuse in 1834; the Syracuse and Utica in 1836, and the Auburn and Rochester, and Attica and Buffalo, the same year. The entire route from Schenectady to Buffalo, which was denied to one company in 1832, was covered by charters to six separate companies in the four subsequent years; and, with the Mohawk and Hudson, chartered in 1836, dividing the line among seven companies, from the Hudson river to Lake Erie.

CONSTRUCTION OF RAILROADS BY INDIVIDUAL ASSOCIATIONS.

Since 1830, associations of individuals have expended in the construction and equipment of railroads within the limits of New York, a greater sum than the State government has applied to the construction of canals from 1817 to the present time, a period of thirty-four years; and the aggregate debt of the railroad companies is greater than the debt of the State incurred for internal improvements. Whilst the canals constructed by the State extend less than eight hundred miles, the railroads at the close of the present year will exceed sixteen hundred miles in extent. Within the last five or six years, two thousand miles of Telegraph Lines, and more than two thousand miles of plank roads, have also been constructed and put in operation by the enterprise and effort of associations of individuals, within the limits of New York.

When the success which followed the construction of the Erie and Champlain canals brought to the capital petitions from various sections of the State, soliciting the aid of the treasury to extend similar advantages to the petitioners, it became a grave question how far the State government could embark in these enterprises, without embarrassing the treasury or exposing the people to taxation—By the act of 1817, ample provision was made for protecting the credit of the State, and the taxpayers, against any liability growing out of expenditures for connecting the great western and northern lakes with the Atlantic Ocean. But this financial system, by the law of 1817, and the constitution of 1821, was limited to these canals, and the revenues

could not be applied to new undertakings. Those who apprehended that the treasury might be overwhelmed with these claims for aid, were desirous of relieving the State finances from a portion of the burden to which they were exposed, by enlisting the means and efforts of individuals and associations in extending the system of internal improvements.

In regard to the construction and management of railroads by the State, there were other objections besides those of a financial character. The transportation of passengers and products was necessarily connected with the ownership of the road. If the State embarked in this business, its agents must be greatly multiplied, and a wide field of operations would be opened, extremely injurious, if not corrupting, in their effects upon the action of the government; and all this without performing the transportation business of the country as well as it would be done by individuals and associations.

The Delaware and Hudson canal company, which was chartered before the Erie canal was completed, was organized for the purpose of bringing coal to the Hudson river. This company expended \$800,000 before making application for the aid of the State. The State was then solicited to become a stockholder in the company, or to loan its credit. The credit of the State was loaned to the company, secured by a mortgage on all its property. In this way, whilst the most efficient aid was given to the work, the State government avoided a connection, even as a stockholder, in the transportation and sale of coal. The loan of \$800,000 to this company was amply secured, and, after paying the interest for twenty years, the company reimbursed the principal in 1850.

The State, though often solicited to do so, has in no one case constructed a railroad, or taken stock in one; but, following the precedent established in the case of the Delaware and Hudson canal company, many of them were aided by loans of State stock; and if the same care had been observed in making subsequent loans to railroad corporations, and the same good faith had been preserved by the companies, the aid of the State probably would not have been cut off from them by the new constitution. But the losses to the State on the account of these loans of its credit, amounting in the aggregate to seven and a quarter millions of dollars, caused such general repugnance to this use and abuse of the public credit, that the convention of 1846, with entire unanimity, ordained, (sec. 9, art. 7.) that "the credit of the State shall not, in any manner, be given or loaned to, or in aid of any individual, association, or corporation."

INTERNAL IMPROVEMENTS BY THE GENERAL GOVERNMENT.

Twenty years ago the people and government of the United States were deeply agitated by a conflict of opinion between the advocates of a general system of internal improvements by the United States government, and the opponents of that system. Mr. Adams believed that the Congress of the United States had a constitutional right to construct roads and canals through the several States, General Jackson not concurring with these views, rejected a bill which had passed both houses of Congress, making an appropriation to the Maysville road in Kentucky.*

The construction of works of internal improvement by the several State governments, and the wonderful progress made within a few years in the construction of railroads by associations of individuals, has relieved the general government from applications for the construction of roads and canals within the limits of the several States. It has done more than this: in Maryland, Pennsylvania, Ohio, New York, and Massachusetts, an expenditure of three hundred millions of dollars by the State governments and by individuals in canals and railroads, has raised up a powerful rival interest in those States to any interference on the part of the general government, for the promotion of internal improvements within their limits.

In looking back on the forty-five years struggle of the general government in getting a wagon road

* An abuse of these privileges inclined the canal board to exact toll on horse-feed, and all articles for the use of the boat.

* The Maysville veto does not extend to the improvement of harbors on the lakes—its objections are confined to the construction of roads and canals within the limits of the States.

from the seat of government to the Mississippi, and comparing this achievement with the construction and equipment of TEN THOUSAND MILES of railroad, accomplished by individual enterprise within the last twenty years—the conclusion seems irresistible, that the machinery of the general government is not necessary to carry on a general system of internal improvements through the several States.—Instances are very rare in which State lines present obstacles to the progress of a railroad, or are permitted in any way to interfere with a system of improvement for the advancement of the "general welfare."

STATISTICS OF THE INTERNAL TRADE OF THE COUNTRY.

Some of the railroads report the tons of produce transported. This ought to be exacted of all of them; and in order to make these returns useful, they should correspond with the tonnage reports of the canal department. In the canal reports the classification of the products corresponds with that adopted in the treasury department in the annual statement of the register's office, of the "commerce and navigation of the United States."

If statements similar to those which have been furnished by the canal department for the last fifteen years, respecting the trade and tonnage of the canals of New York, were required by the Legislature of each State, from all canals and railroads, whether owned by the States or by corporations, it would furnish a very interesting exhibit of the internal trade of the country. In this way a vast amount of statistical information might be obtained in an authentic form, without much trouble or expense.

REPORTS AS TO REVENUE AND PRODUCTS TRANSPORTED.

The canal department for many years has furnished for publication weekly statements of the amount of tolls received, and the quantity of products transported on the State canals. The railroad companies ought to be required by law to furnish similar statements for publications, of the products transported, and also of the sums received for freight and passengers. This information would afford a general view of the movement of the various products of the country, alike useful to fair business men and the public generally. So large a portion of the community is interested in railroads, either as stockholders or owners of their bonds, that a monthly, if not a weekly publication of the earnings of each road is due to those immediately interested in them, and business men generally require and are entitled to this information, in regard to a species of property which is changing hands daily, and mingles more or less in the business operations of the whole community.

Columbus and Xenia, and Columbus and Cleveland Depot Grounds.

The improvements that have already taken place upon these grounds, must be gratifying to every citizen of Columbus. Last March there was not a single building erected thereon. Now, there are seven structures for various purposes. First—the Depot house of the Columbus and Cleveland and the Columbus and Xenia railroads. This building is one of the handsomest Depot houses in the West. Its dimensions are—length 200 feet, breadth 50 feet.

The freight house of the Columbus and Xenia company, is a very neat structure, 150 feet in length by 40 in width. A better idea of the amount of goods shipped to this point can be obtained by taking a peep into this freight Depot, than by any other means. It is always full, and draymen are continually hauling goods and merchandise away.

The next building that met our observation, was the Machine and Blacksmith shops of the Columbus and Xenia company. In both of these shops there are sixty-one workmen constantly employed in repairing dilapidated Locomotives. At present there are but two engines on the stocks—the "Xenia" and the "Patterson." The length of the Machine shop is 120 feet, by 64 feet and 6 inches in breadth.

The next building of importance is the Engine house of the Columbus and Cleveland company. This is a semi-circular building, very neat in its

construction, and capable of sheltering sixteen "iron horses." Adjoining the Engine house is the Wood house, belonging to the same company.—This building is 204 feet long.

Last, but not least, is the eating house of Chas. G. Dresher. During the past and present seasons, Charley has bestowed a vast amount of labor upon this house, and notwithstanding its exterior does not present the most imposing, or inviting appearance in the world, yet the internal arrangements are perfect. At a very great cost, gas has been introduced into this building, and the proprietor has spared no labor or expense to make it what it truly is, one of the best railroad eating establishments in the country.—*Ohio Statesman.*

Rates of Postage.

Newspaper rates, per quarter, when sent from office of publication to bona fide subscribers.

	For any distance not over 50 miles.	Over 50 and not exceeding 300 miles.	Over 300 & not exceeding 1000.	Over 1000 and not exceeding 2000.	Over 2000 and not exceeding 4000.	Over 4000 miles.
Daily	25	50	75	100	125	150
Tri weekly . . .	15	30	45	60	75	90
Semi-weekly . .	10	20	30	40	50	60
Weekly	5	10	15	20	25	30
Semi-monthly . .	2½	5	7½	10	12½	15
Monthly	1½	2½	3½	5	6½	7½

Remarks referring to the above table.—From and after the 30th of June, 1851, for each newspaper, not exceeding three ounces in weight, the annexed rates per quarter are to be paid quarterly in advance. These rates only apply where the paper is sent from the office of publication to actual and bona fide subscribers.

Directions referring to the above table.—1st, Weekly papers, only, when sent as above stated, are to be delivered free in the county where they are published; and this although conveyed in the mail over 50 miles.

2d. Newspapers containing not over 300 square inches are to be charged one-quarter the above rates.

3d. Publishers of newspapers are allowed to exchange free of postage one copy of each number only; and this privilege extends to papers published in Canada.

4th. The weight of newspapers must be taken or determined when they are in a dry state.

5th. Postmasters are not entitled to receive newspapers free of postage under the franking privilege.

6th. Payment in advance does not entitle the party paying any deduction from the above rates.

Transient papers must be prepaid or they will not be sent. The rates are given below for the Courier, weighing under two ounces:—

Under 500 miles	2 cents.
Over 500, and not over 1500	4 "
" 1500, " " 2500	6 "
" 2500, " " 3500	8 "
" 3500	10 "

Iowa.

Potosi and Dodgeville Railroad.—A public meeting was held at Potosi on the 11th ult. for the purpose of facilitating an early commencement of the work. Dubuque was well represented in the persons of Messrs. L. H. Langworthy and S. D. Eaton; the latter being Chief Engineer of the Dubuque and Keokuk railroad North, and the former, one of the agents of the same company.

Dubuque has a direct interest in the early completion of the road to Potosi, as it brings near home another line of communication with the eastern markets, by way of the great lakes. Indeed, we are not sure but that the Potosi road, connecting as it will with the main road to Milwaukee, will be the most profitable for Dubuque.

One thing is very certain, and that is, a through road to Milwaukee, connecting there with the lake communication eastward, would be the best, because the cheapest, for the transportation of freight.

Nor would there be much difference in time between this route and a continuous line of railroad; so if any thing were gained in cheap transportation, it would not be lost in time.—*Dubuque Herald.*

Compound Rail.

The Great Western railroad company of Canada West, have decided to adopt the compound rail, [patented by John F. Winslow, Esq., of Troy,] for their entire line of 228 miles; and the order for the iron has gone to England.—*N. Y. Tribune.*

This compound rail breaks the joint, does away with the use of cast iron chairs for the ends of the rails to rest on, and makes as it were one continuous rail the full length of the road, allowing with safety the greatest speed in travelling, without that incessant clack, clack, and jar experienced so disagreeably by nervous persons when going rapidly over it.

This rail has been adopted, and is now used on the New York and Erie, Hudson River, Utica and Schenectady railroads. The Madison company have purchased two hundred tons, a portion of which is now at Cincinnati, to relay the road from this to Vernon. The iron in this part of the road is light and considerably worn, and as this road is to transport to the Ohio the rich products of the Wabash and Upper Mississippi valleys, every improvement is introduced by its enterprising managers to make it equal to the task.—*Madison Courier.*

James River and Kanawha Canal.

This canal has just been opened to Buchanan 196 miles from Richmond. The Lynchburgh Virginian, in giving an account of the celebration, appends the following description of the works from Lynchburgh to Buchanan.

About one half of the distance only is independent Canal—the other half being slack water navigation. The towing path, which is either a bench cut out of the cliff, or a substantial embankment, is raised very high, and protected by a rip rap facing from the top to the bottom of the slope.

The head walls of the Guard Locks and wing walls and abutments of the Dams, are all carried up above the level of the highest fresh ever known. They are generally of rock dressed masonry.—Every structure of importance rests upon solid rock foundation. At the mouth of Cedar Creek, [the stream which is spanned, a mile or two up, by the Natural Bridge,] an Aqueduct of 50 feet span, on the suspension principle has been constructed. It was the original intention, to throw an arch of masonry across the stream, but, upon excavating the pit, for one of the abutments, to the depth of 17 feet below the bed of the creek, without obtaining a suitable foundation, the plan was changed to a wooden trunk, suspended from ten wire cables.—The lockage, from Lynchburgh to North river, amounts to 180 feet, from North river to Buchanan, 107 feet, total 287 feet. This is overcome by 17 lifts, below North river, and 9 above, making 26 in all, besides 11 Guard Locks.

Below North river there are 4 wooden and 3 stone dams, and above 4, all of wood, on account of the difficulty of procuring stone, and the cheapness of timber. Judith Dam, built of stone, 419 feet long, raises the water 20 feet, and is 33 feet high. Pedlar, Bald Eagle, and Big Island Dams are of stone also, and raise water from 12 to 16 feet each—the shortest, 350 feet, the longest 789 feet.

The Locks below North river are of various descriptions—cut stone, hammered, rubble and composite, according to the facilities afforded by the vicinity, with a proper regard to durability. The Locks above North river, are all of cut stone, and of most admirable workmanship. The Dams, as we have already stated, are of wood. They are as follows:

Quarry Falls Dam.	15 feet high	350 long
Varney's Falls "	18 "	430 "
Indian Rock "	19 "	600 "
Wasp Rock "	23 "	500 "

At Indian Rock. Wasp Rock, and the Balcony Rock, high bluffs have been cut down, in some places to the extent of 50 to 80 feet. We are pretty confident, that on no other improvement in the

United States have greater difficulties been successfully encountered.

Alabama.

Alabama and Tennessee River Railroad Company.—A convention of the stockholders of this company met at Talladega, on the 18th and 19th inst. It was well attended by stockholders East of the Coosa. The greatest harmony, we understand, prevailed among the members of the convention.

J. W. Lapsley, Esq., was re-elected President, and the old board of directors, Col. Weaver, Col. Goldsby, Col. Wm. Curry, Major W. Reynolds, H. H. Allen, Esq., Wm. Plattenburg, Esq., Edmund King, Esq., and Gen. Conoley, were also re-elected. No abler President or board could, we think, have been selected. We are much pleased at the result of the election, and we believe such are the sentiments of all those interested in the road. From the great interest Mr. Lapsley has taken in the success of the road from its inception to the present day—from the rapidity with which it has been pushed forward, under his able direction, to a speedy termination, every one looked for his re-election—as they will hereafter. In connection with this we would remark that application will be made to the Legislature to amend the charter, so that two additional directors can be added to the board, one from Mobile, the other from Benton county.

A report of the President and directors was read, showing the financial and general condition of the company. We will publish it in our next.

An able and highly interesting report was read before the convention by Lewis Troost, Esq., chief engineer. Of course it could not be otherwise than able, coming from the pen of Mr. Troost, and we have no doubt it is pregnant with interest from the subject on which it treats. It gave such satisfaction to the convention, that a large edition was ordered to be published, accompanied by a map.—It will appear shortly.

The best spirit prevails amongst the stockholders generally, especially those East of the Coosa river. The work of graduation, East of the Coosa river, is progressing rapidly, favorable proposals having been made for the graduation of the whole of the line East of that river, as well as for supplying most of the timbers. Favorable proposals have also been made for a graduation of a portion of the work between Montevallo and the Coosa river, most of it to be taken in stock.

On the whole we must congratulate all those interested in the success of this great work, on the very favorable prospects of its rapid completion.—*Selma Reporter.*

Indiana.

New Albany Railroad.—This important road, designed to connect the Ohio river with Lake Michigan, is steadily progressing.

At our request, Mr. Brooks, the President of the road, furnished us with the following facts:

The cars are regularly running to Orleans, fifty-seven miles, and doing a good business. About 8 miles more of the road will be finished as soon as the river rises to let the iron up. The road from New Albany to Michigan City will be 285 miles long; and with the branch from Gosport to Indianapolis, 45 miles, will make in all 330 miles. Of the main stem of the road from New Albany to Michigan City, means are now provided to finish and equip that part of the road between New Albany and Gosport, 113 miles, and between Crawfordsville and Lafayette, 26 miles, making in all 139 miles, or nearly one-half of this whole distance, and enough to grade and prepare for the iron the balance of the road with one hundred thousand dollars over towards its equipments.

That part of the road between Lafayette and Michigan City will be graded ready for the iron next year, 31 miles from Michigan City to the Kankakee river having been let last month. The balance of that part of the line will be let as soon as the engineers complete the location—say next month.

That part of the line between Gosport and Crawfordsville, 55 miles, will be located this winter, ready for letting in the spring; so that by next April the entire line between the Ohio river and the lakes will be under contract, and we only wait

for the balance of the stock on the line between Gosport and Indianapolis to be taken to justify us in putting that part under contract in the spring.

With the stock already subscribed along the line we can get that done if we can get \$50,000 taken at Indianapolis. Of the importance of this work or probable value of the stock it is unnecessary for me to tell you.—*Indiana State Jour.*

Virginia.

The Central Railroad.—We have had occasion of late to congratulate our readers upon the proof of activity and *go aheadiveness* which the Central railroad is furnishing in its steady progress westward. Without disparagement to any other improvement of Virginia, we cannot but consider this as unsurpassed in importance by any railroad in any State of the Union. We are perfectly well satisfied that, if the tax-payers of Richmond could visit the valley of Virginia and western Virginia themselves, they would declare with one voice in favor of pushing this railroad at once to the Ohio, and would give it their own aid with cheerfulness and unanimity. We referred a few days since to the fact that the Cincinnati and St. Louis railroad has been fully determined upon, and that, in the course of five years, those two cities will be connected by iron bonds. We need not build any air castles, if such they can be considered, as to the probability that St. Louis will yet be connected by railroad with San Francisco. We regard that as more than probable; but, placing that entirely out of the question, we have a region penetrated by this Cincinnati and St. Louis road of incalculable fertility and wealth. Cincinnati, thus united with St. Louis, is anxious to connect herself with the Virginia Central railroad on the banks of the Ohio. Kentucky is solicitous to rival Cincinnati in this purpose, by connecting her own projected line of railway with this improvement, by the construction of the Marysville and Big Sandy road, an important link in her chain of railroad communication from Marysville to Louisville and thence to Nashville. Here, then, Virginia has before her, by two good routes, the command of the whole west, if she will push forward the Central railroad and the James river canal to their completion. Richmond may with perfect ease be made the depot for the vast produce of the West, intended for shipment to foreign ports. All we need are facilities of cheap and speedy transportation. Richmond is nearer the great valley of the Ohio than any other port of shipment in the Union. This may be seen at a glance from the following estimate of distances. In a direct line, the distance.

From Cincinnati to New York	is 535 miles.
" " Baltimore	400 "
" " Richmond	360 "

By practicable railroad routes, the distance is as follows:

Cincinnati to N. York, via Baltimore	780 miles.
" " " via Buffalo	900 "
" " " via Dunkirk	850 "
" Baltimore, via Wheeling	700 "
" Richmond, via Chillicothe	"
and Guyandotte,	596 "
" New Orleans, via Ohio	"
and Mississippi rivers,	1567 "

It will thus be seen that, calculating from Cincinnati as a central point, Richmond is the nearest, and with a railroad extended to the Ohio, would be the *cheapest* and most accessible shipping for the enormous and incalculable trade of the west, in the United States. Here would the rich stores of the whole fertile region from the Ohio to the Rocky Mountains be unburthened. Is not such a prospect sufficient to encourage our citizens to the importance of pushing on the Central railroad at once to the banks of the Ohio?

Since writing the above, we have found the following cheering intelligence in the Staunton Spectator:

Good News.—We are informed by T. C. Ruggles, Esq., engineer of the Central railroad, that the laborers at this extremity of the Blue Ridge Tunnel have at last got through the hard rocks, which has heretofore retarded their progress, and got into sand stone. This is good news.—*Richmond Republican.*

Hempfield Railroad.

On the 18th ult., the Court of Common Pleas of this county, examined the election returns in reference to the county subscription to the Hempfield railroad, in pursuance of the late act of the Legislature, and made the decree that the County Commissioners execute bonds in the name of the county for four thousand shares of the capital stock of said road.

J. W. F. White, Esq., on behalf of those who are opposed to the county subscription, gave notice of their intention to resist the issuing of the bonds by the Commissioners, and to contest the validity and constitutionality of the act, and asked permission, which was granted by the Court, to file, during the present term, any exceptions or remonstrance to the proceedings, if they should desire to do so.

We understand that eminent counsel, of the Pittsburg bar, have been employed with Mr. White, to carry the question to the Supreme Court, and that they have expressed a decided opinion that the county subscription is unconstitutional.

The question is now in Pennsylvania, and we are not aware that it has ever been brought before the Supreme Court of our State. But in Kentucky, it has been decided that such acts are unconstitutional. At this time, there are probably five millions of dollars invested in railroads by different cities and counties of our State. If our subscription should be declared unconstitutional, it will be a virtual repudiation of those bonds. Will the Supreme Court make such a decision? We trust it will not—indeed, we have no fears that it will.

But the opposers of our subscription have an undoubted right to raise the question, and have it settled, and whatever the decision may be, it is the duty of all to submit cheerfully.—*Washington Republican.*

In the celebrated case of *Rose vs. the Inhabitants of Bridgeport*, the right of a town to take stock in a railroad, in its corporate capacity, was fully sustained. Similar decisions have been made in Maine, by Judge Ware, in reference to the subscription made by the town of Gardiner to the Kennebec and Portland railroad.

As a great number of our roads are built by means furnished by corporate subscriptions, it is of the highest importance that the question of the right to make them should be settled at once. For ourselves, we have no doubt they would be sustained.

North Carolina Railroad.

For the information of all interested, we extract the following account of the progress of this great work from the Greensboro' Patriot:—

It is indeed gratifying to note the progress of work on the railroad contracts in this vicinity. On every section in the county, except two or three, there are more or less hands employed.

Fields, Shelly & Co. have been at work for some time past, and we learn have their contract in a state of forwardness. We are not informed how many hands they have employed.

C. P. Mendenhall & Co., whose contract extends over six or seven sections (six miles in length,) have nearly thirty hands employed, and the number will be increased as fast as carts, etc. are prepared to facilitate the operations. This company have over three miles grubbed, and are now making headway in grading, and quarrying and hauling rock for culverts.

Messrs. Cole and Mebane, whose contract embraces two sections immediately west of town, are going ahead with an active set of hands, and will soon have their grubbing completed.

On their contract east of this place,—fourteen sections, from the Alamance line to a point south of Gov. Morehead's residence,—taken by Col. McLean and company, there are about seventy hands at work, at five different points. Some twenty-five hands are employed within the town corporation and vicinity, and have been principally at work, for the last two or three weeks, upon the culverts. The masonry at the culverts is done in

a most substantial manner; and is, we understand entirely approved by the Engineer.

The grubbing is finished some four miles east of town, and the grading will henceforth go steadily forward to completion. J. Gibson, Esq., a member of this company, has been engaged in grading for some time on the 1st section, near the county line. At several points between, grubbing and rock work, and we believe also grading, are going on. The number of hands on the whole of the McLean contract is increasing daily, and constantly accelerating progress is contemplated until the contract shall be finished.

We understand, however, that in Alamance, and in several points in Davidson, Rowan, and still further west, the "work goes bravely on."

American Railroad Journal.

Saturday, December 6, 1851.

Kentucky.

Covington and Lexington Railroad.—We have frequently taken occasion to speak of Kentucky, as an interesting field in the cause of internal improvements, and as the theatre of several important railroad enterprises. This State is somewhat behind her neighbors in point of time, but her people are making up for the loss by the energy with which they are pushing their works now in progress. Every part of the State is fully aroused, and each portion is now engaged upon its appropriate line. The whole surface of the State will soon become as checked over by routes of railroad as is that of Ohio and Indiana.

Kentucky occupies the middle ground between the north and the south, and, extending from the Mississippi to the mountainous region of Virginia, must, for a long series of years, contain all the great lines of railroad connecting the north and the south, west of the Allegheny Mountains. The extension of all the roads in the States of Ohio, Indiana and Illinois, south, must pass through her territory. Her lines, therefore, in addition to their local objects, (with which view alone they are built,) at once connect themselves with the railroad system of the country, and are regarded as necessary in order to bring together, and make into a whole, the widely-extended net work which is spreading over the north on the one hand, and the south on the other. The people of the States just named feel almost as much interested in the roads of Kentucky as they do in their own; while in the south, the States of South Carolina, Georgia, Alabama and Mississippi, which are now pushing their lines north, look upon those of Kentucky as equally necessary to complete their connections, and give their own roads their full efficiency and usefulness.

The project of building a continuous line of railroad from Charleston to Cincinnati, under the direction of one company, was once the favorite idea in South Carolina. This undertaking was too great for the time, and of course failed. Since that period, the people on the route of the proposed road have not been idle. They have been quietly, but busily engaged, upon the various links which composed the great line, till at last, we find that without concert, and in comparative ignorance almost of what the different divisions have been doing, only about 180 miles out of some 900, the entire distance, remain to be placed under contract, and for which means are not already provided.—The grand project of Charleston and Cincinnati railroad is on the eve of completion, and a few years only will elapse before the cars will run from one city to the other.

The northern link in this great line is the road from Covington, on the Ohio river, opposite Cincinnati, to Lexington. The projectors of this road, though looking forward to the connections of which we have spoken, base their reasons for building their road upon considerations of local travel and business alone. Cincinnati and its environs are the great centre of trade for Ohio, and a large portion of Kentucky. Lexington, the southern terminus of the road, is well known to be the centre of the garden of the State, which, for fertility of soil, and agricultural wealth, is unsurpassed by any portion of the Union. The mere statement of the connections to be formed by the Covington road, will give a better idea of the importance of the route than any data as to the amount of existing traffic. It will constitute an appropriate outlet for an extensive portion of Kentucky, and the channel through which the same territory will receive its supplies of foreign merchandise. These facts must convince every person that the road must be a *paying* one; and when we add to its local traffic, its through business, when the connections referred to shall be completed, the capacity of the route for business will hardly be surpassed by any in the country.

In addition to the proposed extension of this road towards Charleston, there can be no doubt that a branch will be carried in another direction, to Nashville, Tennessee, which is now becoming a conspicuous point in the southern railroad system.—This extension is already provided for as far as Danville, Kentucky, 37 miles from Lexington. The Danville and Lexington company is organized, with sufficient means, we understand, to complete their road. From Danville the extension to Nashville will probably be carried east of Muldro Ridge, and through Glasgow. This fact may induce the Louisville and Nashville company to adopt for its road a portion of the above line.

We learn that all the grading and bridging of the Covington road is now under contract, and that the work is being pushed forward with vigor. The company are now in possession of ample means to carry it forward with all the energy consistent with economy. Negotiations we understand are now in progress for the purchase of iron for the whole line, to be delivered next summer. It is the intention of the company to complete their road with all possible despatch. Their affairs are in able hands, and are managed with decided ability. The company have adopted a rule to make all their payments on the line in *cash*, where stock contracts cannot be made on equally favorable terms. They have let their work at the lowest prices, and are determined to lose nothing by exorbitant shaves on their securities. The success which has thus far attended their efforts, and the able manner in which their affairs have been conducted, entitle their project to the confidence of the public.

Stock and Money Market.

The condition of the money market continues to present the same features that we have noted for some weeks past. Money, though reasonably abundant in the ordinary business channels, is in active demand, and can only be had at high rates by railroad and other companies, that are borrowers, to carry out their enterprises. The heavy shipments of gold that are steadily going forward keeps the public mind in a constant state of apprehension; and though our receipts have exceeded the exportation, yet we have been so long accustomed to apprehend disastrous consequences from

the exportation of large amounts of the precious metals, it will take us some time to outgrow the habit, and look upon the shipment of our surplus coin in the same light that we do the exportation of corn and flour.

The above is one of the causes of the scarcity of money. Another is, that the demand is greater than the supply. We wish to invest faster than we produce. Scarcity from this reason may not indicate an unhealthy state of things, if our investments are well made; but it may bear heavily upon companies that are in a position requiring a large amount of money.

There is one fact which operates strongly in favor of our railroad companies, and that is, the strong confidence in the success of most of our roads as *paying* projects. This fact enables most of them to obtain money, at some rate, to carry forward their lines. We shall find that very few companies stop work from inability to raise the means to push ahead.

There has recently been an increased inquiry for first class securities. It is very difficult to give quotations, as the market value of nearly every security depends upon causes that have little to do with their intrinsic value. Bonds of new works range all the way from 75 to 90, though the average is nearer 80 than 90 cents on the dollar.

The rail market is dull, and contracts can be made upon exceedingly favorable terms.

The receipts of the Erie road for November are as follows:—

Passengers and Mail.....	\$129,480 06
Freight.....	169,940 34

Total.....	\$299,420 40
November, 1850.....	150,147 92

Increase..... \$149,272 48

The receipts of the New York and Harlem railroad company were:—

For November, 1851.....	\$50,727 62
Do. 1850.....	40,776 82

Increase, nearly 25 per ct..... \$9,950 80

The "London Economist," of November 1st, expresses some very sensible views in regard to the imports of gold dust and the shipments of coin, as a medium of exchange. It is well worth the time required to read it:—

The condition of the United States, in relation to the export of bullion, is now altogether different from that in which it stood prior to the discovery of California. Up to that time the precious metals were not produced to such an extent anywhere as fairly to be included in the products of the country. The precious metals, were, therefore, only imported for the ordinary uses for which they are required in every country. An adverse exchange and a drain of bullion, therefore, proved that a balance was due to other countries above what the current produce of the United States provided for. A temporary derangement of the monetary affairs of the Union, and all the consequent results of discredit followed as a necessary consequence. Now, the case is entirely different, nor need the same disastrous consequences, which have hitherto attended a high rate of exchange for a considerable period, and a drain of bullion be expected to follow. Gold, like cotton and tobacco, has become one of the natural productions of the United States, and, like cotton and tobacco, is the natural representative of a large portion of the imports from other countries. The demand for goods and produce of every description for the consumption of California, is chiefly supplied from the Eastern and Northern States. To supply this demand, the imports are considerably increased, as has been the case in the last two years. As gold is the only produce with which California can pay the other States of the Union for the goods which they supply, so it is likely to

be employed to pay foreign countries for the imports which are received from them. In short, gold has become as much a produce of the United States, of which there is always a surplus to export in exchange for the extra quantity of foreign goods imported, as cotton, corn, or tobacco, or as the precious metals have long been from Mexico. And, therefore, when it is mentioned in some of the latest American papers as a most alarming fact, that specie to an amount of no less than fifty millions of dollars has been exported during the last eighteen months, it is in reality the same in effect as if it were said that the same amount of cotton or wheat had been exported.

It is only saying, that of the gold which had been produced in California and sent to the other States during that period, amounting in value to upwards of £15,000,000, the value of £10,000,000 has been exported.

But then it is necessary to consider the effect which that export has upon the rate of exchange, in order to divest that symptom of the terror which, naturally, from past experience, attaches to it.—The large imports of gold from California far exceeding the ordinary demand of the United States, the value of that metal necessarily sinks until it reaches the rate at which it can be exported; and consequently the exchange rises to that rate—viz., any figure above 110—at which gold can be imported into this country without loss. So long, therefore, as there is a surplus of gold to be exported, the exchange must continue at such a rate as will admit of that operation.

For these reasons, we see no ground for the apprehensions so generally expressed at the high rate of exchange at New York, and the extensive shipments of bullion which have latterly taken place, and which, it appears, are likely to be resumed.—On the contrary, they only indicate the increased trade with Europe which has been created by the settlement of California, which has not only created a new market for our goods, but has also furnished a new product, so far as the United States are concerned, for the payment of their increased imports. So far from entertaining any apprehension on account of the export of bullion from the United States, as far as the trade of the coming year is concerned, we regard it rather as a reason why that trade should continue to increase as it has done of late years, in order to supply the new wants to which this new production of the United States is every day giving rise.

The Evening Journal gives the annexed statement of the quantity of flour, wheat, corn and barley, left at tide water during the 4th week in November in the years 1850 and 1851, as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1850...	301,500	490,215	35,419	93,066
1851...	118,162	111,388	141,357	111,348

Dec....183,338 378,827 Inc. 105,138 18,282

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 30th Nov., inclusive, during the years 1850 and 1851, is as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1850...	3,170,272	3,556,551	3,219,476	1,723,914
1851...	3,322,747	3,111,331	7,658,472	1,798,129

Inc....152,475 de.445,220 In. 4,438,996 74,225

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 30th Nov., inclusive, during the years 1849 and 1851, is as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1849....	3,191,864	2,667,802	5,053,599	1,390,737
1851....	3,322,747	3,111,331	7,657,472	1,798,139

Increase. 130,883 443,529 2,604,913 407,402

By reducing the wheat to flour, the quantity of the latter left at tide water this year, compared with the corresponding period of last year, shows an increase of 63,429 bbls. of flour.

Canal Tolls.—The amount of tolls received at the Canal Collector's office at Albany during the season of navigation in 1851, was....\$358,457 59
Same period in 1850.....312,653 68

Increase.....45,804 01

The aggregate amounts received for tolls from the commencement of navigation to and including the 22d ult., and for the third week in November for the following years were:

	3d week Nov.	To 22d Nov.
1851.....	\$119,649	\$3,291,488
1850.....	171,098	3,198,796
1849.....	154,406	3,196,173
1848.....	120,683	3,218,175
1847.....	96,274	3,610,196
1846.....	107,272	2,722,760
1845.....	110,401	2,620,533

New Haven and New York Railroad.—The receipts of this road for November are as follows:

Passengers.....	\$14,874 59
Commutation.....	411 91
Freight.....	7,500 00

Total.....52,786 50

Paid Harlem road for 42,720 passengers 3,804 23

Net receipts.....48,982 27

November, 1850.....43,859 92

Increase.....\$5,122 35

Railway Share & Stock List;

CORRECTED WEEKLY FOR THE

AMERICAN RAILROAD JOURNAL.

NEW YORK DECEMBER 6, 1851.

GOVERNMENT AND STATE SECURITIES.

U. S. 5's, 1853.....	101½
U. S. 6's, 1856.....	103½
U. S. 6's, 1862.....	110½
U. S. 6's, 1862—coupon.....	114½
U. S. 6's, 1867.....	115
U. S. 6's, 1868.....	115
U. S. 6's, 1868—coupon.....	122½
Land Warrants.....	140a145
Arkansas 6's.....	52a53
Alabama 5's.....	91a92
Indiana 5's.....	85
Illinois 6's, 1870.....	65a68
Kentucky 6's, 1871.....	104a106
Massachusetts sterling 5's.....	105a106
Massachusetts 5's, 1859.....	100½
Maine 6's, 1855.....	103
Maryland 6's.....	102½
Michigan.....	—
Mississippi.....	—
New York 6's, 1855.....	103½
Ohio 6's, 1860.....	109
Pennsylvania 5's.....	91

RAILROAD BONDS.

Atlantic and St. Lawrence, 6 per cent.....	85
Baltimore and Ohio, 1867.....	94½
Boston and Providence 6's, 1855.....	101
Boston and Worcester 6's, 1855, convertible.....	107½
Bost., Concord and Mont. 6's, 1860, mortgage.....	87½
Cheshire 6's, 1860.....	91½
Connecticut River 6's, convertible.....	89
Erie 7's, 1859.....	101
Erie 7's, 1868.....	106
Erie income 7's.....	94½
Hudson River 7's, 1853.....	101½
Michigan Central, convertible, 8's, 1856.....	104½
New York and New Haven.....	100½
Norwich and Worcester, mortgage, 1860.....	80a85
Old Colony, 1854.....	97½
Ogdensburg 7's, 1859.....	93
Portsmouth and Concord.....	80a85
Passumpsic 6's, 1859.....	94½
Rutland 7's, 1863.....	90
Reading mortgage, 1860.....	78
" " 1870.....	70
Sullivan, mortgage 6's, 1855.....	67
Vermont Central 6's, 1852.....	90
" " 6's, 1856.....	85
Vermont and Massachusetts 6's, 1855.....	84

RAILROAD STOCKS.

[CORRECTED FOR WEDNESDAY OF EACH WEEK.]

	Nov. 26.	Dec. 3.
Albany and Schenectady.....	89½	95
Atlantic and St. Lawrence.....	60a65	—
Androscoggin and Kennebec.....	30a35	—
Boston and Maine.....	106½	105½
Boston and Lowell.....	108	109
Boston and Worcester.....	103½	103½
Boston and Providence.....	89½	89½
Bost., Concord and Montreal.....	77	35½
Baltimore and Ohio.....	67½	—
Baltimore and Susquehanna.....	34	—
Cheshire.....	47	45
Cleveland and Columbus.....	—	—
Columbus and Xenia.....	—	—
Camden and Amboy.....	—	—
Connecticut River.....	60	—
Delaware and Hudson (canal).....	108½	100
Eastern.....	99½	99½
Erie.....	88	87½
Fall River.....	97½	94
Fitchburgh.....	110½	119½
Georgia.....	—	—
Georgia Central.....	—	—
Harlem.....	67	67½
Hartford and New Haven.....	122	—
Housatonic (preferred).....	—	—
Hudson River.....	70	70
Kennebec and Portland.....	50a55	—
Little Miami.....	—	—
Long Island.....	15	16½
Mad River.....	—	—
Madison and Indianapolis.....	90	93
Michigan Central.....	105	108½
Montgomery and West Point.....	—	—
Michigan Southern.....	—	—
Manchester and Lawrence.....	70	—
Morris (canal).....	14½	14½
New York and New Haven.....	108½	108½
New Jersey.....	—	130
Northern.....	68½	68
Nashua and Lowell.....	104½	—
New Bedford and Taunton.....	108	—
Norwich and Worcester.....	57	55
Norfolk County.....	14	15
Ogdensburg.....	30	29½
Old Colony.....	66	65
Passumpsic.....	70½	72
Pennsylvania.....	—	—
Pittsfield and North Adams.....	95	—
Philadelphia, Wilm'gton & Balt.....	28½	28½
Petersburg.....	—	—
Richmond and Fredericksburg.....	—	—
Richmond and Petersburg.....	—	—
Reading.....	58½	60
Rochester and Syracuse.....	110	111
Rutland.....	40	43½
Stonington.....	51½	44
South Carolina.....	—	—
Syracuse and Utica.....	123½	—
Sullivan.....	15a20	—
Taunton Branch.....	108	110
Troy and Greenbush.....	90	—
Tonawanda.....	—	—
Utica and Schenectady.....	127½	127½
Vermont and Canada.....	97	99½
Vermont Central.....	26	26½
Vermont and Massachusetts.....	27½	27½
Virginia Central.....	—	—
Western.....	103½	103½
Wilmington and Raleigh.....	56	—
York and Cumberland (Pa.).....	19½	—

Maine.

Kennebec and Portland Railroad.—The Gardiner Transcript announces that the track of the Kennebec and Portland railroad is now laid to the depot in that city; and arrangements have been made to commence running from thence regularly on and after last Monday. The work of laying the rails has been commenced in Augusta, and is rapidly progressing all along the line between Gardiner and Augusta. The depot buildings at Augusta are also going on rapidly. On the railroad from Gardiner to Augusta, the rails are to be laid on longitudinal timbers, the same as from Bath to North Yarmouth. From Gardiner to Brunswick, and from North Yarmouth to Portland, the rails are laid on transverse sleepers. The longitudinal timbers make the easiest riding road.

The Michigan Central, Ogdensburg, and Canada Railroad Connection with Boston.

New York city has an especial interest to prevent the Canada trade from being diverted to Boston. The St. Lawrence and Atlantic route has already secured the Montreal trade, and with much of the business of the eastern portion of Canada West. Boston, again, bids high for a preference over New York, by means of the Ogdensburg road, to which there has already been diverted from the Central New York railroad and the Erie canal a large amount of freight and passenger traffic that would otherwise have found its way to this city.—But these results are comparatively of trivial moment with those which must flow from the connection which Michigan, Canada West, and Boston are about to consummate. Let but the Great Western (Canada) line of railway, now in course of construction from Windsor, opposite Detroit, to Hamilton, on Lake Ontario, be connected with the Ogdensburg road leading to Boston, by means of fast sailing lines of steamers on the lake, and a line of travel then becomes established that will secure to Boston not only the trade of the whole of Canada, west of Lake Ontario, (a rich and prosperous peninsula country, which contains at least ten million acres of land of unsurpassed productiveness and already numbers nearly half a million inhabitants;) but such direct route will offer no common inducements for the trade of Michigan, Wisconsin and other Western States to follow in the same direction.

The threatened diversion of these more remote, but important tributaries of New York's greatness, as a commercial city, needs but to be stated to create a well grounded alarm. It is plain that New York must not be content to hold her own, merely, against her powerful rival. To maintain her supremacy, there must be corresponding exertion.—Should she even remain stationary, retaining her present amount of business from the sources indicated, the increase of the productiveness of these growing regions of country, if diverted from her, would alone, in a few years, suffice to build up, at her expense, her formidable rival, to eclipse her already coveted pre-eminence as the chief emporium of American commerce.

The demonstration lately made by Boston upon the completion of her new lines of railway communication, in order to attract the Canada trade, is of too significant a character to be passed by unnoticed. However lightly we may affect to think of the means resorted to, they have exerted a powerful influence in making known to Canadians the facilities which Boston possesses for the transaction of business with Canada, the cheapness and directness of her lines of travel to the Atlantic board, and her speedy and direct communications with the ports of Europe.

Can our citizens look upon these things as of no moment to their interests? Does not daily experience demonstrate how greatly the channels of commerce are affected by new lines of communication? Does it not also show us how the stupendous invention of modern art—the iron way—may be made to open up to the old established seats of commerce new fields of enterprise, whose wealth and resources become tributary to their growth and prosperity? Boston has shown that she is fully alive to the stimulating urgency of these considerations. Let New York, already behind hand with her, awake to the imminence of the danger which imperils her trade, but which our citizens, by putting forth (in addition to what they have already

done) but a tythe of the energy and means used by Boston to compass the like end, may yet, notwithstanding, seasonably avert.

Having hinted at these well founded causes of apprehension, we should do a simple injustice to the enterprise of our citizens, did we fail to connect, with merited encomium, that which yet remains to be done, with the magnificent lines of communication, in every way worthy her leading position, which have already been consummated. Her New York and Erie, her Hudson River, and central lines of railroads, place her in a proud position, not only as regards America, but with the world. Her Erie canal is without a rival. But our space debars us from dwelling upon achievements of such inestimable value to the best considered interests of humanity. We say *humanity*; for the wide scope of human well-being and of human suffering they promote or mitigate may well be said to be co-extensive with the human family. In a word, we may safely venture to assert that there does not exist throughout the wide world any system of physical change, wrought by human device, which has been equally disseminative of benefits to mankind.

But the successful accomplishment of these leading projects of internal improvement proportionably magnifies the importance of securing the full measure of their benefits. Our city now drains the commerce of the Hudson River country, the Mohawk and Genessee valleys, the intermediate sections lying east of Lake Erie, and the trade of the upland southern counties of this State. These form her immediate stay and support. The vast regions beyond these points that are now reached by Lakes Erie, Huron and Michigan, are alike tributary to her prosperity. Aided by the appliances of human skill and ingenuity to the cultivation of the soil, the virgin bosom of their untold acres of exuberantly fertile land, continues to give forth with almost illimitable productiveness, the great staples of human support. Hitherto these have reached New York by the Erie canal, the central line of railroad and Hudson River. Following the channel of this commerce, the living streams of western and eastern travel have taken the same route. Western merchants, New England settlers seeking new locations in the far west, the continuous flow of emigrant travel have alike found their course to lie along our western lines of communication; making New York the grand recipient of their whole productiveness, while she in return has furnished their whole supplies of merchandize.

Is it not well that our citizens should understand that it is the diversion of this great trade which has made New York the store-house of nations, and which is being imperilled by the lines of communication progressing through Canada to connect the Wilmington Central railroad with the Ogdensburg route to Boston that is to be guarded against?

Were the Canadian line of road, known as the Great Western, under the control of a direction interested alike at all points of this line, less of danger to New York interests might be apprehended. A portion of the commerce and traffic of western Canada and of the States beyond (which her geographical position divides from New York) would continue to take its accustomed route. But with a Board of Directors, three-fourths of whom are merchants and business men resident at Hamilton, who have already shown their desire to monopolize the local trade of the western section of

Canada by running their line away from every enterprising town and village lying west of them for one hundred miles, and who as one-half the whole cost of their road is to be advanced by the Provisional Government and two-thirds of the balance by the local municipalities, have themselves contributed but little capital towards its construction and are more solicitous that it should benefit their own city than be in itself a prosperous enterprise; and as their interests would also be further promoted by the lines of steamers to connect with Ogdensburg running to their port; we do not hesitate to say, that with such a direction the Boston and not the New York interest must predominate.

A single fact will make this apparent. The city of Hamilton is built upon a narrow strip of country nearly on a level with Lake Ontario at the base of a range of heights some 300 feet above the water level. The whole remaining Western peninsula bounded by the Niagara, Detroit, and St. Clair rivers, and by Lake Erie and Lake Huron lies upon this upper level. Had it been designed to promote the interests of New York and of her central line of railroad, the Great Western line, after reaching the eastern terminus on this upper level, would have extended itself thence on the same grade to the Niagara river. What, however, has been their course? At an enormous outlay, they descend to the water's edge by a continuous grade of 45 feet to the mile, for a distance of twelve miles; and again, following the narrow strip of land running along the base of this range of heights to the Niagara river, they ascend the same elevation to reach a proposed terminus near Niagara Falls. Is it for a moment to be imagined that with the advantage of fast lines of steamers plying direct from Hamilton to Ogdensburg, the circuitous descending and ascending route to Niagara Falls will command one tenth part of the travel that Boston will secure by means of the Ogdensburg line?

Thus, identity of interest between the Boston, Ogdensburg, the Michigan Central, and the Great Western [Canada] Roads is not to be gain-sayed.

Will it be believed then that this connection is about to receive the powerful support of the companies owning the New York central line of railroad? That great exertion is now being made to induce the Utica and Syracuse, the Albany and Schenectady, and the Syracuse and Rochester companies to take one million stock in the Great Western Canada line? That with a most singular obliquity of judgment, Mr. E. Corning, president of the Utica and Schenectady road, has used his influence to get that company to take \$200,000 stock, and that but for the apprehension that their means would but serve to foster a rival route, the stockholders of the other companies might have been equally led to promote a railway interest directly antagonistic to the prosperity of all our Western lines of travel? The returning good sense of our citizens owning stock in these companies, will, it is hoped, induce them to beware not to adopt a course which is literally suicidal to their own best interests as stockholders.

OBSERVER.

Buffalo, Nov. 25th 1851.

Atlantic and St. Lawrence Railroad.

The section on the line of this road, extending from the Connecticut river to Island Pond, has been placed under contract. The balance of the line to the boundary will be immediately let.

New London, Willimantic and Palmer Railroad.

We have received the recent report of the directors of this road. The results thus far have been quite favorable. The whole line has been in operation only 13 months, and the receipts during that time have averaged nearly \$9,000 per month. The income of the company from the commencement of the running of the trains, to the first November, 1851, was:

From passengers and express.....	\$104,830 12
From freight.....	59,349 16
From mail service.....	2,930 90
From rents.....	1,349 63

168,459 81

The expenditures for the same period, for operating and repairs of road, have been.....	86,200 22
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Net income.....	82,259 59
Interest paid on bonds and loans to this date, inclusive.....	66,541 12

Leaving a balance to the credit of earnings, of.....	\$15,718 47
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The receipts to the 13th November, 1850, were \$66,404; and from 13th November, 1850, to 1st November, 1851, about 11½ months, the receipts have been \$102,055 81—showing an increase of more than 50 per cent. over the receipts of last year; and this, too, under many embarrassing circumstances, and during a period of great depression in the manufacturing business on the line of the road and throughout the country.

The capital stock of the company authorised by the united charters from Connecticut and Massachusetts is \$1,700,000. The liabilities are:

Stock subscribed.....	\$528,500 00
Of which there remains unpaid.....	35,266 57

493,233 43

Scrip issued for interest convertible into stock.....	30,361 23
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523,594 66

Seven per cent bonds.....	500,000 00
Six ".....	300,000 00
Balance of earnings.....	15,718 47
Floating debt.....	111,097 57

\$1,450,410 70

The cost of road and equipment to November 12th is as follows:

Land, land damages and fencing.....	\$184,754 90
Graduation and masonry.....	407,766 88
Iron.....	311,233 56
Superstructure of wood.....	92,019 83
Bridges.....	84,965 08
Stations and buildings.....	56,063 87
Locomotives and cars.....	104,209 81
Engineering and miscellaneous exp... ..	49,927 12
Interest on notes and accounts.....	23,745 14
Discount on bonds.....	104,363 28
Scrip issued to stockholders for interest.....	30,361 23

1,450,410 70

The expenditure per last report, Nov., 1850, was.....	1,333,000
Estimated then to complete.. ..	57,000

1,390,000 00

\$60,410 70

The excess of expenditure above the estimated sum arises from the numerous unsettled accounts at that time, and the extra cost of land, land damages, graduation, masonry, etc.

The directors estimate that a sum less than \$20,000 will be sufficient to close up all unsettled accounts, and to complete the road, except making the connections at Norwich and New London.

When completed, the road will cost less than \$23,000 per mile, which, though a larger sum than

was expected, is at a much less rate than the cost of any other road of equal material, in New England.

When the roads leading northerly from Palmer are completed, and the connections made with the Norwich and Worcester, and New Haven and New London roads, this road must necessarily prove a very profitable one. There will then be a continuous line between New London and the Canadas; and from the fact that Norwich has an excellent harbor, it is believed that a portion of the northern travel will seek an outlet there, which is now attracted to Boston, New York, and other commercial ports. As the New London, Willimantic and Palmer road will form part of this line, all the trade between New London and the Canadas will pass over it. The local business of the road alone will amply pay for its construction, and the accession of trade which it will derive from Canada and the lakes will enable the stockholders to realise a very handsome profit from it.

Buffalo and Brantford Railroad.

This road commences at Fort Erie, nearly opposite Buffalo, and extends to Brantford, near which it is to connect with the Great Western railroad. The country through which it runs is extremely fertile and well settled.

At Caledonia, about 18 miles from Brantford, the plank road from Hamilton to Port Dover intersects the route which will assuredly bring to the railroad a large amount of traffic.

Brantford is at the head of the navigable portion of the Grand river. The population of the place is about 5,000, and it is situated in the middle of one of the best wheat growing districts in the Province. As water power can be obtained there to almost any extent, the completion of the road will undoubtedly be the means of bringing it into extensive and varied application.

As an illustration of the amount of traffic that may be expected on this road, Brantford alone paid during last year for teaming on the plank road to and from Hamilton \$16,000, and in the same year 600,000 bushels of wheat were brought into Brantford; and it is believed that the quantity for the present year will be upwards of one million of bushels.

During the same period, 30,000,000 feet of lumber were turned out by the various mills along the river.

This will ensure to the road a good local business, and as it forms the shortest route in connection with the Great Western railroad between Detroit and Buffalo, the immense traffic between those two ports, which now passes over Lake Erie will be transferred to the railroad. The great tide of western travel which flows towards Buffalo over the railroads converging to that point, will take the Buffalo and Brantford railroad to its junction with the Great Western, and thence be carried on to Detroit, and the travel eastward from Detroit will take the same route.

The road can easily be constructed. More than half of the distance traversed is level, or under ten feet per mile, and the maximum grade is 30 feet per mile, extending for a distance of eight miles. The sharpest curve has a radius of one mile, and seventy miles of the whole distance is straight line.

The whole cost of the road is estimated at only \$800,000, or but little more than \$10,000 per mile. The cheapness of the road, together with the immense amount of traffic which may be expected to pass over it when completed, cannot fail to render it highly profitable.

Railroads in Indiana.

We give below a list of the railroads in Indiana which are either completed, or which are in such a state of forwardness, that they will be finished within a year from this time, with the exception of the Ohio and Mississippi, and some portions, probably, of the New Albany and Salem roads:—

	Miles.
1. New Albany and Salem.....	344*
James Brooks, New Albany, President.	
2. Jeffersonville.....	66
W.G. Armstrong, Jeffersonville, Pres't.	
3. Madison and Indianapolis.....	86
John Brough, Madison, Pres't.	
4. Shelbyville branch.....	16
W. P. Stevens, Shelbyville, Pres't.	
5. Rushville branch.....	20
Hubbard, Rushville, Pres't.	
6. Knightstown branch.....	27
H. B. Hill, Carthage, Pres't.	
7. Lawrenceburgh and Indianapolis.....	90†
G. H. Dunn, Lawrenceburgh, Pres't.	
8. Indiana Central.....	71‡
Wm. H. Newman, Centreville, Pres't.	
9. Richmond.....	4
10. New Castle and Richmond.....	28
J. T. Elliot, New Castle, Pres't.	
11. Indianapolis and Bellefontaine.....	83
O. H. Smith, Indianapolis, Pres't.	
12. Peru and Indianapolis.....	72‡
John Burke, Indianapolis, Pres't.	
13. Lafayette and Indianapolis.....	68
A. S. White, Lafayette, Pres't.	
14. Crawfordsville.....	26
I. C. Elston, Crawfordsville, Pres't.	
15. Terre Haute and Indianapolis.....	72
Chauncy Rose, Terre Haute, Pres't.	
16. Evansville and Illinois.....	50
Samuel Hall, Princeton, Pres't.	
17. Martinsville branch.....	29
18. Indiana Northern.....	135
Geo. Bliss, Springfield, Mass., Pres't.	
19. Extension of the Greenville and Miami..	10
E. B. Taylor, Pres't.	
20. Ohio and Mississippi.....	160
A. T. Ellis, Cincinnati, Pres't.	

Total.....1,458‡

In addition to the above, which are either in operation or in progress, we have a number of projected lines, which will soon be commenced upon. The more important of these are, the proposed road from Peru north, to intersect with the Indiana north, 62 miles. The line from Fort Wayne, in the direction of Chicago. A road will soon be in progress from Galion, or Crestline, Ohio, to Fort Wayne. It is also contemplated to extend the Evansville and Illinois road from Vincennes to Terre Haute, a distance of 60 miles. It is also the design of the New Castle and Richmond road to extend their line in the direction of Chicago, via Logansport. Measures are in progress to construct a road up the Wabash valley from Lafayette to Logansport. This road will, without doubt, be extended up the valley of the Wabash to Toledo. The extent of the line projected, which will soon be under contract, will carry the aggregate in the State up to 1,800 miles, the greater part of which will be completed within three years.

All this immense work will be the result of a few years. The railroad system of Indiana, instead of requiring a long time to mature and complete it, as has been the case in the older States, will spring at a bound into existence, and active operation.—From the favorable nature of the country, railroads can be built with great ease in every part of the State; and so cheaply, that they are within the compass of every well-settled district. We doubt whether there is a State in the Union that has dis-

* With the branch to Indianapolis and to Chicago.

played greater enterprise in the construction of their roads, or which has accomplished more in as short a period. In a few years, every farmer within her territory will be in convenient distance of a railroad. The same can hardly be said of any other State in the Union.

We have already begun to see the influence which her roads are beginning to exert. Wherever they have been opened, they have more than doubled the value of real estate. They have added vastly to the exports of the State, by opening outlets for them. They have given Indiana a conspicuous position among her sister States, and have restored to her the financial credit which she lost by her failure under the State system of internal improvements. The success of her people in the construction of railroads, shows how much more can be accomplished by individual effort, than by the State in its collective capacity.

State Internal Improvement Convention in Arkansas.

A numerous attended convention of the friends of internal improvements in Arkansas was held at the capital on the 5th ult. It was organized by the appointment of Col. Henry M. Rector president, and C. Langtree secretary.

The object of the convention was to organize public sentiment, and direct the energies of the State to the construction of some leading lines of railroad, which should develop its resources, and stimulate the industry of its people. It was suggested that one of these roads should be constructed from Little Rock to the White river, and another to Benton. A resolution was also adopted to establish "an Independent Journal, devoted to Internal Improvements, Education, and kindred subjects, at the seat of government, to bring before the minds of the people such information as will lead to correct views, and practical results—to aid in developing the great mineral wealth now lying hid within our borders, and to furnish such statistical information as may be useful and necessary as the basis of future action, and generally to diffuse such wholesome truths as will be calculated to elevate us abroad, to bring into action the energies of our now depressed people, and to push on to completion this work of internal improvement, by which alone our State may hope to attain her proper position in the Union; which Journal, to be effective, shall be separate from, and independent of, all political parties."

The convention also resolved "that it is of vital importance to the prosperity of the whole people of Arkansas, that a railroad be established from the seat of government to some eligible point on the Mississippi river, as soon as practicable, connecting us with our sister States, and with the great southern emporium, to be extended thereafter from the heart to different extremes of the State, and by lateral roads as the interest of the community may require.

2. That a permanent central committee be raised by this convention, to consist of five members, whose duty it shall be to take the preparatory steps for the location and construction of such road from Little Rock to White river, and, if deemed expedient hereafter, to be extended to the Mississippi river, and to act in harmony, as far as practicable, with the internal improvement commissioners, and any boards of internal improvement which may be formed in the State.

3. That such permanent committee shall immediately cause books of subscription for stock to be opened, under the direction of such persons as they

may designate, and at such places as they may deem advisable, both within and without the State, if they deem it expedient; and, whenever the sum of fifty thousand dollars shall have been subscribed, including such sums as may or already will be pledged to the work by members of this convention, they shall call a meeting of the subscribers for stock, a majority of whom, with such committee, shall immediately organize an incorporated company, under and in conformity with the general corporation law of this State, for the purpose of building said road at least as far as White river, with such capital as may then have been subscribed, and to be increased to a sufficient amount in shares of one hundred dollars each, and shall elect a president and directors, under their organization, who shall cause the proper surveys to be made, and commence the work.

4. That we pledge ourselves, not only to this specific work, but to encourage and sustain other works of like kind connected with it, or in extension of it, until the great agricultural and mineral resources of our State, now comparatively dormant or in embryo, become developed, and our State assumes the proud attitude to which her position and her boundless sources of hidden wealth so justly entitle her.

5. That each and every internal improvement commissioner in the State be, and is hereby, specially requested to retain in his possession such portion of the internal improvement fund as he now has, or may hereafter come into his hands, without applying the same to any local or temporary work, until unity of action may be obtained, and such fund applied to some general and permanent work, in which the whole State may be interested, and in conformity with the intent of the original grant by Congress."

The convention also declared that the public lands donated by Congress to the State of Arkansas, ought to be applied to works of internal improvement, and its members pledged their efforts to effect a repeal of the present law, by which the proceeds of such lands are to be distributed among the counties.

The convention was composed of the leading men in the State, and its proceedings were conducted with a spirit which promises the best results. Addresses were made by the President, Messrs. F. W. Newton, Edmondson, Cissell, Beebe, Col. Fowler, J. H. Crease, the Governor of the State, Mr. Fletcher of New Orleans, and numerous other gentlemen.

A committee, composed of Messrs. Roswell Beebe, Col. Thomas W. Newton, Gen. W. E. Ashley, Col. A. Fowler, and Geo. C. Watkins, Esq., were appointed to take the preparatory steps for the location and construction of a railroad from Little Rock to White river, and the convention adjourned to meet at the capital on the 2d of February next.

The above we believe to be the first movement of the kind that has ever been made in Arkansas. If vigorously followed up, it bids fair to place that State in a very different relative position, compared with that which she at present occupies. Arkansas is one of the richest States in minerals in the Union, possessing vast coal and iron fields, and abounding in lead, copper silver, gypsum, emery, manganese, soapstone, marble, dolomite, zinc, and some of the precious stones, such as the *Lapis Lazuli*, etc. She possesses a great extent of excellent soil. What she needs is a public spirit which shall open outlets for her natural resources, and they will soon be turned to account. Let her imitate the example of some

of her sister States not much older than herself—Illinois and Indiana, for instance—and the elements which she possesses within herself will raise her to an equal pitch of greatness, and public consideration. As she is, and has been, she is probably of the least account of any State in the Union. Such her own citizens feel to be the fact, and they are resolved that she shall continue so no longer.

Railroad in the Provinces.

The Legislature of Nova Scotia have passed the Government railroad bills. As Canada has already done the same thing, two of the three parties have assented to Mr. Howe's arrangement. That New Brunswick will follow the example of her sister provinces we have hardly a doubt. A project that involves the expenditure of 30 or \$40,000,000 will pretty certainly carry itself, especially, as in the above case, where the money can be had for the asking. Such a project is sure to make friends as it goes along, particularly when the money is to be disbursed by a few hands. We predicted in the outset, that the magnitude of the project would ensure success.

If New Brunswick agrees to the terms imposed upon her, and the work be commenced and pushed with the vigor which abundance of means will be likely to impart, the amount of money expended, will give a very busy aspect to the Provinces and our northern frontier. As the Provincial line will sweep around our territory for a long distance, our people will then cut numerous radii to intersect it. In this way it will become a useful and important work as far as we are concerned. Whether profitable or not as a business enterprise, it must exert a strong influence in developing the resources of New Brunswick and Nova Scotia.

These two provinces are hardly surpassed in natural wealth by any portion of this continent.—This has lain dormant from the lack of enterprise to turn it to account, and for the want of a market to give it commercial value. These, the proposed railroad will to some extent supply. Should it be accomplished, it would put a new face upon affairs in the Provinces.

Liability of Railroads.

Verdict against the New Haven Railroad Co.—The New Haven Journal reports the case of Roswell Hood vs. the New Haven railroad company, which was tried at the October term of the Superior Court in that city. Mr. Hood, on the 15th of January last, bought a ticket at the office of the railroad company in New Haven, entitling him to a passage to Collinsville, Conn. He took the cars for Plainville, and there the conductor of the train took his ticket, and gave him in exchange a check entitling him to a seat in the stage from Plainville to Collinsville. On the road, the stage was upset, and Mr. Hood's right leg was broken. For this injury he claimed damages.

For the defence, it was contended that the company as a corporation had no power to contract to carry passengers by stage, and that if they had such power, they were not liable in this case. That the railroad and stage were distinct and separate lines, and did not participate at all in profit and loss, but passengers were ticketed through for the convenience of such separate lines as well as for the convenience of the passengers themselves. It was further argued that the accident was unavoidable. The plaintiff, however, produced evidence to show that it was the result of carelessness, and the jury seem to have been so convinced, for they awarded the plaintiff \$3,400 damages, and costs.

Damages against the Naugatuck Railroad Co.—

In the Superior Court at New Haven, Erastus Burr and wife, and Harriet Lum, have successfully brought actions against the Naugatuck railroad company, to recover damages for injuries received by the overturning of a car on the 5th of October, 1849. It was claimed there was negligence on the part of defendant. Verdict for plaintiffs in each case, for Burr and wife \$1,000, and for Mrs. Lum \$8,500.

Trautwine on Curves, and on Cubic Contents.

We are glad to present the following remarks on these books, as confirmatory of our own opinions, expressed in a former number. They are extracted from a letter written by one of our best known Civil Engineers, a gentlemen distinguished alike for his successful practice, and scientific acquirements:—

Pittsburg, Nov. 25, 1851.

Sir—I have examined Mr. Trautwine's book on Railroad Curves, as well as his new method of Calculating Excavations and Embankments, which you did me the honor to submit to my inspection. Such books have long been a desideratum to the profession, and Mr. Trautwine has very ably supplied the want.

His mode of calculating cuttings and fillings is at once novel, rapid, and correct; and it is much to be hoped that it will be generally adopted. That it will rapidly find favor with our Civil Engineers, I do not doubt.

His book on Curves is compendious and clear; it embodies nearly all the problems of curvature necessary to be solved in the field; and as a pocket companion for the assistant engineer it will be found invaluable. I am, very respectfully,

Yours, etc.,

ELLWOOD MORRIS.

Illinois.

The Rock Island and Southern Michigan roads are progressing very rapidly under the present pleasant weather.

Mr. Gardner has the contract on the Southern Michigan to the State line, and on the Rock Island to Worth, and is driving the work as fast as possible.

Mr. Matteson has the contract from Worth to the Du Page river. He has sub-let the most of it, and there are men at various points on the road. The calculation is, to have the road done to Joliet by July 4th next.

J. Crotty, Esq., a very experienced and worthy contractor, is about taking the contract from Du Page river to Ottawa.

The part of the road from Ottawa to Rock Island is now being negotiated by different contractors.

Tennessee.

An effort is being made by the people of Blount county, East Tennessee, to cause the line of the East Tennessee and Georgia railroad to pass thro' that county, instead of crossing the Tennessee river at Blair's Ferry, and running through Knoxville, as has been contemplated. Considerable distance would be saved by the change, and a cheaper and more direct route would be followed.—Should it be effected, the connection of the above, with the East Tennessee and Georgia road would be formed at Strawberry Plains, in Jefferson county. The change of route spoken of is favored we believe by the last named company. It would save them the building of some 15 miles of road. Blount county has already raised \$127,000 toward the above object, and promises to carry this sum up to

\$150,000. Should the contemplated alteration meet the approbation of the East Tennessee and Georgia railroad company, it will be likely to be carried out.

Hempfield Railroad.

At a meeting of the Hempfield railroad company held at Washington on the 24th ult., the following gentlemen were elected directors for the ensuing year:—Harrison T. Laird, Hugh Brady, S. Bentley, T. M. T. McKennan, James Pauli, Samuel Neel, I. W. Mitchell.

Ohio and Pennsylvania Railroad.

This road is now in operation from Pittsburg to Enon Valley, 45 miles, and an Express train is to be put on to-day. It will leave Pittsburg at 8 o'clock, A. M. The road will be completed to Salem in a few weeks. The Pittsburg Gazette says two gangs of hands are laying the track between Alliance and Massillon, and the cars will probably run to Massillon, 110 miles from Pittsburg, early in January.

Notice to Contractors.**Virginia Central Railroad.**

SEALED PROPOSALS will be received at the Engineer's Office of the Virginia Central railroad at Staunton, on the 18th day of December, 1851, for the Grading, Masonry, etc., of that portion of the line extending from Staunton to Panther's Gap, a distance of 35 miles. Drawings and specifications of the work may be seen from the 15th to the 18th of December, inclusive.

The best of references will be required. Contractors are requested to state what work they are engaged upon, and when it will be completed.

The Directors reserve the right to accept or reject proposals as they may consider the interests of the company require. The names, in full, of all the parties must be given in the proposals.

By order of the President and Directors.

T. COLDEN RUGGLES,
Chief Engineer.

Railroad Instruments.

THEODOLITES, TRANSIT COMPASSES & LEVELS on a new principle, with Fraunhofers Munich Glasses, Surveyors' Compasses, Barometers, Chains, Drawing Instruments, etc., all of the best quality and workmanship, for sale at unusually low prices by
E. & G. W. BLUNT,
No. 179 Water st.

New York, Dec. 1, 1851.

M. B. Hewson, Civil Engineer,
(Open to a New Engagement,)
Memphis, Tenn.

**LOWMOOR
LOCOMOTIVE TIRES.**

THE Subscriber, sole agent for the Lowmoor Co., is prepared to take orders for this superior description of tires, which are furnished, bent, welded and blocked to any dimensions, having but one weld, and at a cost to the importer of less than ten cents per pound for the heaviest weights.

WM. BAILEY LANG.

Boston, November 29th. Im

Railroad Iron.

THE undersigned offer for sale 1000 tons Railroad Iron, (about 56 lbs. to the yard,) now at Brooklyn.

CHOUTEAU, MERLE & SANFORD,
Oct. 1, 1851. 51 New st.

Railroad Iron.

2000 TONS of an approved pattern 59 to 60 lbs. per lineal yard, now manufactured in England, and ready for immediate shipment, from thence. Also, 2,500 tons of different patterns in port and expected to arrive within sixty days. For sale by
DAVIS, BROOKS & Co.
28 Beaver Street, New York.

CONTRACTS made for Railroad Iron at a specific price delivered in England, or at port in the United States.

To Railroad Companies.

H. & F. BLANDY, Proprietors
LOCOMOTIVE ENGINE WORKS,
ZANESVILLE, OHIO.

RESPECTFULLY give notice to Railroad Companies that they are now prepared to furnish Engines of the most approved construction and finish, which, for capacity, speed and durability, are not excelled in this country.

Also, all other Railroad machinery, of both wrought and cast iron, pertaining to the road, stations or machine shops.

Terms as favorable as any other builders in the United States.

The facilities for transportation from Zanesville are as good as from any other point in the Union, having steamboat navigation to the Ohio river, and Canal boat and Railroad connection with the Ohio river and Lakes.

One of their Engines, the "MUSKINGUM," on the Central Ohio Railroad, may be referred to, or others, at their works. The attention of those interested is invited, and orders solicited.

Oct. 30th, 1851.

To Contractors.

OFFICE OF THE E. AND ILL. R. R. CO.,
Evansville, Oct. 23d, 1851.

SEALED PROPOSALS will be received at this office from the 13th to the 23d day of December next, for the grubbing, grading and bridging of that portion of the Evansville and Illinois railroad, lying between Princeton and Vincennes, a distance of 24 miles.

This work includes two bridges; one across White River, about 600 feet, the other across Patoka, about 200 feet.

Contractors will state what proportion of the Stock of the Company will be taken in payment.

Plans, profiles and specifications, will be exhibited, and all requisite information given at the Office of the company in Evansville, on and after the 13th day of December next. By order of the Board of Directors.

SAM'L. HALL,
President.

RAILROAD SPRINGS.

Fuller's India-rubber Springs.

THESE are now made in our own Factory, of the best materials. Each spring is guaranteed to perform the required work. Purchasers guaranteed against adverse claims.

Car Builders will save great expense by calling at the office of the Company.

23 Courtlandt St., New York.

To Railroad Companies.

THE undersigned has discovered and patented an imperishable, cheap, and sufficiently elastic substance, to be introduced between the sill and rail, so that the stone sill can be used in place of the wooden sill: entirely overcoming that rigidity where the rail is laid directly on stone. Address
J. B. GRAY, Philadelphia.

July 10, 1851.

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Railroad Iron.

THE undersigned are prepared to enter into contracts now at specific prices, to deliver Railroad Iron during the coming Winter and Spring, free on board at the shipping ports in Wales, or at ports in the United States.

CHOUTEAU, MERLE & SANFORD,
Sept. 30, 1851. No. 51 New st.

To Contractors.

OFFICE WILMINGTON & MANCHESTER R. R. CO.,
Marion C. H., S. C., October 18, 1851.

SEALED PROPOSALS will be received until the 15th of December next, for the Piers of a Bridge across the Great Pee Dee River. The job comprises four piers, one a very heavy pier for a draw, and the sinking of cast iron hollow piles by "Dr. Pott's Pneumatic Process," for forming foundations. The plans and specifications of the piers will be exhibited by the Secretary of the Company at Marion Court House, and by the Resident Engineer, L. J. Fleming, Esq., at Wilmington, North Carolina.

WALTER GWYNN,
Chief Engineer Wilm. and Man. R.R.
November 1. Richmond, Va.

Bridges & Brother, DEALERS IN RAILROAD AND CAR FINDINGS,

64 Courtlandt street, New York.

Having established a general Depot for the sale of articles used in the construction of Railroads, Locomotive Engines and Railroad Cars, we would invite your attention to our establishment. We have already in store a good assortment of CAR FINDINGS and other articles used in the trade, and feel justified in saying, that should you desire anything in our line, we can supply on terms perfectly satisfactory, and in the event of your desiring to order, you may feel assured that your terms will be as good as though you were here to make your own purchases.

Among our goods may be found Railroad Car Wheels, Axles, Jaws and Boxes, Nuts and Washers, Bolts, Brass Seat Hooks and Rivets, Window and Blind Springs, Lifters and Catchers, Door Locks, Knobs and Butts, Ventilators and Rings, Car Lamps, Coach and Wood Screws, Jack and Bed Screws and Babbitt's Metal; also Plushes, Damask, Enameled Head Linings, Cotton Duck for Top Covering in width sufficient without seams, Curled Hair and all other articles appertaining to cars.

Also a new and valuable CAR DOOR LOCK, well adapted to the Sliding Door. This is decidedly the best yet introduced.

LOCOMOTIVE ENGINE LANTERNS, the best article made in the country. Whistles, Gauge and Oil Cocks, Hemp Packing, American, Russian and Italian. We are also agents for Lightner's Patent Journal Box for Car Axles, that invaluable invention, for the economical use and preservation of Car Journals.

Coach VARNISH and Japan of the best quality. We would also offer our services for the purchase as well as for the sale of goods on commission.—Both members of our firm have had the experience of many years in the manufacture of Railroad Cars, and our Senior was a member of the well known house of DAVENPORT & BRIDGES, Car Manufacturers, Cambridgeport, Mass. With our knowledge of matters pertaining to Railroads, we feel quite confident in giving satisfaction to both buyer and seller, and hope that through assiduity and attention to any business entrusted to our care we shall merit a continuance of confidence and patronage.

BRIDGES & BROTHER.

July 22, 1851.

Lightner's Patent Axle Boxes.

The undersigned are Agents for, and offer for sale, *Lightner's Patent Axle Boxes*, for Railroad Cars and Tenders, which have, by thorough experience, been demonstrated to be one of the most valuable improvements ever introduced in Locomotion. The saving effected in oil alone, will in a few months pay the first cost of these boxes, independent of other advantages. They are now in use upon the following, among other roads, viz:

Boston and Worcester, Boston and Providence, Boston and Fitchburg, Nashua and Lowell, Providence and Worcester, Northern, N.H., Cheshire, Manchester and Lawrence, Concord, N.H., Concord and Claremont, Ogdensburg, (Northern, N.Y.) Stonington, New London Willimantic and Palmer, New Jersey Central, New Hampshire Central, Worcester and Nashua, Fitchburg and Worcester, Connecticut and Passumpsic, Lowell and Lawrence, Salem and Lowell, Wilton Branch, Newburyport.

Below will be found the certificates of a number of gentlemen, whose opinions will be good authority in every part of the country.

Office Boston and Prov. R. R.,
Boston, Dec. 28, 1849.

Mr. JOHN LIGHTNER,

Sir,—It affords me pleasure to say, that after two years' trial of your boxes, I am fully and entirely satisfied of their superiority over any other pattern we have used. This superiority consists in economy of oil and freedom from "heating." I have tried every pattern of box in use, of any note, and do not hesitate to say, that you have devised one which in every respect combines greater advantages than any other within my knowledge; these advantages are so manifest, that I am fitting up all

our cars with your boxes, as fast as practicable.

Annexed, is a statement of an experiment with your boxes, the result of which may be of use to your interests.

Ten passenger cars, running 72 wheels, fitted up with Lightner's boxes used 41½ pints of Patent Oil, at 50 cts. per gallon, ran 43,099 miles, equal to 5.18 pints per wheel for 43,099 miles. Speed, 30 to 40 miles per hour.

Very respectfully yours,

W. RAYMOND LEE, Supt.

I have examined the above statement of Mr. Lee, and fully concur with him in his opinion of the superiority of Lightner's box.

GEORGE S. GRIGGS,
Supt. Machine Shop B. & P. R. R.

Boston, July 26, 1849.

This is to certify that J. Lightner's axle boxes for railroad cars and locomotive tenders, have been in use on the Boston and Worcester railroad one year, and I unhesitatingly pronounce it, in my opinion, the best and most economical one in use, requiring less oil, of easy application, not susceptible of derangement, as in most kinds in use. When requiring repairs or renewal, the same may be done in one-fourth of the time usually occupied for that purpose. The box requires oiling not oftener than once a month—is kept quite free from dust, and consequently wears much longer than those generally in use.

D. N. PICKERING,
Supt. Motive Power, B. & W. R. R.

Office of Boston Locomotive Works,
December 12th, 1849.

The Boston Locomotive Company have been using J. Lightner's patent axle boxes under the tenders of their engines for several months, and find them more highly spoken of by the railroad companies that have used them in regard to economy in the use of oil, their durability and their ease of adjustment, than any other boxes which they have used. We therefore do not hesitate to recommend them to all railroad companies.

DANIEL F. CHILD,
Treas. Boston Locomotive Works.

Taunton Locomotive Works,
Taunton, July 7, 1849.

Mr. H. F. ALEXANDER,

Dear Sir,—Your favor of yesterday came to hand in which you ask what success we have met with, in using Mr. Lightner's patent box for cars, engines, &c.

We have put it in use on the Boston and Providence railroad, New Bedford and Taunton Branch railroad, Central railroad, N. J., Norfolk County, Rutland and Burlington, and as yet we have not had one complaint from them; and from what we have used of it, and witnessed, we do not hesitate to say that it is superior to anything in use for that purpose. It is simple in its construction, and easy of access, and the reservoir is held close to the shaft, and the oil and journal is perfectly secure from dust; they will run from four to six weeks without replenishing the oil. The brass in the box is changed very much easier than by any other plan that we have seen.

Very resp. yours,
W. W. FAIRBANKS, Agent.

Office Providence & Worcester R. R. Co.,
Providence, Dec. 17th, 1850.

H. F. ALEXANDER, Esq.,

Sir,—The "Lightner patent boxes" for cars and locomotives have been in use under a portion of the passenger cars and engines of this company for upwards of two years, and have given very great satisfaction.

Though combining many excellent qualities, their great superiority consists in the economy of oil.

The result of experiments upon this road shows the consumption of oil by the use of this box, to be not more than one sixth part the quantity consumed by the use of the common box.

With the common box, eight passenger cars, 64 wheels, running 90 miles per day, consumed in 12 months 520 gallons of oil, being an average of 8½ gallon per wheel per annum.

With the Lightner box the same cars running the same number of miles per day, during the same space of time consumed 73½ gallons of oil, being an average of 1½ gallon per wheel per annum.

So manifest are its advantages over any other box used by this company, it is intended to place it under all our cars as soon as practicable.

Besides the saving of oil, as they afford complete security from dust, we think them more durable than any other box in use.

Another advantage resulting from the use of this box is, cars run more easier than with the common box. The saving in fuel which it would effect, would of itself, we think be a sufficient inducement to use this box in preference to any other known to us.

Very respectfully,

ISAAC H. SOUTHWICK, Supt.
JOHN B. WINSLOW,
Supt. Machine Shop, P. & W. R. R.

Cambridgeport, April 5th, 1851.

H. F. ALEXANDER, Esq.

Sir,—This may certify that I have been engaged in the manufacture of railway cars since 1834, and have built for the different railroad companies cars of all descriptions to the amount of three millions of dollars, and have used on the above cars all kinds of journal boxes, and find that none give better satisfaction than the "Lightner patent box," both on account of the saving of oil and the arrangement for taking out and re-placing the composition by means of the sliding key, and other conveniences which no other box possesses.

Yours respectfully,
CHARLES DAVENPORT.

Worcester, March 17th, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—This is to certify that I have been for some years past engaged in building cars, and that I have tried most, if not all of the patent boxes, and have found Lightner's patent superior to all others as far as the saving of oil is concerned, also the ease with which they are fitted and exchanged in case they get out of order.

For the last three years, I have put them under all of the cars I have built, and in every instance they have given the most entire satisfaction.

Yours truly,
OSGOOD BRADLEY.

Office Union Works, So. Boston,
May 23d, 1851.

This certifies that I have applied Mr. J. Lightner's patent axle boxes to my locomotives and tenders for the past two years. I consider them superior to all others,—economical in their use, and possessing many important advantages not found in any other boxes.

SETH WILMARTH.

Office 15, R. R. Exchange, Boston,
June 1, 1851.

This is to certify, that we have known the success of Lightner's patent journal boxes upon various roads in New England the past three years, and have been led to examine their peculiar construction.—We are well satisfied of their merits, and have adopted them upon our small gravel cars, and take pleasure, as we ever have done, in recommending their use upon all roads where we are employed in the construction.

GILMORE & CARPENTER,
Contractors.

Amoskeag Manufacturing Co. Machine Shop,
Manchester, May 31, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—We are using the Lightner box on all the engines and tenders we build, and we are satisfied that it is the best box in use, and recommend the same to all those who purchase engines at our works.

Yours respectfully,
O. W. BAYLEY, Agt.

This is to certify that the Fitchburg railroad company having become satisfied of the superiority of J. Lightner's patent Axle Boxes for Railway Cars and Locomotive Tenders adopted the same

and are bringing them into general use upon their road.

One year's experience with the above improvement, has fully convinced me that there has never been anything offered to the public for that purpose which possess such intrinsic value; in fact, this is an improvement which seems to overcome all the difficulties found in all the various kinds now in use. It possesses very many advantages over all others: Some of which are [first] the first cost is much less than that of most boxes in use. [Secondly] 75 per cent is saved in oil; one gill applied to each Journal once a month, or one quart to an eight wheel car, is all these boxes require per month [Thirdly] no dust can gain access to the Journal, which is constantly lubricated with clean oil; hence the saving in repairs of Journals and composition bearings, is a matter of importance. [Fourthly,] its construction is truly simple—not complicated, having nothing liable to become loose by constant and severe service. [Fifthly] for convenience there is nothing which approaches this improvement.—The composition bearings may be removed from the Journals of an eight wheel car, by one man, and returned, or duplicates, in twenty minutes, while under the car: the same would require two men; at least half a day with other boxes in use.—The trucks and wheels using these boxes, are free from oil and dirt, usually seen upon all railroad cars, at great expense to the corporation.

NATH'L JACKSON.

Supt. Car Building and Repairs, F.R.R. Co.

Boston, March 9, 1849.

I hereby certify, that I have examined a box for Car Journals, invented by Mr. Lightner of Roxbury, Mass, and I have thought so well of it that I have adopted it on our railroad, I have known of its success on other roads.

S. M. FELTON,

Supt. F. R. R.

Office of the Central R. R., N. J., }
Elizabethtown, May 1849. }

H. F. ALEXANDER, Esq.,

Dear Sir:—Your favor, [wishing to be informed how we liked Lightner's patent axle boxes for R.R. Journals,] has been duly received; in answer we would say, we have used the boxes on Locomotive tenders one year, more or less, and on our cars some six months. I consider them the best boxes in every respect, I have ever used, or even seen used on any other roads—for safety, durability and the economy pertaining to all the details connected with the boxes and Journals of R. R. Car wheels; and we shall adopt them upon this road.

Yours Respectfully,

JOHN O. STEARNS.

Supt. Central Railroad Co., N. J.

Manchester, N. H., Nov. }
1st, 1850. }

H. F. Alexander, Sir,

I have used "Lightner's Boxes" under all the Cars of the Manchester and Lawrence railroad, and feel no hesitation in saying that I think them to be the best boxes now in use.

Yours, &c.,

THEODORE ATKINSON, Agent.

Cheshire R. R. Office, Keene, }
March 5th, 1851. }

Mr. H. F. Alexander,

Sir,—Lightner's Patent Boxes have been used on the Cheshire R. R. about a year, and have given the highest degree of satisfaction.

All the Passenger Cars now in use, and a considerable number of Merchandise Cars are furnished with them, and they will take the place of the Common Boxes on all the cars as fast as circumstances will permit.

Very Resp't.

L. TILTON,

Supt. Cheshire R. R.

Boston and Worcester Railroad, }
Boston, April 1st, 1851. }

H. F. Alexander, Esq.,

Dear Sir,—Lightner's Patent oil saving box for railroad cars, has been adopted by this corporation; we are taking out the common and substituting the

Lightner's at the rate of fifty boxes per month; it will soon take the place of all others, as it is decidedly preferable to any heretofore used by this corporation.

G. TWITCHELL, Supt.

Statement of amount of oil used on 32 8-wheel freight cars, on the Boston and Providence Railroad (with Lightner's Boxes) from March 10, 1849, to February 27, 1851, and upon 12 8-wheeled passenger cars from September 8, 1849, to February 27, 1851.

FREIGHT CARS.			
Amount Oil.	No. months.	Amount Oil.	No. months.
1.—21 pts.	10	17.—23½ pts.	14
2.—19 "	6	18.—23½ "	11
3.—25 "	13	19.—36 "	21
4.—18 "	7	20.—22 "	10
5.—22 "	12	21.—38½ "	24
6.—24 "	13	22.—29 "	23
7.—20 "	11	23.—35½ "	23
8.—21 "	11	24.—37½ "	23
9.—23½ "	10	25.—51 "	23
10.—21 "	9	26.—31½ "	23
11.—20 "	9	27.—28½ "	24
12.—21½ "	11	28.—36 "	23
13.—19 "	8	29.—50½ "	24
14.—25½ "	17	30.—50 "	23
15.—20½ "	10	31.—41 "	23
16.—31 "	18	32.—39½ "	23

Total, 925½ pts. 510

PASSENGER CARS.

1.—19½ pts.	18	7.—30 pts.	18
2.—25½ "	18	8.—25½ "	18
3.—33½ "	16	9.—29 "	18
4.—19 "	15	10.—46½ "	17
5.—15 "	15	11.—9 "	9
6.—22 "	18	12.—65½ "	17

Total, 340 pts. 197

Averaging 1 4-5 pints of oil for freight, and 1 7-10 for passenger cars per month only!

All orders and enquiries promptly attended to.

BRIDGES & BROTHER,

No. 64 Courtlandt st., New York.

July 25, 1851.

Trautwine on R. R. Curves.

By JOHN C. TRAUTWINE, Civil Engineer,
Philadelphia, Pa.

JUST published, accompanied by a Table of Natural Sines and Tangents to single minutes, by means of which all the necessary calculations may be performed in the field.

This little volume is intended as a field-book for assistants; and will be found extremely useful, as it contains full instructions, (with wood cuts) for laying out, and adjusting curves; with Tables of Angles, Ordinates, etc., for Curves varying from 13 miles, down to 146 feet Radius.

A portable Table of Natural Sines and Tangents to minutes; has for a long time been a desideratum among Engineers, independently of its use in laying out curves.

The volume is neatly got up in duodecimo; and handsomely bound in pocket-book form.

Sold by Wm. Hamilton, Actuary of the Franklin Institute, Philadelphia. Price \$1.

Also, "Trautwine's Method of Calculating Excavation and Embankment."

By this method, which is entirely new, (being now made known for the first time) the cubic contents are ascertained with great ease, and rapidity, by means of diagrams, and tables of level cuttings. Thin octavo; neatly half bound, \$1. For sale by Wm. Hamilton.

June 28, 1851.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff St.

CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by POWERS & WEIGHTMAN, manufacturing Chemists, Philadelphia.

Jan. 20, 1849.

To Chief Engineers, Directors of Railroads, Canals, etc.

A Civil Engineer and Surveyor, who has been professionally engaged under the British Government, East India Company, etc., is desirous of obtaining employment as an Assistant. No objection to the South or West. Address for one month to C. E. & S., American Railroad Journal office.

August 16, 1851.

To Engineers.

A NEW WORK on the Marine Boilers of the United States, prepared from authentic drawings, and illustrated by 70 engravings, among which are those of the fastest and best steamers in the country, has just been published by B. H. Bartol, Engineer, and is for sale at the store of

D. APPLETON & CO.,

Broadway

September 1, 1851.

Pneumatic process for making Foundations for Bridges, Piers, etc.

THE Attention of Engineers, Contractors, and Bridge Builders, etc., is directed to this method of forming secure foundations. Hollow Cylindrical piles from 8 inches to 10 feet in diameter may be sunk through sand, mud, clay, &c., to any required depth, and filled with concrete or masonry.

The efficacy and economy of the process has been demonstrated in the construction of numerous permanent works, at a much less cost than the use of any other method. (See evidence in Parliamentary enquiry, Railroad Journal, April 19, 1851.)

Contracts made, or licenses granted for the use of the invention in any part of the United States, by

CHARLES PONTEZ,

34 Liberty street, N. Y.

LOWMOOR IRON.

THE LOWMOOR IRON COMPANY having appointed Wm. BAILEY LANG their sole agent in America and Canada, he is now prepared to receive and execute all orders for Railway Tire Bars, bent, welded, and blocked Railway Tires, Axles, Piston Rods, and Boiler Plates. Also, plain, angle, rivet and every other description of Lowmoor Iron.

All communications respecting the above are requested to be sent to Wm. Bailey Lang, at his Steel Warehouse, No. 9 Liberty Square, Boston, or to the Lowmoor Iron Works, Bradford, Yorkshire, England.

30th Sept., 1851.

RAILROAD SPRINGS.

Fuller's Patent India-rubber Springs.

PRICE reduced to 50 cents per pound. The owners of this Patent now manufacture the Springs in their own Factory, and guarantee that each spring shall perform its required duty.

Purchasers guaranteed against adverse claims. They may have full confidence in the working qualities of the springs.

The suits brought against Ray & Co., will soon be brought to issue, and we await the result with satisfaction; having full confidence in the pure administration of the Laws.

The long advertisements put forth by Ray & Co. about prior invention of the spring are worthless; he has not proved prior invention, and cannot sustain his patent in a Court of Law.

For the owners of Fuller's Patent,

G. M. KNEVITT,

23 Courtlandt st., New York.

October 7, 1851.

Railroad Iron.

THE undersigned, Agents for British Manufacturers, continue to sell Railroad Iron of the best quality, and of any weight or pattern required; deliverable at any part of the United States or Canada.

They have now on hand, ready for delivery New York:

2,000 tons of an approved pattern, weighing about 60 lbs. to the yard.

WM. F. WELD & CO.,

42 Central Wharf, Boston.

Practical and Scientific Books

PUBLISHED BY

HENRY CAREY BAIRD,

SUCCESSOR TO E. L. CAREY, PHILADELPHIA.

For sale by Dewitt & Davenport, Tribune Buildings, New York, and Booksellers generally throughout the United States and Canada.

Now being published in Twelve Parts, price 25 cents each, the **PRACTICAL MODEL CALCULATOR**, for the Engineer, Machinist, Manufacturer of Engine work, Naval Architect, Miner and Millwright.—By Oliver Byrne, Compiler and Editor of the Dictionary of Machines, Mechanics, Engine Work and Engineering, and Author of various Mathematical and Mechanical works—illustrated by numerous Engravings; forming, when completed, one large volume, octavo, of nearly 600 pages.

It will contain such calculations as are met with and required in the Mechanical Arts, and establish models or standards to guide practical men. The tables that are introduced, many of which are new, will greatly economize labor, and render the everyday calculations of the *practical man* comprehensive and easy. From every single calculation given in this work other calculations are readily modeled, so that each may be considered the head of a numerous family of practical results.

The examples selected will be found appropriate, and in all cases taken from the actual practice of the present time. Every rule has been tested by the unerring results of mathematical research, and confirmed by experiment, when such was necessary.

The Practical Model Calculator, will be found to fill a vacancy in the library of the practical working man long considered a requirement. It will be found to excel all other works of a similar nature, from the great extent of its range, the exemplary nature of its well selected examples, and from the easy, simple and systematic manner in which the model calculations are established.

Parts 1, 2 and 3 now ready.

American Miller and Millwright's Assistant, By W. C. Hughes. 12mo., illustrated.....	\$1 00
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Best Cast Steel Axles & Tires,
(A NEW ARTICLE.)

For Railroad Carriages and Locomotives.

THE quality of this Steel is sufficiently attested in the announcement that it has carried off the first prizes awarded at the World's competition of 1851, in London. The axles are in general use on the Continent, and are now offered in competition with any other that can be produced; and to be tested in any way that may be desired by the Engineers of the United States, either by impact or by torsion. This Steel is manufactured by Fried Krupp, Esq., of Essen, in Renish Prussia, represented in the United States by

THOS. PROSSER & SON,
28 Platt st., New York.

November 1.

To Railroad and Canal Companies, Contractors, etc.

THE Undersigned wishes to direct the attention of Chief Engineers and Contractors to the facilities he possesses for supplying them with workmen, laborers, etc. of any description, and also to remind them that he forwards such men to whatever destination they may be required.

Companies or Contractors desirous of receiving peaceable and industrious men, will be promptly supplied at the shortest possible notice.

C. B. RICHARDS,

No. 85 Greenwich Street, New York.

REFERENCES:—Chas. H. Webb, Esq., Supt. of the St. George's and British Protective Society, New York; Messrs. Harris and Leech, Philadelphia, Wm. P. Malburn, Esq., Albany.

To Stone Masons.

THE NEW ALBANY AND SALEM RAILROAD Company have about 10,000 c. yards of Abutment Masonry to let at private contract, to be completed by the 1st of July, 1852.

To contractors who can produce testimonials of character for ability as STONE MASONS, fair, remunerating prices will be given.

Early applicants, by securing the work now offered, will gain advantages over competitors for the erection of an additional 15,000 yards, to be let out early next spring, in bridging the streams between Bedford and Michigan City, via Bloomington, Gosport, Crawfordsville and Lafayette, (the most productive and healthy region in Indiana,) by the knowledge they will have acquired of the resources of the country.

Application may be made in person, or by letter addressed to the undersigned, at New Albany, Indiana.

S. B. WILSON, Engineer.
Engineer's Office, New Albany,
Sept. 29th, 1851.

Engine Waste.

CLEAN WASTE for Locomotive and Steamboat Engines, in lots as wanted; also, superior Steam Packing. Orders, with explicit directions for forwarding, should be addressed to

J. MORTIMER HALL,
36 South st., New York.

November 1. 3m

Notice to Contractors.

SEALED proposals will be received at the office of the company in Galesburg, on Wednesday, the 24th day of December next, for the grading, bridging and masonry of the Central Military Track road. The road will be nearly fifty miles in length, and embraces a variety of work well worth the attention of contractors.

Proposals will also be received at the same time and place, for the Cross Ties, to be delivered at different points on the line.

Contractors will be expected to state in their bids the amount of the stock of the company they will be willing to take for work done; and preference will be given to those bidders who will take the greatest amount of stock.

Plans, profiles, specifications, etc. will be exhibited ten days previous to the day of letting, and all the necessary information with regard to the manner of its construction, etc., furnished by the engineer of the Board.

By order of the Board of Directors.

WM. McMURTRY, President.

GEO. G. LANPHERE, Secretary.

To Railroad Companies, etc.

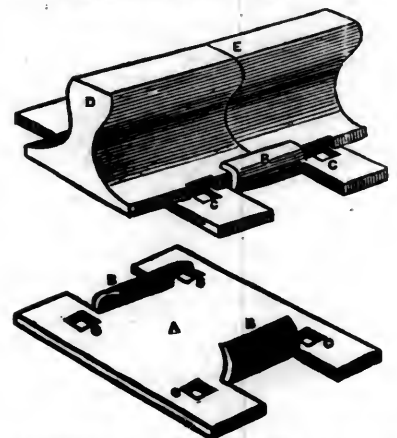
The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

I also invite attention to an improved PATENT SPRING LOCK, for SLIDING Doors to Freight and Baggage Cars, now in use upon the Pennsylvania Central, Greenville and Columbia, S.C., Reading, Pa., and other Railroads.

Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH,
46 South 8th St. Philadelphia.

May 9, 1851.

The American Railroad Chair Manufacturing Co.

ARE prepared to make WROUGHT IRON RAIL ROAD CHAIRS, of various sizes, at short notice.

By use of the WROUGHT IRON CHAIR, the necessity of the wedge is entirely done away—the lips of the chair being set, by means of a sledge or hammer, close and firmly to the flange of the rail.

The less thickness of metal necessary in the Wrought Iron Chair gives much greater power and force to the spikes when driven—and consequently a much less liability to the spreading of the rails by reason of the spikes drawing or becoming bent.

The less weight necessary in the Wrought Iron Chair, will enable us to furnish them at a cost much below that of CAST IRON CHAIRS.

DESCRIPTION OF THE ABOVE CUTS.

Figure 1 is a perspective view of the rail secured in the chair, and fig. 2 is a perspective view of the chair itself. D, E, are sections of two rails placed together, and secured at the joint on the chair by the jaws B, B. The chair is bolted down by spikes C, C. In fig. 2, the chair is represented as made of a single block or plate A of wrought iron.

The chair is set in its proper place on the track, spiked down, and the ends of the two rails brought together within the jaws as represented in fig. 1.

For further information address,

N. C. TROWBRIDGE, Secretary,
Poughkeepsie, N. Y.

June 1, 1851.

Railroad Commission Agency.

THE Subscriber offers his services to Railroad Co's and Car Makers for the purchase of equipment and furniture of roads and depots and all articles and materials required in the construction of cars, with cash or approved credit. No effort will be spared to select the best articles at the lowest market price.

He is sole Agent for the manufacture of the ENAMELED CAR LININGS, now in universal use. The best Artists are employed in designing new styles, and he will make to order pieces with appropriate designs for every part of the car, in all colors, or with silver grounds and bronzed or velvet figures.

He is also Agent for Page's Car Window Sash Fasteners, which is preferred by all who have used it to any other.

CHARLES STODDER,
75 Kilby st., Boston.

June 20, 1851.

3m.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 136 NASSAU ST., NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.
SECOND QUARTO SERIES, VOL. VII., No. 50! SATURDAY, DECEMBER 13, 1851. [WHOLE No. 817, VOL. XXIV.]

PUBLISHED BY J. H. SCHULTZ & CO., 136 NASSAU ST.

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American Railroad Journal.

Saturday, December 13, 1851.

Relation of the Lakes to the Internal Commerce of the U. S.

We believe that a rapid change is going on in the direction of the internal commerce of the country, owing to the attractive influence of the great lakes, and the facilities they afford to the easy transmission of merchandise from one portion of the country to the other. Up to a comparatively recent period, the outlet of the western States was by the Mississippi river. The lakes now possess one to the Atlantic, in the Erie canal, much superior, as far as directness, safety and despatch are concerned, to any of the western rivers. Trade is consequently attracted to the former, and this trade is rapidly building up cities upon their borders.—These cities, as they grow up, will constantly enlarge the sphere of their influence, and the area of country dependent upon them. They will become the great receiving and distributing points of the produce and merchandise exported from, and imported into, the western States. All the canals, and the more important lines of railroad in that section of the country, are based upon the lakes, through what is found the cheapest and most convenient

outlet for the produce of the regions they traverse.

For the reasons given, we shall find, for the next ten years, that the most rapidly growing towns in the west will be those situated upon the lakes. We believe that Chicago is destined to be the second, if not the largest city in the United States, west of the Allegheny Mountains. It possesses all the elements necessary to constitute a great city, in its unrivalled position at the foot of Lake Michigan, in being surrounded by an exceedingly fertile country, and in being situated in the vicinity of vast coal fields, and in being the future centre of numerous and important lines of railroad. It may not outstrip Cincinnati, but it certainly will every other western city. For similar reasons, Cleveland, Toledo, Sandusky and Detroit, must become important cities, each of which will command their share of trade. Cincinnati, Louisville and St. Louis, must continue to grow rapidly, but we do not believe that they will maintain their present relative positions compared with the lake cities. The latter must, to a great extent, become the importing and exporting ports for the former, and derive all the advantages resulting from such a relation.

The lakes, therefore, must become the great theatre of the commerce of the west. Our Atlantic cities, that are contending for this trade, should bear in mind, that they must reach it through these great water courses; and their ability to compete for this trade, will depend upon the excellence of the routes by which they are reached. The one that possesses the cheapest and best route to them must in the end distance all its competitors.

It is a remarkable fact, that all our great eastern cities are about equi-distant from the lakes. Philadelphia and Baltimore are, in fact, nearer to Lake Erie than New York. Boston reaches the navigable waters of Lake Ontario in about the same distance that the cities named reach Lake Erie. On the score of distance, the position of our great towns are pretty nearly equal, and if they can preserve a similar equality in the routes by which they reach the western waters, all may expect to command a portion of the trade that falls upon them. Boston and New York have already opened their lines. We believe that it is vastly important Philadelphia and Baltimore should follow their example. Philadelphia is now endeavoring to secure her connection through the Sunbury and Erie road. As Baltimore will connect with this road at

Williamsport, this line will be common to both, from that place. By constructing a road from Wheeling to Wellsville, Baltimore would have, in connection with the Cleveland and Wellsville road, an independent line to Cleveland. Upon the lakes are to be the great store houses of the west, and the best route from them to the Atlantic coast, will constitute the key that will unlock the door to their treasures.

Pneumatic Pile Driving.

As we believe the process of sinking the formations of bridges and piers upon the above principle to be a great improvement over the coffer dam, or the ordinary mode of pile driving, we place before our readers a detailed statement of this process, as practically tested in England. We believe it could be used with great economy, and would be the means of securing much more permanent structures than those built upon any other method:—

This is an entirely new and strikingly effective process for causing bodies of a given form and in certain situations, to descend into the earth, to a very considerable depth, with an ease and rapidity approaching those with which, from their own specific gravity, they would descend in water.

Our earth is surrounded by a mass of material fluid, known as *air*, extending for about 45 miles perpendicularly from every portion of its surface. A column of this air, rising throughout its entire height, and of one inch diameter, is of the weight of about 15 lbs. Upon every square inch of surface just such a column is of course continually incumbent, and hence the pressure of the atmosphere is commonly said to be "equal to about 15 lbs. to the square inch." Now this enormous pressure—amounting to nearly a ton upon every square foot, is sufficient to crush almost everything beneath it; but the pressure of fluids is equal in all directions; and hence, to us, it remains imperceptible; just as that of water does to fish. It is however only necessary to withdraw, or partially extract, the air from a given receptacle or enclosed space, to destroy this counteracting pressure, and, with appliances adapted to the purpose, to cause the natural and inevitable results to become palpably apparent.

Of these facts the inventor of the present process has availed himself, to work out effects both novel and startling in themselves and important and valuable to the community. This process is available for the formation of shafts for mines and wells; but the purpose to which it is at present chiefly applied, is the sinking of piles to form foundations for the construction of harbors, docks, railroad bridges, lighthouses, beacons, batteries, banks for the reclamation of waste land from the sea, etc.

The manner in which this operation has until lately been performed is this:—the piles are driven

into the earth by means of a weight, which is wound up to the top of a frame, and then allowed to fall, some dozen feet or more, upon the pile beneath. This procedure is at times extremely tedious, laborious, and expensive, and in some cases wholly ineffectual. Solid particles under pressure have a tendency to form natural arches; anything forced among them is driven between such arches, and hence its descent becomes extremely difficult, notwithstanding its being wedge-shaped or pointed in the manner customary. Such, indeed, is the resistance offered, that, on the Goodwin Sand, a steel bar could be forced only 8 feet down with a sledge-hammer; and Capt. Bullock, R. N., found that a pointed iron rod of 3 inches diameter, when sunk 13 feet in the sand, required forty-six blows of a monkey weighing 1 cwt., with 10 feet fall, to drive it one inch deeper! Engineers, in fact, admit that hitherto piles have frequently been driven by a cross-cut saw—that is, the workmen have found it easier to cut them off at the top than to accomplish the physical impossibilities expected of them when provided only with the appliances hitherto employed.

By the new process, however, the resistance spoken of is overcome or utterly annihilated, and piles are sunk to any depth required, by other, instantaneous, and far more powerful agency than could result from the application of any force that we possess. Such operations are usually carried on in sand, shingle clay, etc., forming the bed of an arm of the sea, or of a river, or in swampy ground, and, in general, it is necessary, in the new process, that there shall be some small depth of water over the spot selected; and this, if not present, may be readily supplied.

The form of pile used is a hollow cylinder or tube, of any convenient shape, diameter and length, and having each of its ends open. This tube is placed perpendicularly over the spot which it is required to penetrate, the lower end passing through the water, and resting on the surface beneath. To the upper end, is fitted a moveable cover, having an aperture to admit the suction pipe of an exhausting air pump; and, such pipe being inserted, and the air pump with which it communicates, set in action, the effect becomes immediately obvious, the tube beginning instantly to sink, and rapidly burying itself, the material through which it passes rushing in to fill up the vacuum caused by the partial withdrawal of the air, and passing up the tube and through the suction-pipe of the air pump, into the receiver provided for it, leaving the tube ready for the reception of whatever material may be thought proper to fill up and render it a solid column.

The negative, though fundamental cause of this ascent of the solid material, is certainly the withdrawal of the air from the interior of the tube; but the immediate one is the enormous pressure of the air on the comparatively large external surface around the tube, which pressure of course always exists in what may be called a latent state, and only becomes sensible or apparent to us on the removal of it from the enclosed surface in the manner described, and the destruction of the natural equilibrium thereby effected.

The causes of the descent of the tube are two; the weight or pressure of the air incumbent on the top or cover, combined with the weight of the tube itself; and the undermining process in operation at its lower edges, from the constant giving way of the solid particles in contact with them, as they rush into the vacant interior, in consequence of the pressure on the external surface above; which pressure is thus shown to be the most important and effective of the causes in operation.

The tubes, thus sunk, may be rendered solid throughout, by filling them with a concrete composed of a mixture of shingle, or the like, with any of the cheap cements adapted to the purpose—of which there are several kinds. Solid piles, like those hitherto employed, are sunk in a precisely similar manner; the lower end of each of them being fitted with a hollow casing, a foot or less in depth, called a "shoe," and having in its top an aperture for the insertion of the suction-pipe, which descends with it, and is afterwards detached and drawn up. By means of a contrivance termed a *jacket*, a rock lying below sand or shingle may be penetrated with implements already known, and

the solid pile inserted into it, whenever it may be desirable.

The depth attainable by this process may be considered, for all practical purposes, unlimited: water may be removed by it to a depth of 30 feet, and solid material* to one very much greater. The rate at which the tubular pile, or caisson, descends, is dependent on the rapidity of the extraction of the atmospheric air from its interior. With a good pair of air pumps, of proportionate size and well worked, the descent is surprising, but with the assistance of a *Voider* or large vessel previously exhausted of its air, it is almost instantaneous, particularly when shingle beach and boulders form the material to be acted on. The weight the tubes are capable of sustaining when sunk and filled up, is enormous. Nineteen, each one foot in diameter, and 16 feet in length, sunk by this process in sand eighty feet in depth, support a pier of a stone viaduct passing over an arm of the sea in Anglesey, and sustain a weight of 600 tons without sinking a hair's breadth.† The Trinity Board have purchased a license for the use of the process, and are constantly employing it. Several beacons have thus been placed on sand-banks and in other dangerous situations; a tube 2½ feet in diameter, has been sunk 33 feet into the Goodwin Sand,‡ where, as already stated, Admiral Beaufort could force a steel bar only 8 feet down; and there seems every reason to believe that by means of this invention those frightful shifting sands might now be fixed, and a harbor formed, at a comparatively inconsiderable cost.

The material of which the tubing is composed is in general cast iron, but any other, when more suitable, may be employed; such, for instance, as the Artificial Granite patented by Mr. Buckwell, and consisting of a silicious cement, enveloping a mass of shingle, flint, &c., capable of being moulded into tubular cylinders of any form or capacity, and which he states are to be obtained at about two-thirds the cost of brick. Tubes of cast iron will not be injuriously affected by the action of salt water; the constituents of which, entering into chemical combination with the iron, dissolve only a sufficient portion of it to form the material in contact with the metal into a concrete of the most enduring kind. It is common to find the bolts and other iron-work of vessels lost upon the coast, amidst a hard mass of conglomerate thus created, and the inventor of the present process is in possession of part of such a concretion, of which a cast-iron pitch-kettle formed the nucleus. It is clear, therefore, that sand, &c., into which such tubes had been sunk, would rapidly be converted into conglomerate rock; but this effect may be prevented by defending the metal from the action of the water by means of a coating of varnish or pigment adapted to the purpose.

Where the tube is required to be of large dimensions—as in the case of an insular detached erection of any kind, it may be constructed—after the manner of a bottomless vat, of a number of stave-

* It is found, in practice, that not only will sand, shingle, mud, bog, and clay, be carried up the pile, but even large stones are carried in suspension, so that every kind of soil can be mastered, except rock, and there it is not wanted, because there is a solid foundation.—*Civil Engineer's Journal*.

† The whole of the Artesian Well, now proposed for supplying the Metropolis with pure water, might be sunk by means of this process, in a very short space of time, and at a cost much within that at present estimated for them.

‡ From a communication recently received from Frank Forster, Esq., Superintending Engineer, it appears that this foundation, placed in a situation where the wash is very great—owing to the force of the current and the movable nature of the sand, has now stood for nearly two years, and is found to answer perfectly. Mr. Forster adds,

"Such is my opinion as to the efficacy of your hollow piles on the large scale, that I intend to sink the first shaft I have through quicksand requiring hollow iron cylinders, by means of your process."

‡ During the past summer, (1849) tubes 2½ feet in diameter have been sunk on these sands, to the depth of 60 feet.

like pieces of wood. These vat-like tubes may be of a large diameter, and the upper portions of them so fitted up as to become secure habitations for persons occupied in the cultivation of reclaimed land, or engaged in fishing, pilotage, etc., or the staves may be merely temporarily pinned together, and the tube, so constructed, having been floated to the spot required, and sunk to the proper depth, a rock of concrete—cement and shingle, into which masts or wrought iron bars may be inserted, may be formed in it, and the staves loosened and withdrawn, leaving behind them a column of perfectly solid rock, and ready to be applied to the formation of similar structures *ad infinitum*.

A succession of tubes may be added longitudinally to the first, if necessary, by means of screw, flange, cement, or other joints, so as to form a column of any length; the shape may be cylindrical, angular, or conical, so as to cause them to fit each other laterally, and form a continuous line or wall; and their diameter may range from one-eighth of an inch to 50 or 60 feet.

The expense and loss of time occasioned by the construction of coffer-dams may thus be avoided; and it is a striking characteristic of the process, that while the descent of the piles, although so rapid, may be graduated to the greatest nicety, once thus sufficiently inserted, it becomes impossible to force them deeper by any amount of pressure that can be applied.

The Topographical Survey of the Lakes.

The topographical survey of the lakes, the Detroit Free Press says, is now confined to the straits of Mackinac, and the work the past season has been conducted by Capt. J. N. Macomb, First Lieut. J. W. Gunnison, First Lieut. E. P. Scammond, and Second Lieut. W. F. Reynolds, of the corps of Topographical Engineers; Jacob Houghton, Jr., H. Gillman, and W. Hearing, of Michigan, and J. E. Potter, of Ohio, Civil Engineers and assistants. The general direction of the work has been in the hands of Col. Abert, Chief of the Topographical Bureau at Washington. The whole party numbers about seventy-five. This force has been divided, and a portion occupied on the mainland coast, the island having been principally sounded and nearly completed, so as to enable Capt. Macomb to form the charts. To give some idea of the elaborateness and accuracy of the survey, the small island of Bois Blanc, about four miles in circumference, has eight points under the main triangulation, and in all these there are twenty-eight points. Among other important facts disclosed by this survey is, that about seventeen miles east north-east of Mackinack, among what is called the snows, (cheneaux,) there is a fine harbor, completely land-locked, and having at its entrance six or seven fathoms of water. The Free Press has a note from one of the party, correcting the opinion which has been entertained, that the waters in the vicinity of Saginaw Bay are of unfathomable depth. Soundings have been taken and bottom found at the depth of twenty-eight fathoms and at thirty-two fathoms. The soundings were taken at points forty-two and fifty miles from Thunder Bay lighthouse. The bottom is of sand, black and white specks. In the narrow part of St. Clair river bottom was found at the depth of seventeen fathoms. The same writer says:—There is no account of any accurate soundings to show that any point in the bottom of Lake Huron is as low as the surface of the ocean, altho' it has frequently been stated to descend below that level."

Ship Canal at the Sault.

We are glad to note that a determined movement for the accomplishment of this very important work has been started in the right quarter. The Detroit Free Press says:—

"A survey or reconnaissance is now in progress at Sault Ste. Marie, of the proposed ship canal, by Wm. Wiley, Esq., of the Central railroad, who left here for that purpose some days since. Mr. Wiley's experience as a practical engineer will doubtless be of essential service in the matter, and his report is expected to be incorporated into a memorial to be laid before Congress at its approaching session, in behalf of this much needed improvement."

Census of 1850.

We lay before our readers the following interesting statistics compiled from the census of 1850.

Since the census of 1810, there have been added to the territory of the republic, by annexation, conquest, and purchase, 635,988 square miles, and our title to regions covering 311,463 square miles, which before properly belonged to us, but was claimed and partially occupied by a foreign power, has been established by negotiation, and it has been brought within our acknowledged boundaries. By such means, the area of the United States has been extended during the past ten years from 2,055,168 to 3,221,595 square miles without including the great lakes which lie upon our northern border, or the bays which indentate our Atlantic and Pacific shores; all which has come within the scope of the seventh census.

In the endeavor to ascertain the progress of our population since 1840, it will be proper to deduct from the aggregate number of inhabitants shown by the present census the population of Texas in 1840, and the number embraced within the limits of California, and the new territories at the time of their acquisition. From the best information which has come to hand, it is believed that Texas contained in 1840, 75,000 inhabitants, and that when California, New Mexico and Oregon came into our possession in 1846, they had a population of 97,000. It thus appears that we have received by additions of territory since 1840 an accession of 172,000 to the number of our people.

Assuming the population of California to be 165,000 (which we do partly by estimate,) and omitting that of Utah, estimated at 15,000 the total number of inhabitants in the United States, was, on the 1st of June 1850, 23,246,301.

The absolute increase from 1st June, 1840, has been 6,176,848, and the actual increase per cent. is 36.18. But it has been shown that the probable amount of population acquired by additions of territory should be deducted in making a comparison between the results of the present and the last census. These deductions reduce the total population of the country as a basis of comparison, to 23,074,301, and the increase to 6,004,818. The relative increase after this allowance, is found to be 35.17 per cent.

The aggregate number of whites in 1850, was 19,619,366, exhibiting a gain upon the number of the same class in 1840, of 5,423,371, and a relative increase of 38.20 per cent. But excluding the 153,000 free population supposed to have been acquired by the addition of territory since 1840, the gain is 5,270,371, and the increased per cent. 37.14. The number of slaves by the present census is 3,198,298, which shows an increase of 711,085, equal to 28.58 per cent. If we deduct 19,000 for the probable slave population of Texas in 1840, the result of the comparison will be slightly different. The absolute increase will be 692,085, and the rate per cent. 27.83.

The number of free colored in 1850 was 426,637, in 1840, 386,245. The increase of this class has been 42,392, or 10.95 per cent.

From 1830 to 1840 the increase of the whole population was at the rate of 32.67 per cent. At the same rate of advancement, the absolute gain for the ten years last past would have been 5,578,333 or 426,515 less than it has been, without including the increase consequent upon additions to the territory.

The aggregate increase of population from all sources, shows a relative advance greater than that of any other decimal term, except that from the second to the third census, during which time the country received an accession of inhabitants by the purchase of Louisiana, considerably greater than one per cent. of the whole number. Rejecting from the census of 1810, 1.45 per cent. for the population of Louisiana, and from the census of 1850, 1 per cent. for that of Texas, California, &c., the result is in favor of the last ten years by about one-fourteenth of one per cent, the gain from 1800 to 1810 being 35.05 per cent., and from 1840 to 1850, 35.12 per cent. But without going behind the sum of the returns, it appears that the increase from the second to the third census was thirty-two hundredths of one per cent. greater than from the sixth to the seventh.

The relative progress of the several races and classes of the population is shown in the following tabular statement.

Increase per cent. of each class of inhabitants in the United States for sixty years:—

	1790	1800	1810	1820	1830	1840
Whites.....	35.68	36.18	34.30	34.52	34.72	38.20
Free colored.....	82.28	72.00	27.75	31.85	20.88	10.95
Slaves.....	27.96	33.40	29.57	30.75	23.81	28.58
Total colored.....	32.23	37.58	29.33	31.31	23.40	26.16
Total population.....	35.02	36.50	33.35	33.92	32.67	36.18

The census had been taken previously to 1830 on the 1st day of August; the enumeration began that year on the first of June, two months earlier, so that the interval between the fourth and fifth census was two months less than ten years; which time allowed for, would bring the total increase up to the rate of 34.36 per cent.

The tables given below show the increase from 1790 to 1850, without reference to intervening periods:—

	1790.	1850.	sixty yrs.	sixty yrs.
Number of whites.....	3,172,461	19,630,019	16,457,555	52,797
Free colored.....	59,466	428,637	369,171	61,741
Slaves.....	697,897	3,184,262	2,486,365	35,013
Total free colored and slaves.....	757,363	3,612,899	2,855,536	377
Total population.....	3,929,827	23,246,301	19,316,417	491,152

Sixty years since, the proportion between the whites and blacks, bond and free, was 4.2 to 1. In 1850, it was 5.26 to 1, and the ratio in favor of the former race is increasing. Had the blacks increased as fast as the whites, during these sixty years, the number on the 1st of June would have been 4,657,239, so that, in comparison with the whites, they have lost in this period 1,350,340.

This disparity is much more than accounted for by European emigration to the United States.

Dr. Chickering, in an essay upon Immigration, published at Boston, in 1818, distinguished for great elaborateness of research, estimates the gain of the white population, from this source at 3,922,152. No reliable record was kept of the immigrants into the United States, until 1820, when, by the laws of March, 1819, the collectors were required to make quarterly returns of foreign passengers arriving in their districts. For the first ten years the returns under the laws afford materials for only an approximation to a true state of the facts involved in this inquiry.

Dr. Chickering assumes, as a result of his investigations, that of the 6,431,088 inhabitants of the United States in 1820, 1,430,906 were foreigners arrived subsequent to 1790, or the descendants of such. According to Dr. Seybert, an earlier writer upon statistics, the number of foreign passengers from 1790 to 1810, was, as nearly as could be ascertained, 120,000; and from the estimates of Dr. Seybert, and other evidence, Hon. George Tucker, author of a valuable work on the census of 1840, supposed the number from 1810 to 1820 to have been 114,000. These estimates make, for the thirty years preceding 1820, 234,000.

If we reckon the census of immigrants at the average rate of the whole body of white population during these three decades, they and their descendants in 1820 would amount to about 360,000.

From 1820 to 1830 there arrived, according to the returns of the custom houses, 135,986 foreign passengers, and from 1830 to 1840, 579,370, making for the twenty years 715,356.

During this period a large number of emigrants from England, Scotland, and Ireland, came into the United States through Canada.

Dr. Chickering estimates the number of such from 1820 to 1830 at 67,998, and from 1830 to 1840 at 199,130; for the 20 years together, 267,128.—During the same time a considerable number are supposed to have landed at New York, with the purpose of pursuing their route to Canada, but it is probable that the number of these was balanced by omissions in the official returns.

Without reference to the natural increase then, the accession to our population from foreign sources from 1820 to 1840, was 982,479 persons.

From 1810 to 1850 the arrivals of foreign passengers in the ports of the United States have been as follows:—

1810, '41.....	83,504
1842.....	101,107
1843.....	75,153
1844.....	74,607
1845.....	102,415
1846.....	202,157
1847.....	234,756
1848.....	226,524
1849.....	269,610
1850.....	173,011

1,552,830

As the heaviest portion of this great influx of immigration took place in the latter part of the decade, it will probably be fair to estimate the natural increase during the term, at 12 per cent, being about one-third of that of the whole white population of the country at its commencement.

This will swell the aggregate to 1,739,192. Deducting this accession to the population from the whole amount of the increase of white inhabitants before given, that increase is shown to be 3,684,519, and the rate per cent is reduced to 25.95.

The density of population is a branch of the subject, which naturally first attracts the attention of the inquirer. The following table has been prepared from the most authentic data accessible to this office.

Table of the Area, and the number of Inhabitants to the square mile, of each State and Territory in the Union.

States	Area in square miles.	Population in 1850.	No. of inhabitants to square mile.
Maine.....	30,000	583,188	19.44
New Hampshire.....	9,280	317,964	34.26
Vermont.....	10,212	313,611	30.07
Massachusetts.....	7,800	994,399	126.10
Rhode Island.....	1,360	147,514	108.04
Connecticut.....	4,674	370,791	79.33
New York.....	40,000	3,097,394	67.66
New Jersey.....	8,320	489,556	60.01
Pennsylvania.....	46,000	2,311,756	50.25
Delaware.....	2,120	91,535	43.61
Maryland.....	9,356	583,035	62.31
Virginia.....	61,352	1,421,661	23.17
North Carolina.....	45,000	868,903	19.20
South Carolina.....	21,500	668,507	27.28
Georgia.....	58,000	905,999	15.68
Alabama.....	50,722	771,671	15.21
Mississippi.....	47,156	606,555	12.86
Louisiana.....	46,431	511,974	11.02
Texas.....	237,321	212,592	8.9
Florida.....	59,268	87,401	1.47
Kentucky.....	37,680	982,405	26.07
Tennessee.....	45,606	1,002,625	21.98
Missouri.....	67,380	682,043	10.12
Arkansas.....	52,198	209,639	4.01
Ohio.....	33,964	1,980,408	49.55
Indiana.....	55,405	988,416	29.23
Illinois.....	56,242	851,470	15.36
Michigan.....	56,243	397,654	7.07
Iowa.....	50,914	192,214	3.77
Wisconsin.....	53,924	305,191	5.65
California.....	188,981	.....	.....
Minnesota.....	83,000	6,077	.07
Oregon.....	341,463	13,293	.03
New Mexico.....	210,741	61,505	.28
Utah.....	187,923	.....	.....
Nebraska.....	136,700	.....	.....
Indian.....	187,171	.....	.....
North West.....	587,554	.....	.....
Dist of Columbia.....	60	51,687	861.45

3,221,595 23,080,792

[It will be noted that the population of California, and the territories of Utah, Nebraska, the Indian and Northwestern territories, is not included in the above table—the official returns not having been received.—*Journal of Com.*]

From the location, climate, productions, and the habits, and pursuits of their inhabitants, the States,

of the Union may be properly arranged into the following groups:

	Area of square miles.	Population.	No. of inhabitants to square mile.
New England States.	63,226	2,727,597	43.07
Middle States, including Maryland, Delaware and Ohio.	151,760	8,653,712	57.02
Coast planting States, including S. Carolina, Georgia, Florida, Alabama, Mississippi and Louisiana.	286,077	3,537,089	12.36
Central slave States, Virginia, N. Carolina, Tennessee, Kentucky, Missouri and Arkansas.	308,210	5,168,000	16.75
Northwestern States, Indiana, Michigan, Illinois, Wisconsin and Iowa.	250,000	2,735,000	10.92
Texas.	237,000	212,000	89
California.	189,000	165,000	87

There are points of agreement in the general characteristics of the States combined in the above groups, which warrant the mode of arrangement adopted. Maryland is classed, as heretofore, with the Middle States, because its leading interests appear to connect it rather with the commercial and manufacturing section to which it is here assigned, than with the purely agricultural States. Ohio is placed in the same connection for nearly similar reasons. There seems to be a marked propriety for setting off the new agricultural States of the northwest by themselves, as a preliminary to the comparison of their progress with other portions of the Union. The occupations which give employment to the people of the central range of States south of the Potomac, distinguish them to some extent from that division to which we have given the appellation of coast planting States.

To be continued.

Commerce of Cleveland.

The Cleveland Herald states the receipts by canal, at that place, to be larger than those of last year, notwithstanding the opening of the railroad. It gives the following figures for the two past years, for the articles of wheat and corn:

The receipts of Wheat the present year, to the 15th inst. are.....	2,529,609
In 1850, to same date.....	1,192,559
Increase, bush.....	1,337,140
Receipts of Corn in 1851, bush.....	998,059
" " 1850, ".....	831,704
Increase, bush.....	166,355
Receipts of Flour in 1851, bbls.....	645,730
" " 1850, ".....	367,737
Increase, bbls.....	277,993

At 70c per bushel for the wheat, 40c for the corn, and \$3 25 per bbl. for the flour, the value of the increased amount of these three articles since 1850, is \$1,906,038 25.

The Galena Advertiser gives an account of a discovery of lead ore, which promises to surpass anything of the kind on record. It was made about two miles north-east of the Linsiphur Mound, is two miles distant from any other diggings, on a farm in the prairie, and was made by a boy finding mineral in a creek. On examining the bottom of this creek, it was found to be almost a solid mass of lead ore for some ten or twelve feet in width. Some three or four holes have been sunk about four feet in the clay, on each side of the creek, and specimen of large black mineral taken out, weighing from fifty to one hundred pounds.

Virginia and Tennessee Railroad.

Report of the Chief Engineer, offered November 25, 1851.

GENTLEMEN—In compliance with established usage, I present the following annual report. The difficulties encountered in executing the work between Lynchburg and Salem have been greater than was expected. Every part of the work has been prosecuted diligently, and, on the deep excavations, containing rock, all the force that could be worked to advantage has been employed. It was, however, found impossible to complete the difficult points in time to lay the whole track as soon as proposed.

These points being near the eastern terminus of the road, it was necessary to incur some expense in hauling iron in order to finish the track at as early a day as possible. This additional expense will be amply repaid by the use of the road some months sooner than could otherwise be expected. It may now be promised, with certainty, that the road will be in operation to Liberty in the month of January, to Buford's in the month of March, and to Salem in July. And ten miles beyond Salem can go into operation in six weeks after the road reaches that point. For this ten miles the iron is not yet purchased. The track of this road consists of a U rail, weighing 60 lbs. to the yard, laid on substantial oak, chestnut or locust cross-ties, 9 feet long, averaging in size about 6½ by 10 inches, and laid every two and a half feet. The timber is much larger, and of better quality than that generally used on railroads, affording great firmness and security to the track. The iron rails are of the very best quality of imported rails.

The chairs are cast iron of the very best quality that can be made from the Virginia ores, they weigh 19 lbs., and are cast with a projection to fit into the hollow of the rail. This metal possesses great toughness. The spikes too are made of the very best bar that can be produced from Virginia charcoal pig, and are superior to any others, made from different metals.

The track is believed to combine every quality essential to a good road, in an eminent degree, and to secure, in the future operations of the company, both safety and economy. Few, if any, can be found of better materials or better construction. The passenger trains will be able to attain a speed of thirty miles per hour, on this road, with perfect safety. Under the contract with Mr. F. B. Deane, Jr., the cars necessary to equip the road, are now in process of construction at this place, and the quality of the work, as far as it has progressed, is such as to vindicate fully the policy of the board in securing these articles of Virginia manufacture. A sufficient number of these cars, for present use, will be completed by the end of next month. The contract with Joseph R. Anderson, Esq., of Richmond, was limited to five locomotives, one of which is to be completed by the first of December, and can be on the road by the middle of that month. Great care has been used in selecting the materials for these machines, and it is to be hoped that their performance will be such as to do credit to the enterprising builder.

A great amount of work has been done on the line between Salem and Wytheville, a heavy force having been engaged for the past year. The ten miles ascending the Alleghany Mountain, north of Christiansburg, constitute the heaviest portion of our work, and it would be difficult to complete it sooner than May, 1853. If the remainder of the road could be let by August next, all the graduation could be easily completed, as soon as this ten miles.

After the grading is completed the superstructure can be laid at the rate of ten miles per month. This would secure the completion of the work by June, 1854, if no delay should occur for want of money, even if the remainder of the line should not be placed under contract, until the end of next year. So that nothing would be gained by placing the light work beyond Wytheville under contract before a year hence. The greater part of the distance between Wytheville and the State line is very light.

A party of engineers has been employed for the last twelve months in revising and improving the line from Salem to the State line, and completing the definite location, with the exception of a few

weeks devoted to the New river survey. The exact length of the road, as now located, is 204 6-10ths miles, and the examinations have resulted in important improvements in the character of the line. It is believed that some time may yet be profitably spent in this way. A company can pay no money more profitably than that which is expended in the thorough examination of the country before a final location is made.

The party were engaged about six weeks in making a survey, from a point near Christiansburg, on our road, down New river to the mouth of Indian Creek. At this point, they connect with a survey made under the authority of the State.

From Christiansburg to Indian Creek, a very favorable route is found. No grade exceeding 60 ft. per mile rising eastward, and none greater than 68 feet per mile falling eastward would be required—thus preserving the same limits of graduation used on the Virginia and Tennessee railroad.

The descent from the summit at Christiansburg, is by a succession of grades—none exceeding 60 feet per mile, and no very expensive work is encountered.

The valley of New river is reached near Major James Kent's; after which the work is light and the grades are very gentle. In a few places the maximum grades are used for short distances, to cut off bends of the river and save distance.

From Christiansburg to the mouth of Indian Creek, is 62½ miles, and will cost \$1,002,500, or \$17,000 per mile. We find in Mr. Shaw's report, the distance from Indian Creek to Greenbrier, to be 14½ miles, and the cost of graduation, bridging and masonry to be \$77,700—adding \$105,000 for superstructure will give for the cost of 77½ miles, from Christiansburg to the mouth of Greenbrier, \$1,248,200, or a fraction under \$16,000 per mile.—But to cover the cost of depots, cars, engines, and all contingencies, we will call it \$20,000 per mile, which, for 77½ miles, is \$1,545,000.

Let us compare the two routes proposed between the mouth of Greenbrier and Richmond. First by the Central railroad, we have the following distances:

From Richmond to Charlottesville.....	100 Miles.
" Charlottesville to Staunton.....	40 "
" Staunton to Covington.....	70 "
" Covington to mouth Greenbrier..	76 "
	286 "

The distances by way of Christiansburg, Lynchburg, etc., are—

From Richmond to Lynchburg.....	115 Miles.
" Lynchburg to Christiansburg....	86 "
" Christiansburg to the mouth of the Greenbrier.....	77½ "
	278½ "

Making a distance of 7½ miles in favor of the Lynchburg route. On this route the grades are 60 feet per mile, opposing the heavy trade, and 68 feet with it—while on the Covington and Staunton route, there are grades of 105 feet per mile, both ways—five continuous miles of it on the eastern slope, and 1½ on the western slope of the mountain. This last may be substituted by 2 miles of 92 and 4-10ths feet per mile, but of course the expense would be increased.

This feature would alone enable the Lynchburg line to compete successfully with the Central railroad for all the tonnage offered for transportation between the mouth of Greenbrier and the city of Richmond. But suppose this western trade, or any portion of it, to be destined for Petersburg or Norfolk, this road would then be 30 miles shorter than the Central to either of these points.

So that the Lynchburg route is the shortest for all three of the towns on the lower James river, and a trade sufficient to increase them all three, beyond the most sanguine expectations of their friends, and build them up into large cities capable of entering into competition with the great markets of the north would be secured to them and carried out of the reach of Baltimore. With a railroad from Staunton to Winchester, it would not be difficult to predict where all the tonnage brought from New river to Staunton would find a market. There should be no rivalry between the markets of Virginia; if true to themselves, they can all flourish.

Let them lay aside all jealousies, and exert their united strength to complete the shortest, the cheapest, the most efficient, and in all respects the best route to the Ohio river, as well as to the Tennessee line. Let each town and city secure a connection with this great trunk, and there will be a commerce poured down on our eastern border which will fill the measure of their prosperity. Such a system faithfully carried out, would at once erect Virginia with her diversified interests and pursuits into a powerful empire. Let them faithfully investigate the subject, and adopt the best route, which ever that may be. And here let us take another view of this question. It has been shown that the line through Lynchburg gives Richmond the nearest line, with the best grades to the mouth of Greenbrier. The stock is already provided, and a large portion of the work is done, for a road from Richmond to Christiansburg, within 77½ miles of the mouth of Greenbrier. This distance alone remains to be provided for, and will cost at the utmost \$1,545,000.

Now suppose the Central railroad to be completed to a point 10 miles west of Charlottesville, this is within 170 miles of the mouth of Greenbrier, with the Blue Ridge tunnel to go through, and the most favorable estimates ever yet made would warrant us in supposing that there was yet required \$20,000 per mile for this whole distance, or \$3,400,000. Deduct the distance and cost of a road between Christiansburg and the mouth of Greenbrier, and it will be evident that the State must make 92½ miles more of new road, and spend \$1,855,000 more money to construct this road, than would be required to accomplish the very same object by the line through Lynchburg.

In this comparison, the Central railroad has received the benefit of the lowest estimates ever made by any one for it. Major Walter Gwynn, Chief Engineer of the James River and Kanawha canal company, has expressed the opinion in his late report, that it will cost a great deal more. It may be added that the gauge of track on the Lynchburg route gives it a great superiority over the other, and that all of the one is laid with a substantial rail, while most of the distance between Richmond and Charlottesville is laid with a plate rail.

It seems therefore, that though the Central road may be valuable as a local work, and may, in that light, deserve the patronage of the State, there can be no question as to the best route, from the valley of New river to Richmond, being through the Virginia and Tennessee railroad. This question, after all, is of far greater importance to the State at large, and especially to tide water and the country between the mouth of Greenbrier and the Ohio river, than it is to the Virginia and Tennessee railroad company. These distant sections of the State have a deep and vital interest in securing their union by the most certain and efficient method that can be adopted.

To complete this scheme, the road from Petersburg to Norfolk should be finished. Then the road should be extended down the valley of the Kanawha to a point below the mouth of Coal river—thence one branch should extend to the mouth of the Kanawha, continuing across the Ohio River to Chillicothe, where it would intersect the great Cincinnati and Belpre road. Another branch should go to Guyandotte, and be extended to meet the line of roads running from Louisville through Frankfort, in that direction.

It has been asserted that a railroad from Cincinnati to Richmond could not compete with the Baltimore and Ohio road, because the latter is the shortest by a few miles. The distance from Cincinnati, by way of Parkersburg and the railroad, to Baltimore, is 580 miles. The distance by the Virginia Central road, to Richmond, is 600 miles—by the Virginia and Tennessee road, as was shown, the distance is 7½ miles less, leaving only 12½ miles in favor of Baltimore. If we apply to this case the rule generally used for assigning to a certain amount of ascents and descents on a road, the equivalent in distance, we will find the route by Lynchburg to be very greatly the shortest. On the Baltimore and Ohio railroad, there is one continuous grade 12 miles long, of 116 feet per mile. There are many other grades on that road less than this, but still much higher than those on the Virginia and Tennessee railroad. On this road, as before

stated, the limits are 60 feet per mile in one direction, and 69 feet in the other. This would give an incalculable advantage to our line. The Baltimore and Ohio railroad company have tried to obviate the difficulty of these high grades by the use of heavy engines which crushed their track rapidly. The laws of gravity are stubborn facts, which can neither be removed nor overcome. Other things being equal, the expense of transportation on a road will be in proportion as that road approaches or departs from a level. To give a clear idea of the rapid decrease of the effective power of a locomotive, as the grade increases, the following table is given, showing the net weight (in tons of 2000 lbs.), which can be drawn by a twenty-four ton engine, with eight driving wheels, on different grades, from a level to 120 feet per mile.

Grade per m. Level.	10 ft.	20.	30.	40.	50.	60.	70.
Weight.....	616	408	306	212	202	168	144
Grade per m. Level.	10 ft.	80.	90.	100.	110.	120.	
Weight.....	616	408	112	100	90	82	74

Some idea may be formed of the relative cost of transportation over different grades by a glance at this table. The effective power of a locomotive on a grade of 68 feet per mile, is nearly 70 per cent greater than on one of 116 feet per mile. It is clear, therefore, that if Virginia constructs the best road that can be made from the Ohio river to Richmond, and the other Chesapeake markets of the State, that road can compete successfully with the Baltimore and Ohio road for tonnage. But it is of vital importance that Virginia should avail herself of every advantage that nature has given her in such a close contest. With regard to travel, much of it will follow the tonnage; but that which leaves Cincinnati or Chillicothe for Baltimore and points north of it, will not come through Richmond. To apply the above table, in a comparison between the Central and the Virginia and Tennessee railroad, taking 105 feet per mile as the ruling grade on the one, and 68 feet as the ruling grade on the other, it will be found that the locomotive would draw a net weight on the Virginia and Tennessee railroad, about 51 per cent greater than it could draw on the Central railroad.

Mobile and Ohio Railroad.

An abstract of the remarks of Capt. J. Childs, Chief Engineer of the Mobile and Ohio railroad, delivered at Nashville, Tennessee, in the Representative Hall, on the 22d November, 1851.

Capt. Childs said that nature has established in the existing variety of soil, climate, and products of the valley of the Mississippi from the Gulf to the lakes, a division of industrial interests, which strongly invites the people of that valley to institute a perfect and corresponding division of manual labor; by the introduction of the mechanic arts and manufactures, for which their coal, iron, cotton, hemp, flax and unlimited supply of bread stuffs are a sure pledge of success. Commerce depends for success upon the natural and manual divisions of labor, whilst internal improvements serve to concentrate population and capital, until these divisions are made most perfect and productive to both. To extend these improvements therefore, in advance of sufficient settlements and trade to justify their construction, and pay interest upon their cost, for the purpose of building towns, selling wild lands, or of crossing 2,000 miles of uninhabited country to look at the Pacific Ocean, is a delusive and speculative indulgence, both wasteful, and subversive of the first principles of political economy, which require concentration of labor and capital, so long as the wages of human skill and industry can be advanced, and thereby the population, wealth and power of the present States of the Union promoted. Rivers, canals, and steamboats have made wonderful developments in this western world; but the introduction of railways as co-laborers better fitted by speed and safety, for passenger and light merchandise traffic, will stimulate productive industry and trade, to such an extent as to yield far more heavy tonnage, and of profit to steamboat and canal interests, than in other respects they divert therefrom. This is proved since the introduction of railways by the more extensive use and profit of canals, and steamboats, in England, of the New York, Ohio and Pennsylvania canals, of steamboats upon the Hudson, St. Law-

rence, Ohio and Upper Mississippi rivers, upon the northern lakes and along the whole of our Atlantic coast. Everywhere their number and capacity are on the increase. Even the ocean steamers multiply for the trade of those sea ports especially, which are connected extensively with the interior by long lines of railway. The cities of the south cannot create commerce at their respective ports by building steamers or sailing vessels. It is the free, speedy, and daily connection with the producing millions of an extensive interior, country that can give them a large and miscellaneous exchange-trade. This connection secured by canals and railroads, then ocean vessels will come fast enough without our aid. In Europe and America under the influence of the economical principles above stated, upwards of 18,000 miles of railways are now in operation, and half as many more chartered and in progress of construction. As labor saving machines, they are unrivalled, producing to their owners a sufficient return for the capital expended, and to 120,000,000 of people who enjoy their use, a reduced cost of the labor performed, and of the commodities furnished them for consumption, concurrently with the demand of at least 100,000,000 of dollars per annum.

Railways are of two classes—the first class consists of long lines connecting the interior with tide-water. The second class of branch, or cross roads, for lateral and local purposes, but in most cases valuable tributaries to the first class lines, or to the rivers. The first class, or tidal lines, are vastly the most important to the prosperity of the country, and should receive the earliest concentrated efforts of the people in their construction. Both individual and public economy require that their course should be as direct as possible, length and grade reduced and cost moderate. These features can be attained for roads in the Mississippi valley in greater perfection than in any other part of the world, and ought not to be sacrificed to local, or speculative interests, which often seek to warp a line of road from its true course. Instances of this sort of influence are seen on many of the roads of the United States. The most prominent of which are, the New York and Erie railroad terminus, 25 miles above New York city, upon the Hudson river; the termini of the Baltimore and Ohio road at Wheeling, Va., and Mt. Clare, Baltimore, instead of Parkersburg, Va., and at the water of the Bay of Washington, at Richmond, Petersburg and Augusta.

The Mobile and Ohio road has been located entirely free from such derangements, consulting first of all the general good. 3500 miles of surveyed lines have been run to determine the route, lowest grades and least cost—

	Miles.
Its length in Alabama is.....	62½
“ “ Mississippi is.....	273
“ “ Tennessee is.....	119½
“ “ Kentucky is.....	39½

Total main line.....	494½
Length of branch to Tennessee river in Mississippi.....	15
Do. in Tennessee.....	8

Total main line and branch.....	517½
The main line passes 4 miles west of Purdy, and through McNairy county.....	34 7-10
Corner Henderson county.....	1 8-10
“ Madison (near Jackson),.....	31½
“ Gibson (near Trenton).....	29
“ Obion county.....	22½
Length from Mobile to Tennessee river.....	346
“ estimated, from Tennessee river to Columbia.....	92
“ from Columbia to Nashville.....	42
Total length, Mobile to Nashville.....	480

Thirty-three miles of the Mobile end of the road will be in complete operation by the 15th of February next. Forty-nine acres of ground for depots have been obtained at Mobile, with two wharves and right to run tracks through the commercial streets, that the cars may run to the warehouses or vessels of consignees. Vessels drawing 10 feet water are the largest that ordinarily come up to the city. All larger vessels anchor 16 to 25 miles below in the Bay, where there is 30 square miles of

water, 2 to 9 fathoms deep. On the bar between this anchorage ground and the Gulf, there is 20½ feet water at mean low tide. On the bar at the South East Pass of the Mississippi river, there is at mean low tide 15½ feet. Difference in favor of Mobile Bay 4½ feet. The Mobile and Ohio road will be extended to this deep water, and thus the cars brought along side of vessels of 40 per cent greater capacity than can get to New Orleans.—

The export and import freights by these larger vessels will be cheaper, and relieved from all charges for lighterage, or towage. Vessels from the Atlantic ocean, the West India islands, or the Caribbean sea, will generally make Mobile bay a day sooner than New Orleans; and the exchange trade of Tennessee and Kentucky, with the southern and western portions of the globe, will thus prosper at Mobile bay, via the two arms of the Mobile and Ohio road. Whilst the same trade with Europe, and the North Atlantic States of our own country, will for like reasons thrive at Charleston and Savannah, via the Nashville and Chattanooga road. The great office of railroads is to liberate men, whenever desirable, from the obstructed natural channels of commerce, and by equalizing prices, supply and demand; break up the spirit of monopoly, domination and speculation of such cities as New York and New Orleans.

At the mouth of the Ohio it will connect with all the steamboats of the Mississippi and Ohio rivers, also with 1440 miles of railroads, at the bend of the Tennessee with the boats of that river, and thence by a central line of road, via Nashville, to Louisville and Cincinnati, with 1523 miles of railroads at Louisville, and 3500 miles of railroads at Cincinnati. Thus forming two great routes from the Gulf to the lakes; one ending at Chicago, the other at Cleveland, and connecting thence by railway with Baltimore, Philadelphia, New York and Boston. These two routes traverse 104 degrees of latitude, and connecting with steamers to Lake Superior on the north, to the Caribbean sea on the south, will form a quick transit for passengers and for the interchange of the various products of 38 degrees of latitude; from Chagres and Trinidad to the north shore of Lake Superior, and thus create and stimulate an external and internal commerce far greater than can be promoted by the river channels alone.

The middle ground of this internal commerce will be central, and Western Tennessee, where are combined the staple products of the south and north, with a temperate and healthy climate, water power, rich soils, iron, coal, beautiful marbles, limestone, and a variety of valuable timbers; all that can be needful for the prosecution of the mechanic arts and manufactures, except a system of railways, by which the products of all branches of industry within the State can be distributed north, east, south and west, and spread broad-cast for general consumption. The first class roads that will most perfectly form this system, are the two north and south routes above named—the Nashville, Chattanooga and Western—the Charleston and Memphis, and the Eastern Tennessee and Virginia lines. These five roads severally invite the aid of the State to the extent of furnishing the iron and machinery when the people shall have provided for or executed the local work of grading, etc.—They are all long lines, (650 to 1000 miles,) drawing the trade of other States into and through Tennessee, and cannot fail to be eminently successful; while second class short roads, for local purposes, as branches to these long lines, or as tributaries to rivers, may fail to be profitable, and should be let alone until the long lines are completed; they will then, by the increasing prosperity of the people, and the aid of the long lines, come into existence as naturally and fruitfully as branches grow from trees.

New York, Massachusetts, Pennsylvania, Maryland, Virginia, North Carolina and Georgia have severally assisted their citizens in building long first class routes, either by a subscription of stock, a bonus, a loan of credit, or by separately building the more difficult portion of the work, and with satisfactory results.

By the road from Mobile to the Tennessee and Ohio rivers, and by the other railroads connecting therewith, the following distances and running

time of trains will be found nearly correct. From Mobile.

	Miles.	Freight.	Passeng.
To Jackson, Miss.,.....	221	20	9
" Vicksburg, ".....	268	23	11
" Bend of Ten river....	346	29	15
" Memphis, Tenn.,....	128	36	18
" Jackson, ".....	384	32	16
" Trenton, ".....	409	31	17
" Columbia, ".....	432	36	18
" Nashville, ".....	480	40	20
" Huntsville, Ala.,....	450	38	19
" Mouth of Ohio, R.,....	494	41	20½
" St. Louis, Mo.,.....	775	65	33
" Louisville, Ky.,.....	700	59	30½
" Cincinnati, Ohio,....	800	68	34
" Cleveland, ".....	1056	90	45
" Chicago, Illinois,....	875	71	36½
" Baltimore, Md., via Nashville and Cincinnati,.....	1445	144	62

The total estimated cost of the Mobile and Ohio railroad, including the branch to Tennessee river, is ten millions of dollars, of which five millions is for local works, and five millions for iron rails, chairs, spikes, cars and engines. The local work on 127½ miles in Tennessee is one million and sixty thousand dollars; for iron rails, etc., as above, one million thirty-five thousand dollars.

Average cost per mile of local work.....	\$8,313
" " " of rails, etc., at the present prices of iron.....	8,120
To build the whole road in three years, the present subscription of Mobile furnishes—	
For local work.....	\$600,000
The new tax law do.....	1,100,000
Present subscription of Miss., do.....	1,000,000
To be obtained in Mississippi, this winter, after the company law is altered, dividing the stock among the tax payers.....	740,000
Present subscription in Tenn.....	150,000
To be obtained in Tennessee.....	910,000
" " in Kentucky.....	500,000
Total.....	\$5,000,000

In this sum are included \$50,000 and \$100,000, respectively, for depots at the Tennessee and Ohio rivers.

The rates of charges for passengers and freights on the Mobile road, will incline to the low fare system. For passengers 2 to 3 cents per mile; for heavy, low priced products of fields, forests and mines, and groceries, 1½ to 3 cents per ton per mile; for merchandise generally, 3 to 5 cts. per ton per mile; for cotton from Tennessee to Mobile, 1-50 to \$2.50 per bale.

With fixed rates of transportation, and the prices current received each day by the passenger trains from Charleston, Mobile and New Orleans, the merchants of the interior can buy the entire crops of the country without risk; sending on one purchase after another for quick sale—import their own goods—and, in buying and selling constantly, in both directions, turn a profit on their capital twelve times a year. Tidal railways are the virtual extension of the city wharves throughout the land, and enable the merchants (of Nashville, for instance) to import and export for the country around with great facility.

By the time the Mobile road can be completed to the Tennessee and Ohio rivers, low pressure steam packets, built for passengers alone, will be prepared to run in connection with the road from New Orleans to Mobile, and from St. Louis and Louisville to the Ohio terminus. The latter will be long, light and swift, drawing so little water as to run in the lowest stages of the rivers. By such packets, and the railroad, passengers can be conveyed in safety from St. Louis to Mobile in 36 hours, for \$12; from Louisville to Mobile in 47 hours, for \$13; and from Mobile to or from New Orleans in 12 hours for \$3.

When the route from the bend of the Tennessee to Louisville and Cincinnati shall be completed, connecting with the Chattanooga road at Nashville, the Southern travel of Louisville and Cincinnati, and of the 5,000 miles of Northern and

Eastern railroads which center at those cities, will come via Nashville. But before this shall be done, the Mobile road cannot fail, by its junction with the Tennessee, Ohio and Mississippi rivers, with the central Illinois road, and thereby, with the traffic of the railroads and lakes of the North, to have an immense business. The ease and safety it will afford for people to escape in winter, in a few hours from the cold blasts of the North to the temperate breezes of the South, or in summer, from the heat and sickness of the South, to the bracing airs of the North, will enlarge its travel, both through and way, beyond any present calculation. Based, however, upon low rates, upon one-third of the passengers that now pass annually up and down the Mississippi river to and from the Northern States, and upon carrying way passengers equal to one-third of the white population of the country adjoining the route, which is the first average experience of other railroads of our country, we shall have the following direct income, viz:

From 125,000 through passengers, at \$8.....	\$1,000,000
From 110,000 way-passengers, at \$2....	220,000
" through freights of merchandise, live stock, bread stuffs, &c.....	842,000
From way freights of do. do. do.....	738,000
" United States mails.....	90,000
Total income.....	\$2,890,000
From which deduct all expenses for depreciation of tracks, repairs, and working the roads.....	1,445,000
Total nett earnings.....	1,445,000
From which pay interest on five millions loan, 7 per cent, including exchange	350,000
Pay for additional cars, engines, side tracks, and buildings for increasing business.....	200,000
Pay 15 per cent. dividend on stock for local work of \$5,000,000.....	750,000
Total for interest, construction, and dividend.....	\$1,300,000
Leaving a surplus for contingencies or sinking fund of.....	145,000

The relation of the Mobile road to New Orleans is one of deep interest to the people of that city.—After comparing very complacently their own position and power with those of their neighbors at Mobile, they naturally concluded, as they had once tried and failed to build a road to Tennessee, that Mobile could only dream of constructing one to the Ohio river. But notwithstanding her incredulity, Mobile persevered in the work, and in two years from the commencement of the surveys, public sentiment pronounced it sure to succeed.—Whereas, New Orleans takes the field, without charters, surveys, or stock subscribed, lectures the people of Mississippi and Tennessee upon their several interests, and upon her own natural but aqueous rights, and calls upon them to come up in January next and give an account of their doings.

Now, the spirit of domination, of frightened monopoly, or of rivalry, indicated by this unsubstantial movement, places New Orleans in a false position, unjust to herself and to her neighbors. Why should she seek to divert the attention of the people from the Mobile and Ohio road, by declamation and airy promises, two years at least before she can by legal authority and surveys lay a specific plan before them for a road to New Orleans? Mobile can have her road done by the time New Orleans gets fairly into the field, and it will be conveying passengers between the Ohio river and N. Orleans, via Mobile, in one third of the time now required by the river. She therefore, should stand its friend, and not as an enemy. The people must have better avenues to market than by the river channels, which are never right when most needed; and however much a general convention may help to draw out the latent energies of New Orleans, it never can satisfy thinking men that two or three markets within reach are not better than one. Yet much important information will be elicited by it, a few items of which I here submit for the consideration of the people of North Mississippi, Tennessee, and Kentucky, showing where is their shortest and cheapest route to tide water. The

bend of the Tennessee river and its vicinity presents some attractions for three long lines of road, Charleston and Memphis; Mobile, Nashville, Louisville and Cincinnati and Mobile and Ohio. May not New Orleans desire to connect herself to these roads in the same vicinity? And if so, what will be the comparative distances to New Orleans and Mobile?

Route across lake Pontchartrain, from bend of Tenn.....428 miles.
From do. to Mobile,.....346 "

Difference.....82 "
And two transshipments.....
Route west of lake Maurepas,.....453 miles.
To Mobile as before,.....346 "

Difference.....109 "
Route via bank of Mississippi, and river Amitie,.....473 miles.
To Mobile as before,.....346 "

Difference.....127 "

New Orleans is 110 miles from the Gulf; Mobile, 33; 77 miles difference. Add this to the above differences, and 169 to 204 miles (according to the route taken for the New Orleans road) will be the greater distance from North Mississippi, Tennessee, and Kentucky, to the Gulf, via, N. Orleans.—Will the interior planting and commercial interests willingly pay the expenses of this extra distance upon their exports and imports? But the position of New Orleans, with ten thousand miles of navigable rivers, and five hundred steamers pouring the products of six millions of people into her lap, is superior to any other city on the globe, especially, as these six will rapidly swell into sixty millions and send her the greater portion of the products of one and a half millions of square miles.—Thus situated, can N. Orleans envy Mobile, Charleston or Savannah, or any other section of country, that strives to better its condition by artificial channels of trade? No. She will not so dishonor herself. Let her rather enter the same sphere of enterprise. This field is wide before her—too wide for petty and contemptible jealousies.

The "gauge" of a railroad is the width between the rails of the track. When two roads come together, differing in gauge, the cars and engines of one cannot pass upon the other, and transshipment of goods and passengers must be made. The Mobile road gauge is five feet, the same as the Chattanooga road. All roads within the State of Tennessee should be required by law to adopt the same; that cars from Charleston, Mobile and New Orleans, can run to any and all ports of the State. The lines hence to Louisville and Cincinnati should also be same.

Let any man review this matter with the United States map before him; trace the Mobile and Ohio road to the Tennessee river; its two great arms through west and central Tennessee, and its connecting lines North, East, and West with all the large cities, and rivers of the Union, and he cannot avoid the conviction, that it will command more business, and revenue in proportion to length, than any other road in the Western World. Not forgetting at the same time, that the donated lands from the United States, will, when sold, pay 40 per cent. of its entire cost.

Ohio and Mississippi Railway.

The Board of Directors of the Illinois company having in charge that portion of the railway from Cincinnati to St. Louis, that lies between the latter city and Vincennes, have just closed a laborious session at St. Louis. Some of the results of their labors are given in the St. Louis Republican. The right of way has been relinquished by all the owners of land along the line with few exceptions, and these mainly because of some legal disability. The probable cost of these relinquishments will not exceed three thousand dollars. The people appreciate the benefits of the road, and freely give the right of way, and in some cases donate the ground required for stations. The route adopted is from Illinoistown to Careyville, Lebanon, Carlyle, Salem, Olney, and Lawrenceville to Vincennes, as surveyed by E. Gest, and by him recommended as the best, shortest, and cheapest route. This loca-

tion is said to be satisfactory. Sydney Bresse has been chosen a Director in the place of B. Bond, resigned. The Republican expresses its gratification at the decision and promptness of the directors, in taking the necessary steps to get the road fairly under way at the earliest possible period. The people along the line being now satisfied that the road will be built, will lend it a helping hand.—*Cin. Gazette.*

Railroad Convention.

At a meeting of delegates appointed by the several counties of Christian, Hopkins and Henderson, and the city of Evansville, Ia., convened on the 8th of Nov., 1851, at Madisonville, Ky., for the purpose of adopting such measures as are best calculated to forward the construction of a railroad from Henderson to Nashville, Samuel Woodson, Esq., was elected President and C. M. Pennell and John C. Noble were appointed Secretaries.

On motion, John Ingle, Esq., and Hon. James Lockhart, of Evansville, Ia., Dr. F. G. Montgomery and J. P. Campbell, of Christian, John P. Cook, Esq., and J. F. Wilkins, of Hopkins, and Dr. Wm. Brewster and R. G. Beverly, of Henderson, were appointed a committee to draft and present resolutions for the action and adoption of this meeting.

During the retirement of the committee, Col. E. H. Hopkins, by request, addressed the meeting in a forcible speech, showing the great natural resources of the country through which the road is to pass, and the importance of constructing this link to complete the great chain of railroads from the extreme north to the extreme southern limits of the country. At the conclusion of said speech, the committee on resolutions reported the following, which after being ably discussed by Messrs. Ingle, Lockhart and others, were adopted unanimously:

Resolved, That the early construction of the Henderson and Nashville railroad is necessary to the future prosperity of Southern Kentucky, and to preserve her relative position in the state amongst the surrounding communities, and that by concert of action in the towns and counties through which it is to pass the prospect is, in the opinion of this convention, entirely practicable.

Resolved, That as one link in a chain of railroads connecting the Northern lakes with the Southern and southeastern cities and the seaboard, this road when built, cannot fail to be a main artery of trade and travel, and one of the best paying roads in the country.

Resolved, That the commissioners appointed by the charter passed at the last legislature of Kentucky to open books for the subscription of stock in said road, be requested to use every effort to secure a sufficient subscription of stock for an early organization of the charter.

Resolved, That said commissioners be requested to take the necessary steps, by public speeches, circulars, or otherwise to lay statistical information before the people interested in the enterprise.

Resolved, That Col. E. H. Hopkins, James Alves and Dr. Wm. Brewster be, and they are hereby appointed a committee to procure the necessary legislation by the Kentucky Legislature now in session, to enable the counties, towns, and other corporations to subscribe stock in said road and to provide means for the payment of such stock; and that they also procure from the legislature of Tennessee, now in session, the necessary legislation for the construction of the said road from the Kentucky State line to the city of Nashville.

Resolved, That Dr. F. G. Montgomery, Dr. Wm. Miller and C. M. Pennell be, and they are hereby appointed a committee to procure the services of one or more gentlemen to canvass the counties between Henderson and Nashville in favor of the construction of said road; and that we recommend to the several counties the appointment of four speakers for each county to co-operate with the speaker or speakers selected by the committee.

Resolved, on motion, that the banks of this convention be tendered to the Chairman for the able and impartial manner in which he has presided over its deliberations.

Resolved, on motion, that the American Railroad Journal, and the several papers published at the city of Evansville, Ia., Russellville, Henderson, Hopkinsville, Clarksville, and Nashville be re-

quested to publish the proceedings of this meeting.

The Convention then, on motion, adjourned *sine die*.

SAMUEL WOODSON, Ch'n.

C. M. PENNELL,
J. C. NOBLE, } Secretaries.

Ohio and Pennsylvania Railroad.

The portion of this road between Salem and Alliance, a distance of thirteen miles, was opened for public use on Thursday, the 27th ult. The citizens of Salem got up a very spirited celebration on the occasion, and invited the officers of the company to a supper in the town hall, at which speeches were made by Gen. Robinson, the President, Mr. Roberts, the Chief Engineer, and others. The arrival of the passenger cars at the station in Salem was greeted by a very large concourse of people, and as many as the cars could carry, including a large proportion of ladies, were afterwards treated to a ride to Alliance and back. No accident occurred to mar the pleasure of the day, which will long be remembered in the annals of Salem.

The cars now run regularly, leaving Alliance at 8 o'clock, and Salem at 9 in the morning.

The express train between Pittsburg and Enon, runs with great regularity, and carries a large quantity of passengers. In about a week the cars will run to Palestine, 49 miles from Pittsburg.

Notwithstanding the unfavorable weather, the track layers are rapidly filling the gap in the line, which is now supplied by stages; and before the close of December we expect to have a continuous line of railroad from Pittsburg to Cleveland.—*Pittsburg Gaz.*

Illinois.

Central Military Tract Railroad.—The line of this road extends from Clayton, on the Northern Cross road, from Springfield to Quincy, to the line of the Rock Island road, in Bureau county, a total distance of about 125 miles. It will constitute, in connection with the Rock Island road, a very direct route from Quincy to Chicago. The first division of the road from Galesburg, on the route of the Peoria and Oquawka railroad, to the Rock Island road a distance of fifty miles, is to be let on the 24th instant.

In speaking of this project the Chicago Tribune says:—

The whole of the Central Military Tract railroad will traverse the high table lands between the Illinois and Mississippi rivers, equidistant from those streams, and will open up a channel of commerce through one of the most fertile and otherwise highly favored portions of the State. As a feeder to the Chicago and Rock Island road, with which it will connect west of Peru, and as furnishing another channel of communication to the Mississippi river (at Quincy), this road is of great importance to Chicago, and furnishes another to the already numerous sources of the vast tide of commerce which is to centre here.

South of Galesburg the people are moving in this matter, and doubtless before the road is completed to that point, the means will have been secured to continue it to Clayton, at which place it will connect with the Northern Cross railroad. On the 6th and 7th inst., meetings were held in Macomb, McDonough county, at which addresses were delivered by some of the most influential citizens of middle Illinois, among whom were C. A. Warren, R. S. Blackwell, B. R. Hampton, James M. Campbell, Esqrs., and Gen. Darnell. The following resolutions introduced by W. T. Head, Esq. of Macomb, were unanimously adopted:

Resolved, That we regard the proposed railroad from Galesburg to Clayton, as the most eligible route for a road, and more beneficial than any other enterprise that could at this time elicit the energies and means of the citizens of McDonough county.

Resolved, That we will in every way encourage the commencement and completion of the road by all the means at our command.

Resolved, That the growing prosperity of McDonough and adjacent counties now require as a

means of transportation of the increasing surplus of the country, a railroad from the town of Galesburg to the town of Clayton.

Resolved, That this meeting respectfully request the county court, of McDonough Co., to cause to be submitted to the people of said county by an election at some convenient and suitable time, the question whether they will vote a tax for the purpose of subscribing \$50,000 to the proposed railroad from Galesburg to Clayton.

American Railroad Journal.

Saturday, December 13, 1851.

Illinois Central Railroad.

The recent survey of this route makes the whole length of line to be built 699 miles, of which will be straight line, 626.77 miles; of radii from 1,500 to 2,000 feet, 5.40 miles; of radii from 2,000 to 3,000 feet, 12.28 miles; of radii from 3,000 to 4,000 feet, 21.26 miles; of radii from 4,000 to 5,000 feet, 15.06 miles; of radii over 5,000 feet, 14.63 miles. Showing about 10 per cent of curved lines, and these mostly of large radii.

The gradients are as follows: Level, 238.29 miles; ascent less than 10 feet per mile, 113.60 miles; ascent from 10 to 20 feet per mile, 118.19 miles; ascent from 20 to 30 feet per mile, 89.05 miles; ascent from 30 to 40 feet per mile, 132.48 miles; ascent of 42 feet per mile, 7.50 miles. Total, 699 miles.

The 42 feet grade occurs in ascending the Fever river, from Galena east to Scales Mound.

Mr. Mason estimates the cost of the whole road with the equipment at \$16,537,212. His estimates include the following items, viz:—21,428,523 cubic yards embankment. 369,951 cubic yards rock excavation; 222,206 cubic yards masonry; 10,228 feet bridging, etc.; 735 miles superstructure, rails, etc.; 40 passenger stations and houses. 40 freight stations and houses; 70 locomotives and tenders; 70 passenger cars; 20 baggage cars; 700 box freight cars; 600 platform cars; 200 cattle cars; and also right of way, land and damages, fencing and engineering expenses, engine houses, machine shops, woodsheds, water tanks, tools and machinery for shops, and furniture for station houses, etc.

The company estimate the value of their land, granted by Congress, at \$18,150,000. They propose to issue bonds to the amount of \$17,000,000, based upon the lands and a mortgage of the road. The estimated net income of the road is put down at \$1,774,252, equal to 7 per cent upon about \$26,000,000.

If the above estimates are correct, the project will prove a very good speculation to those who have control of it. They get a bonus of \$26,000,000 for building the road, which we presume will be at least \$1,000,000 to each of the persons now interested. The bounty of Congress will inure, as it generally does, to those who have wealth to control its direction. The course that the Illinois grant has taken, will, we fear, prejudice the claims of more deserving companies, for aid for similar projects.

But there is another view of the case. The company wish the public to furnish the means necessary to build the road, while they pocket the profits. What if the public should not take these bonds, will the company go on with the work with their own means? They have shown no disposition to commit themselves to any considerable amount, until they see how their negotiations in the hands of Mr. Walker are to terminate.

We have no means of forming any opinion as to the probabilities of Mr. Walker's success, than those furnished by the precedents of similar cases. Foreigners do not like to buy our chickens in the egg. They are unwilling to assume the risk of the proper application of the money necessary to build railroads, which are 3000 miles off, and over which they have no control. After our roads are completed a sufficient time to make a good show of earnings, they are willing to take hold sparingly, but even then, they do not wish to invest large amounts in one line. We must add to this the fact, that John Bull, is the least inclined of all European nations, to take our railroad securities. He has already lost \$500,000,000 in railroads at home.—And it will be difficult to convince him, that we manage any better, or that we shall be more successful. Illinois is an unfortunate field in which to invite him to a feast, after all the losses the English capitalists have sustained there. He will be very likely to insist that the old score shall be made good before he will lend any more to new projects. Our best bonds of finished roads are not popular in England. This being the case those of proposed lines will hardly sell at any rate. The Germans and French have much more confidence in our railroad securities and they take most of those sold on foreign account.

The above are our reasons why we are inclined to believe that Mr. Walker will not succeed. But he may, notwithstanding, he is an able man, and popular in England, and the best that could be sent upon such a mission. If he succeeds the road will move ahead. If not, what will become of the projects. *nous verrons*.

We believe that the company committed a serious blunder in the outset. Before they went into the market to borrow money, they ought to have commenced work, and by so doing, to have shown their confidence in the enterprise, by investing a large amount of their own money. Other companies can obtain money upon no other terms.—Capitalists base their confidence in our enterprise, mainly, upon that displayed by those in charge of it. If those immediately interested are willing to risk nothing, but little can be expected from those that are not. If the Illinois Central Co., had but completed 100 miles of railroad, they would have found no difficulty in borrowing sufficient to build 100 miles. They will find it a much more difficult task to borrow for the first hundred.

We knew nothing of their affairs. They may have already secured the loan, notwithstanding our doubts, to the contrary. We hope to see the road built. It would prove a most useful work to the country. Upon this ground we did all we could to effect the passage of the bill to which secured the magnificent gift of 2,500,000 acres of land; though we will confess, that our co-operation to this end would have by no means been so hearty, had we foreseen the that it would probably conduce much more to private aggrandizement, than to public good.

Air Line Railroad.

We are happy to learn that \$1,000,000, the sum required to commence work on this road, have been subscribed. This secures its completion beyond a doubt. Operations will be commenced at once, and will be vigorously pushed forward till the road shall be completed.

The above is very gratifying intelligence. The Air Line railroad, after a long series of trials and defeats, has reached a point where success may be regarded as a fixed fact.

Virginia and Tennessee Railroad.

We give in another column such portions of the recent report of the Chief Engineer of this road, C. F. M. Garnett, Esq., as is of especial interest to the public. We are gratified in being able to give so favorable an account of the progress of this important work, in which so large a portion of the country is interested.

It will be seen that the company propose to construct a branch from their line to the mouth of the Greenbrier river, on the Kanawha. They claim that their route is the shortest and best in Virginia, by which the mountains can be crossed.

The gauge of the Virginia and Tennessee railroad is 5 feet, to adapt itself to the gauges of the the roads in Georgia, Alabama, Mississippi and Tennessee. The 5 feet gauge is as universal at the south as the 4 feet 8½ inches is at the north.

Illinois Central Railroad.

It is confidently reported that the last steamer brought intelligence that Mr. Walker is likely to succeed in his mission. It is stated that the loan will be taken by the Rothschilds.

Canada.

The government, or railroad party, have triumphed in the recent elections in Canada. Hon. John Young, the leading internal improvement man in the Provinces, and known to favor the Halifax scheme, has been returned from Montreal, which is a favorable indication for that project.

We regard the success of this road as certain, so far at least as obtaining the money is concerned.

Stock and Money Market.

We have but little alteration to note since our last. Money is sufficiently abundant for all ordinary business operations, but scarce for purposes of speculation, and is obtained with difficulty for unfinished works. The bonds of roads in operation, and which make a good show of earnings, are in demand to a considerable extent for investment on foreign account. Our best customers abroad are the Germans and French, who are investing largely in our best securities.

Western securities are attracting the most attention, from the low price at which they are selling, and the confidence felt in their rapid rise after the roads shall have been in operation a sufficient length of time to illustrate their capacity for business. We believe that every western road now in operation has been completely successful, and that their stocks and securities have advanced regularly and steadily in this market, from the period of their first sales. Purchasers, in addition to securing a good interest on their investments, have realized a handsome premium by the rapid advance of their securities.

Railroad companies will find it to their interest not to force their bonds upon the market before the opening of their works. Where a road is completed, the purchaser can estimate the value of his security; but if he invests where the work is in progress, he, to a certain extent, is obliged to guarantee the faithful application of the money, after it has passed from his control.

We have become so accustomed to the exportation of specie, that the shipment of large amounts has ceased to excite much alarm. Our exports last week exceeded \$2,500,000. They will be very small this week.

On the whole, we regard the prospects ahead as favorable. We believe that most of our roads in progress will be able to borrow on not very exhor-

bitant terms, sufficient means to carry forward their works. Money will continue to command a high rate of interest, but it can be had for all legitimate enterprises.

The receipts of Morris canal, for week ending 29th ult., being 34th week of 1851, were \$2,443 33
Same week last year..... 2,704 65

Decrease 34th week, 1851..... \$261 32
Total receipts to above date, 1851..... 108,849 02
Do. do. 1850..... 95,813 38

In favor of 1851..... \$13,035 61
The amount of coal transmitted by the Delaware and Hudson Canal Co., from Nov. 29 to Dec. 8, was..... 23,080 tons.
Quantity previously received..... 768,020 "

Total..... 191,100 "
Received during the season of 1850..... 513,353 "

Increase this year..... 247,747 "

Cleveland, Columbus and Cincinnati Railroad.—A cash dividend of four per cent. on the capital stock has been declared for the last six months.

Receipts for November, \$57,264 11. For six months ending December 1st, \$343,501 34.

Number of passengers arrived over the road, 101,732.

The annexed table shows the foreign Imports and Exports of specie and bullion since 1821. In 1850 and 1851 the receipts of gold dust from California were considered as domestic imports, and are not included in the statement below.

Year.	Imported.	Exported.
1821.....	\$5,064,890	\$10,478,059
1822.....	3,369,846	10,810,180
1823.....	5,097,896	6,372,987
1824.....	8,379,835	7,014,552
1825.....	6,050,765	8,797,055
1826.....	6,880,966	4,764,533
1827.....	8,151,130	8,014,860
1828.....	7,489,741	8,243,476
1829.....	7,403,612	4,924,020
1830.....	8,155,964	2,170,773
1831.....	7,305,945	9,014,981
1832.....	5,907,504	5,656,340
1833.....	7,070,368	2,611,701
1834.....	17,911,632	2,076,758
1835.....	13,131,447	9,477,775
1836.....	13,400,881	4,324,336
1837.....	10,516,414	5,976,249
1838.....	17,747,116	3,503,016
1839.....	5,595,176	8,776,743
1840.....	8,882,813	8,417,014
1841.....	4,988,633	10,034,232
1842.....	4,087,016	4,813,539
1843.....	22,320,335	1,520,791
1844.....	5,830,429	5,454,214
1845.....	4,070,242	8,606,495
1846.....	3,777,732	3,905,268
1847.....	24,123,289	1,907,738
1848.....	6,360,424	15,841,620
1849.....	6,651,240	5,404,648
1850.....	4,628,792	7,522,994
1851.....	4,967,901	29,231,880
Total.....	\$268,417,774	\$222,621,923

Excess of imports, \$45,795,851. To this should be added about \$40,000,000 received in two years from California.

The tolls on the Delaware canal at Easton, for the year ending 30th November, were \$204,352, against 173,650, same time last year.

Columbia Railroad.—The following table shows the collections at this office:

Amount as per last report.....	\$358,243 13
Amount to 30th November, 1851.....	34,521 51
Whole amount since 30th Nov., 1850.....	392,764 64
Same time last year.....	359,647 18
Increase.....	33,117 46

United States Mint.—The annexed statement shows the operations of the United States Mint, at Philadelphia, for November:—

Gold.	Pieces.	Amount.
Double Eagles.....	228 217	\$1,564,340 00
Eagles.....	24,640	246,400 00
Half Eagles.....	38 256	191,280 00
Quarter Eagles.....	105 404	263,510 00
Gold Dollars.....	216,079	216,079 00
Total.....	612,596	\$5,481,609 00
Silver.	Pieces.	Amount.
Half Dollars.....	12,000	\$6,000 00
Quarter Dollars.....	62,000	15,500 00
Dimes.....	137,000	13,700 00
Half Dimes.....	60,600	3,000 00
Three Cent Pieces.....	500,200	15,006 00
Total.....	1,384,296	\$5,534,806 00
Copper.	Pieces.	Amount.
Cents.....	193,124	\$1,931 24
Total.....	1,577,420	\$5,536,796 24

Gold bullion deposited for coinage from 1st to 30th November, 1851, inclusive:

From California.....	\$5,390,000
Other sources.....	60,000

Total..... \$5,450,000
Silver bullion deposited in same time... \$20,800
A large supply of small gold coin remains on hand beyond demands of depositors.

Railway Share & Stock List;

CORRECTED WEEKLY FOR THE
AMERICAN RAILROAD JOURNAL.

NEW YORK DECEMBER 13, 1851.

GOVERNMENT AND STATE SECURITIES.

U. S. 5's, 1853.....	101½
U. S. 6's, 1856.....	103½
U. S. 6's, 1862.....	110½
U. S. 6's, 1862—coupon.....	114½
U. S. 6's, 1867.....	116
U. S. 6's, 1868.....	115
U. S. 6's, 1868—coupon.....	122½
Land Warrants.....	140a145
Arkansas 6's.....	52a53
Alabama 5's.....	91a92
Indiana 5's.....	85
Illinois 6's, 1870.....	65a68
Kentucky 6's, 1871.....	104a106
Massachusetts sterling 5's.....	105a106
Massachusetts 5's, 1859.....	100½
Maine 6's, 1855.....	103
Maryland 6's.....	102½
Michigan.....	—
Mississippi.....	—
New York 6's, 1855.....	103½
Ohio 6's, 1860.....	109
Pennsylvania 5's.....	91

RAILROAD BONDS.

Atlantic and St. Lawrence, 6 per cent.....	85
Baltimore and Ohio, 1867.....	94½
Boston and Providence 6's, 1855.....	101
Boston and Worcester 6's, 1855, convertible.....	107½
Bost., Concord and Mont. 6's, 1860, mortgage.....	87½
Cheshire 6's, 1860.....	91½
Connecticut River 6's, convertible.....	89
Erie 7's, 1859.....	101
Erie 7's, 1863.....	106
Erie income 7's.....	94½
Hudson River 7's, 1853.....	101½
Michigan Central, convertible, 8's, 1856.....	104½
New York and New Haven.....	100½
Norwich and Worcester, mortgage, 1860.....	80a85
Old Colony, 1854.....	97½
Ogdensburg 7's, 1859.....	93½
Portsmouth and Concord.....	80a85
Passumpsic 6's, 1859.....	94½
Rutland 7's, 1863.....	90
Reading mortgage, 1860.....	78
" " 1870.....	70
Sullivan, mortgage 6's, 1855.....	67
Vermont Central 6's, 1852.....	90
" " 6's, 1856.....	85
Vermont and Massachusetts 6's, 1855.....	84

RAILROAD STOCKS.

[CORRECTED FOR WEDNESDAY OF EACH WEEK.]

	Dec. 10.	Dec. 3.
Albany and Schenectady.....	89½	95
Atlantic and St. Lawrence.....	60a65	—
Androscoggin and Kennebec.....	30a35	—
Boston and Maine.....	106½	105½
Boston and Lowell.....	108	109
Boston and Worcester.....	103½	103½
Boston and Providence.....	90	89½
Bost., Concord and Montreal.....	35	35½
Baltimore and Ohio.....	67½	—
Baltimore and Susquehanna.....	34	—
Cheshire.....	47	45
Cleveland and Columbus.....	—	—
Columbus and Xenia.....	—	—
Camden and Amboy.....	—	—
Connecticut River.....	60	—
Delaware and Hudson (canal).....	99	100
Eastern.....	99½	99½
Erie.....	86½	87½
Fall River.....	97½	94
Pitchburgh.....	111½	110½
Georgia.....	—	—
Georgia Central.....	—	—
Harlem.....	68	67½
Hartford and New Haven.....	122	—
Housatonic (preferred).....	—	—
Hudson River.....	70	70
Kennebec and Portland.....	50a55	—
Little Miami.....	—	—
Long Island.....	15	16½
Mad River.....	—	—
Madison and Indianapolis.....	90	93
Michigan Central.....	105	108½
Montgomery and West Point.....	—	—
Michigan Southern.....	—	—
Manchester and Lawrence.....	82½	—
Morris (canal).....	14	14½
New York and New Haven.....	108½	108½
New Jersey.....	—	130
Northern.....	64½	68
Nashua and Lowell.....	104½	—
New Bedford and Taunton.....	108	—
Norwich and Worcester.....	53	55
Norfolk County.....	15½	15
Ogdensburg.....	29	29½
Old Colony.....	66	65
Passumpsic.....	70½	72
Pennsylvania.....	—	—
Pittsfield and North Adams.....	95	—
Philadelphia, Wilm'gton & Balt.....	29½	28½
Petersburg.....	—	—
Richmond and Fredericksburg.....	—	—
Richmond and Petersburg.....	—	—
Reading.....	59½	60
Rochester and Syracuse.....	111½	111
Rutland.....	40	43½
Stonington.....	51½	44
South Carolina.....	—	—
Syracuse and Utica.....	123½	—
Sullivan.....	15a20	—
Taunton Branch.....	108	110
Troy and Greenbush.....	90	—
Tonawanda.....	—	—
Utica and Schenectady.....	129	127½
Vermont and Canada.....	97	99½
Vermont Central.....	25½	26½
Vermont and Massachusetts.....	26	27½
Virginia Central.....	—	—
Western.....	104½	103½
Wilmington and Raleigh.....	56	—
York and Cumberland (Pa.).....	19½	—

Georgia.

Waynesboro' Railroad.—It affords us pleasure to announce that the Waynesboro' railroad was opened on Monday last to a distance of fifteen miles. So much of it as is opened is represented to be the finest and best constructed road in the south. The remainder of it, it is presumed, will be equally well built. The work is now progressing rapidly, and the road will be pushed forward as speedily as possible to completion.

An arrangement has been made to run four-horse coaches in connection with the road, from the fifteen mile point to Augusta. This will take the mails and passengers through from this place to Augusta in 14 hours.—*Sav. Repub.*

Pennsylvania.

Philadelphia, Germantown and Norristown Railroad.—We learn from a recent report of the board of managers that this company have had a very prosperous business season the past year. The number of passengers for the year ending 31st October, was 506,501, an increase of 69,066 over last year. In every article of freight there has been a large increase, except coal. In that there has been a falling off, owing in a great measure to the destruction of the bridge at Conshohocken, in September, 1850, which rendered it impossible for much coal business to be done until February. The board expect that the coal business will be increased when the new bridge across the Schuylkill is finished at the lower end of Norristown. This bridge over which a track is to be laid will furnish the first good connection between the Norristown and Reading roads, and it is estimated that 20,000 tons of coal will pass over it the first year to supply Norristown and vicinity.

The receipts for the past year have been as follows:

From passengers on Norristown branch.	\$63,436 90
“ Germantown “	31,637 00
Amount from passengers	95,073 90
Freight on Norristown branch.	39,153 42
“ Germantown “	2,550 35
Amount from freight	41,703 77
Amount from passengers and freight.	136,777 67
Sale of old materials	1,946 25
Interest and rents	637 00
	2,583 25

Total receipts from all sources

In their last annual report the board estimated the revenue of the year at \$130,000. Excess realized above estimate, \$9,360 92.

Cash in bank, 1st Nov., 1850.	\$4,253 17
Funds in hand of Con. Com.	10,000 00
	14,253 17
Total receipts, as above	139,360 92

Total available funds

The total expenditures of the year have been \$146,278 80, leaving a balance of \$7,335 29.

The prospects of the road are encouraging. The receipts for 1852 are estimated at \$152,500, and the total expense, \$103,000, leaving \$49,500 net income.

There have been two railroad companies incorporated and organized, for the purpose of constructing roads that will, when completed, form extensions of this road: the Chester Valley railroad company—the road to extend from Norristown to Downingtown, 22 miles; and the Chestnut Hill railroad company—the road to extend from Germantown to Chestnut Hill, 3½ miles. The former is the old Norristown and Valley road revived, the grading upon which is about three-fourths done, and which it is estimated will require \$350,000 to complete it. The latter road will cost about \$80,000.

Both these roads would bring large additional business to this road, and prove highly advantageous to it.

STATEMENT OF LOAN AND STOCK ACCOUNT.

Amount of consolidated loan issued.	\$272,500
Capital stock authorised by law...	16,000 shares.
Amount of capital stock in circulation (par value \$50, \$788,050) ..	15,761 shares.
That may be issued by the company	239 shares.
Total stock and loan	\$1,060,550

Missouri.

Hannibal and St. Josephs Railroad.—The commencement of work upon this great line of railroad took place at Hannibal on the 3d ult., with appropriate ceremonies. The event collected together a great concourse of people. The principal orator on the occasion was J. B. Crockett, Esq., of the St. Louis Intelligencer, who delivered a most eloquent and spirited address. The ceremony of breaking ground was performed by the President of the road, Col. R. M. Stewart, who prefaced the act by the following remarks:

Fellow Citizens:—I believe I speak the sentiments of all when I say that *this* is one of the brightest days in the history of the State. Strange as it may appear to those States which have observed our sluggish movements heretofore with disgust, and contemplated our tardy policy with contempt, and who have been accustomed to undervalue our vast resources, which have been lost sight of in our lack of energy and public spirit, nevertheless this is the second occasion of a like character which has been celebrated within the last six months; for, within that time, the enterprising co-workers in advancing internal improvements, have commenced the construction of a railroad west from St. Louis that the State will be proud of; and it is our wish that the Hannibal and St. Joseph railroad may merit equal favor in the high opinions of the people of the State of Missouri. Public spirit and enterprise are embarked in the two schemes, with a certainty of their being carried out and completed, and with full assurances that nothing will intervene, unless it might be that God should send the earth asunder with an earthquake, to prevent its full consummation. I speak thus emphatically, because I know that the people of this State have manifested a determination to push ahead with unbounded energy in the work, and the declaration has gone forth from the lips of men in mighty numbers assembled, that it shall be accomplished. Yes, it shall be completed, whether the general government gives us what even-handed justice requires, by making appropriations of lands to aid in the work, as it has done to our sister States, or persists in that unjust policy which has compelled Missouri to stand back for the last quarter of a century.

Fellow Citizens: Missouri is able herself to build this road, even if other older States of the confederacy, which have been the special recipients of the favors of the general congress, do unite, and thus defeat the measures introduced for her just rights. I do not anticipate that our claims fail to meet with attention commensurate with their importance; but if opposition be made, we will rely on our own resources. We have burst the chains which have so long bound us, hand and foot, and have thrown off the shackles which have crippled our energies, and have taken the responsibility to speak and act for ourselves. It shall no longer be said that Missouri is behind the improvements of the other States of the confederacy, for we intend to make her what the God of Nature designed her to be—a most happy, peaceful and prosperous country.

The State has come forward nobly in the work, and extended her credit to aid in the progress of the enterprise. Through her liberality, a loan of \$2,500,000 was authorized for its consummation. Already the requisite stock has been taken to secure both loans. The success of the enterprise is rendered premanent by a soil of unbounded fertility and the loveliest section of country, I was about to say, on the American continent. There is no country containing the same extent of territory which is capable of sustaining such an amount of population in full vigor as our State, and all we want to successfully establish the truth of our assertions in regard to the matter is, to open the avenue for carrying off our products. This road would be intersected at all points by numberless other rail and plank roads, to even the remotest in the States near to a good market; and such an avalanche of the riches of Missouri's soil will be poured into the Mississippi, to be borne on her quiet bosom to the ocean, and from thence carried to all parts of the earth, as will speak in tones which cannot be controverted, endorsing all which we claim for our State.

It is well known to our readers that the State of Missouri subscribes one half of the cost of the two great lines of railroad—the Pacific, and the Hannibal and St. Josephs. Both of these roads are to run from the east and west lines of the State. The Hannibal and St. Josephs can easily connect on the east with the Northern Cross road of Illinois, and by this means be brought into direct connection with all the railroads of the United States, and constitute its line the great route of travel west.

The distance from Hannibal to St. Josephs is about 200 miles. The route traverses the finest portion of the State, and one of the best in the country. It is remarkably favorable for a railroad—much more so than that of the Pacific road. The country traversed is well settled, and its inhabitants, with State aid, can easily furnish the means for the construction of the road.

The amount of private and county subscriptions exceed \$1,000,000. This carries an equal amount of State subscription, so that the immediate means of the company are \$2,000,000, sufficient for all present purposes.

The company are indebted for the favorable position of its affairs mainly to the efforts of its able and energetic president, who has, to a great extent, been the life and soul of the project. It has now reached the point, from which future progress will be comparatively easy, and success certain. The project will come before the public under favorable auspices, and will undoubtedly receive the encouragement it deserves.

The directors of the company for the present year are, R. M. Stewart, president, John Corby, T. S. Talbot, R. I. Boyd, John Graves, G. A. Shortridge, Z. G. Draper, E. M. Moffett, R. T. Lakenan.

Railroads in the South.

There appears to be every indication, that a number of the Southern States, during the present winter, while their legislatures are in session, will commit themselves strongly in favor of some general system of internal improvement within their respective territories. The State of Tennessee has already lent her aid to two roads, the East Tennessee and Georgia, and the Nashville and Chattanooga. We believe that there is not much doubt that she will give to all her important lines now in progress and contemplation, the benefit of these precedents. The railroads of Tennessee cost much higher than those of any western or southern State, owing to the irregular surface of the country, and the difficulty in crossing the leading water courses. The amount of the aid to be furnished by the State, seems by general consent is to be limited to the cost of the iron, and in some cases the equipment. Should the State take up the leading lines, Tennessee will become the theatre of very active operations for some years to come.

We can see no objection to the adoption of such a policy. The State places herself in the light of a mortgage holding abundant security. With her endorsement, companies can sell their bonds at par, when without it, they could not probably obtain over 80 cents on the dollar, if they could sell them at any price. The difference is nearly sufficient to determine the character of a road as a paying project. There is another advantage resulting from a State becoming a party to railroads. Her securities go abroad and are the means of bringing capital into our country while the bonds of companies would have to be sold in our own markets, which add still more, to the high rates of interest which our companies are compelled to pay.

What we have said of Tennessee will apply equally well to the States of Alabama, Mississippi and Louisiana. Each of these are agitating some scheme to assist the railroads in progress and projected within their borders. All of them feel the necessity of acting in their collective capacity, in the prosecution of important lines that cannot be executed without such aid, and the present season probably will not pass, without the adoption by each, of some well digested plan to carry out a comprehensive scheme of internal improvements, suited to the wants of each.

Cotton, Woollen and Iron Manufactures.

The following is an official statement of the quantity of cotton, wool and iron consumed in the United States during the past year, together with the value of the raw material consumed, number of hands employed, and value and quantity of the article manufactured:

Cotton Goods in the United States.

Capital invested.....	\$74,501,031
Bales of cotton used.....	609,117
Tons of coal consumed.....	121,099
Value of all the raw material.....	34,835,056
Hands employed.....	102,287
Value of entire product.....	61,869,184
Yards of sheeting etc.....	763,678,407

Woollen Manufactures of the United States.

Capital invested.....	\$28,118,659
Pounds of wool used.....	70,802,829
Tons of coal.....	46,370
Value of all the raw material.....	25,755,988
Hands employed.....	39,251
Value of entire products.....	43,207,555
Yards of cloth manufactured.....	82,206,652

Wrought Iron Works of the United States.

Capital invested.....	\$13,995,220
Tons of pig metal consumed.....	251,491
Tons of blooms used.....	33,314
Tons of ore.....	78,767
Tons of mineral coal.....	527,063
Bushels of coke and charcoal.....	14,510,838
Value of raw material and fuel.....	9,518,109
Hands employed.....	12,975
Tons of wrought iron made.....	272,044
Value of entire products.....	16,387,074

Productive Establishments of the United States.

	Cot- ton.	Wool- lens.	Cast- ings.	Pig iron.	Wro't iron.
Massachusetts.....	213	119	68	6	6
Connecticut.....	128	149	60	13	18
New York.....	86	249	323	18	60
Delaware.....	12	8	13	..	2
Maryland.....	24	38	16	18	17
Virginia.....	27	121	54	29	39
South Carolina.....	18	..	6	..	..
Georgia.....	35	3	4	3	2
Tennessee.....	33	4	16	23	42
Kentucky.....	8	25	20	21	4
Ohio.....	8	130	183	25	11
Missouri.....	2	1	6	5	2
Rhode Island.....	158	45	20	..	1
Pennsylvania.....	208	560	320	180	131
New Jersey.....	21	41	45	10	53
Maine.....	12	36	25	1	..
New Hampshire.....	44	61	26	1	2
Wisconsin.....	..	9	15	1	..
Illinois.....	..	16	29	2	..
Alabama.....	12	..	10	3	1
Louisiana.....	..	..	8	..	..
Dt. of Columbia.....	1	1	2	..	..
Mississippi.....	2	..	8	..	..
Florida.....	..	..	..	..	..
North Carolina.....	28	1	5	2	19
Texas.....	..	1	..	..	..
Arkansas.....	3	..	..	..	..
Michigan.....	..	15	63	1	..
Vermont.....	9	72	26	3	8
Indiana.....	2	33	14	2	3
California.....	..	1	1	..	..
Iowa.....	..	1	3	..	..
Total.....	1694	1559	1391	375	422

Abstract of the President's Message.

The message commences by congratulating the people upon the peaceful condition of our domestic and foreign relations.

It gives a brief history of the "illegal and ill-fated" Cuban expedition; states that no proper effort will be spared to procure the release of those who are now in confinement, notwithstanding they have forfeited the protection of the government.

It advocates neutrality and non-intervention in the controversies of other nations. But while advocating this policy, the government is anxious to see the same forbearance on the part of other governments, and sympathizes with every struggle against oppression.

It states that the government adheres to, and will maintain the principle, that every regularly documented merchant vessel, and those on board of it shall find protection in the flag that is over them.

It calls attention to the proposition for reciprocal trade with Canada, and to a proposition that the boundary line between Oregon and the British possessions, should be authoritatively marked out.

It states that claims against Portugal have been adjusted.

It recommends Congress to consider in what manner Kossuth and his companions shall be received and treated.

It favors the independence of the Sandwich Islands.

It deprecates the disturbances in Northern Mexico.

It states that the Tehuantepec railroad convention only awaits the ratification of the Mexican government. Until quiet has been restored in Nicaragua, the question pending between the two countries cannot be disposed of. Passengers have actually traversed the inter-oceanic communication from San Juan to the Pacific. A considerable part of the Panama railroad is completed.

It recommends that the salary of the Commissioner to China be raised on an equality with those of other ministers.

The total available means of the last fiscal year were.....\$58,917,524 36
The total expenditures.....48,905,878 68
The total imports.....215,725,995 00
The total exports.....217,517,130 00
Total payment of cash on account of public debt since Dec. 1, 1850. 7,501,456 56
Public debt on the 20th Nov., 1851. 62,560,395 26
The receipts for the next fiscal year are estimated at.....51,800,000 00
The expenditures are estimated at. 42,892,299 19
Exports of last fiscal year exhibit increase over previous year of... 43,646,322 00

The message then shows that the low rate of duties has not increased the demand or raised the price of our agricultural products in foreign markets, and recommends the substitution of specific for ad valorem duties.

It warns the people against the injurious tendency of large exports of specie. Should it be exported during the remaining three-quarters of the year, at the same rate as during the first quarter, it will take from our metallic currency the enormous amount of \$58,607,308.

It recommends measures for the extinguishment of the public debt, and states that measures have been adopted for the payment of the \$10,000,000 to Texas.

It recommends attention to the survey and disposal of the public lands in California. The establishment of an Agricultural Bureau. The revision of the laws on the subject of fees of District Attorneys, Clerks, Marshals, etc. The im-

provement of Rivers and Harbors. The protection of the S. W. Frontier against the Indian depredations. A revision of the United States Statutes.—A commission to settle private claims.

There have been some Indian troubles. But we are now at peace with all the tribes.

The census reports are all in, except those from California.

The extension of the Capitol is progressing with rapidity.

The expenditures of the War Department for the last fiscal year are \$9,060,268 58, showing a reduction.

Several alterations in the regulations of the Navy, in regard to rank, and grade, punishment, etc., are proposed.

The reduction of postage has caused a falling off in the revenue of the Department. It recommends that the letter rates be adhered to, but that the rates on printed matter be made more simple and uniform.

It defends the Fugitive Slave Law, deprecates the resistance to it, and avows the determination of the President to give all aid, legally in his power, to its enforcement.

It expresses a belief that a determination exists in certain quarters to overturn the Constitution, and rend asunder the Union.

And it recommends that the Compromise be considered a final settlement, in principle and substance, of the dangerous and exciting subjects which they embrace; and congratulates the country upon the general acquiescence in it.

Exports of Great Britain.

A publication has been made by the British Board of Trade showing the countries consuming the exports of the Kingdom in 1850. Exclusive of the British possessions, the United States are by far the best customers, the German States the next, though not one half in amount. The fourteen countries taking over one million sterling each, rank as follows:—

1. British possessions and settlements.....	£18,628,899
2. United States.....	14,891,951
3. Germany.....	7,457,346
4. Holland.....	3,542,632
5. Turkey Wallachia and Moldavia.....	2,810,425
6. Brazil.....	2,544,837
7. France.....	2,403,702
8. China.....	1,574,145
9. Foreign West India Islands.....	1,517,744
[Cuba, &c.].....	1,464,834
10. Russia.....	1,156,266
11. Chili.....	1,136,237
12. Belgium.....	1,026,456
13. Naples and Sicily.....	1,029,204
14. Portugal.....	£61,184,688
32 other States [each below one million].....	10,183,197
Grand Total.....	£71,367,885

Ogdensburg and Northern Railroad.

A week ago 17 vessels were unloaded at Ogdensburg, and a fleet of 46 vessels in addition were on the way thither. The last Ogdensburg Sentinel gives the names and cargoes of 20 vessels, steamers, brigs, schooners and sloops that had arrived in the previous three days. They brought 28,578 barrels of flour, 33,504 bushels of corn and wheat, 80 barrels of salt, and 60 barrels of ashes. The prospect of the speedy closing of navigation has hurried forward western and Canadian produce.—The immense storehouses and granaries of the Ogdensburg railroad are essentially completed. They will contain 460,000 barrels of flour. The grain elevator raises 1300 bushels in an hour, and is furnished with ample room for the storage of 100,000

bushels. The earnings of the Northern railroad will be \$90,000 for November and December.

Kentucky.

Maysville and Big Sandy Railroad.—A survey of the route of this road has been completed under charge of C. B. Child. There are several routes. One is to run along the Ohio river, and is 88 miles in length, and it is recommended as being remarkably favorable for the construction of the proposed road. The maximum grades will not exceed 15 feet to the mile, and the sharpest curves have a radius of 2865 feet. The lines will run in many places perfectly straight—in some places on the very best ground, nearly level. But little grading will be required, and there is an abundant supply of stone and timber along the route, which can be used for the stream crossings, as well as for the general purposes of construction.

The other lines proposed are interior, and have an advantage in point of distance of about 10 miles. Those which have been surveyed are reported to be of more difficult construction than the river line, but considering the country they pass through, are not at all unfavorable.

It is the opinion of the engineers, who have been engaged in the survey of these routes, that few railways in the country, of equal length, have equally favorable elements for making a fast, cheap, yet permanent and profitable line.

Illinois.

Decision against the Atlantic and Mississippi Railroad.—We have been permitted, says the Cincinnati Commercial, to make the following extract from a letter written by a distinguished member of the bar in attendance, on the Supreme Court, now in session in the Southern District, at Mt. Vernon. This leaves the Cincinnati and St. Louis railway without a competitor across the State of Illinois to St. Louis:—

MT. VERNON, ILL., NOV. 23, 1851.

On last Saturday week the case of the Atlantic and Mississippi railroad company, (Terre Haute and St. Louis line,) was argued before the Supreme Court. This question was as to the right of the company to condemn lands under the general law, having failed to procure the consent of the Legislature to construct their road. Messrs. Scates, Constable Rust and Mr. Wait, the President, for the company; and Mr. Kitchell against it. The decision was made to-day against the company.—This defeats entirely that road unless they can get a charter from the Legislature.

Ohio and Mississippi Railroad.

It is stated that the Hon. H. C. Seymour, State Engineer and Surveyor, has entered into a contract for himself and associates, to build a railroad 330 miles long, from Cincinnati to St. Louis. The contract includes the survey, grading, bridging, superstructure, iron, depots, engines, cars, equipage, etc., and the price is \$9,000,000. The payment to be one-third cash, one-third stock, and one-third in the first revenue bonds of the corporations, which will be a lien on the whole line of road. The road to be completed and delivered in working order, within five years from the first of February next.

Immense as this work is, it has not been undertaken by so considerable and accomplished an engineer as Mr. Seymour, without a well grounded conviction of its success.

The road connects two great cities, and passes through a rich and productive country already well populated. The commerce and intercourse between Cincinnati and St. Louis is already immense, and is carried on by steamboats running on the Ohio and Mississippi rivers. The distance by that route is between 700 and 800 miles. The distance by the road is 330 miles. It is plain that the day the road shall be opened through, it will be crowded to its capacity with freight and passengers. The road will be a link in the chains of rail-

way leading from St. Louis east to the Atlantic ports of Baltimore, Philadelphia, New York and Boston, and will in each case make a part of the shortest route.—*Albany Journal*, Dec. 4.

Hudson River Railroad.

We regret to state that the success of this road, since its opening, has not realised public expectation. The stock in consequence has depreciated rapidly. The public, we believe, have been equally disappointed in its management. The trains have not run at the speed, nor with the regularity promised, nor such as is demanded by the convenience of the public. Accidents have been of frequent occurrence; some of them of the most fearful character; and when we add to the danger from the ordinary accidents on railroads, the fact that the Hudson River road runs on the bank of the river for a great part of the distance, and the inevitable destruction of life that must occur should the cars be precipitated into the water, we cannot wonder that a good deal of distrust exists at the safety of this route. It will take a long time for the company to outgrow the dreadful accident which recently occurred on this road.

The company have made an example of the two conductors of the trains that came in collision, by dismissing them from employment. The Albany Evening Journal, in noticing this fact, is by no means satisfied with the apology thus offered. It says:

"We must insist in our opinion that the directors (by the dismissal of the conductors) have not gone to the root of the matter. They have not yet told the public why the engine with which the accident originated, was allowed to run within one or two minutes of the passenger train. Was its position in accordance with the rules of the road? If so, then those who framed those rules deserve to be indicted; for the position of that engine was the primary cause of all the mischief.

As the directors are silent upon that point, the public will hold them to be the guilty parties until they shall relieve themselves (if they can) from the imputation. No men fit to assume the management of a railroad, would permit an engine to keep the position of that which caused this calamity. We have before us the rules of other roads: and we find in those rules, one which positively prohibits any engine from running within fifteen minutes of any train. If this rule had been acted upon on the Hudson river road, the accident in question would not have occurred.

As the directors have dismissed three of its officers (two of them properly) for neglect of duty, the public will now expect a little light from the managing directors of the road in regard to their own conduct. Was the conductor of the engine which did the mischief, running in accordance with the rules of the road? If he was, no passenger's life is safe while that rule remains in force. If he was not, the public mind will be quieted by having the fact made known."

In a very few days its rival line, the Harlem, will be opened. As the difference in distance between the two is but slight, and as both will probably make the same connections, west and north, we we predict that the latter will have more than half of the travel and business between Albany and New York.

New York.

Potsdam Railroad.—The survey of this road is completed, and Mr. Broadhead, the Chief, will proceed at once to make the estimates and profile. A report will be made in the course of six weeks. We learn that the route is a most remarkable one, being almost in an air line, and of easy grade; from this place to Antwerp there will not be at one place three feet cutting or three feet filling; the surface of the soil being a grade line. Passing through a rich farming country, near extensive ore-beds, and in the vicinity of a large lumber tract, costing less than the average roads, it must prove a good and

profitable enterprise. It must be built.—*Waterbury Jeffersonian*.

Ohio.

Cleveland and Wellsville Railroad.—First Six Months' Business.—The business done on that portion of the Cleveland and Wellsville road between Ravenna and Cleveland—38 miles—for six months ending September 20th, 1851, is thus stated:

Whole number of passengers.....	47,943
Amount received for passengers.....	\$37,203 88
Amount for freight.....	2,058 83

Gross earnings.....	\$39,262 71
Expenses for same period.....	19,754 33

Net earnings.....	\$19,508 38
Eleven per cent per annum upon \$700,000, the cost of said 38 miles, for six months.....	38,500 00

Leaving a surplus of.....	\$1,008 88
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For the length of the road in use, we think the above exhibit is without a parallel in the history of railroads. There being but a small portion of the road in operation, and that portion terminating in the interior of the country, nothing more than a home business has been transacted; yet the company report net earnings of over 11 per cent!—*Portage Whig*.

Eaton and Piqua Railroad.—The line of this road has been placed under contract to Mr. DeGraffe, of Dayton.

Ohio.

Carroll County Railroad.—Hanover, on the Cleveland and Pittsburg railroad, is but 16 miles from Carrollton, the flourishing county seat of the productive county of Carroll, and Rochester, on the line of railroad, is but 12 miles from Carrollton. A rail road is in progress from Carrollton to connect with the Cleveland and Pittsburg road, and the Free Press says it is expected that this branch will be completed by the 1st of June next. The most of the grading is done, the whole will be early this winter, and the track can be laid early in the Spring. When completed, Carrollton will be within four hours travel of the Forest City.

Business of the C. C. and C. Railroad.—The business of the Cleveland, Columbus and Cincinnati railroad continues to exceed the expectations of its most sanguine friends. The receipts for the month of October were \$66,029.10. The receipts for three months to November 1st, were \$198,341.55.—*Cleveland Herald*.

Wilmington and Zanesville Railroad.—Eighty miles of this road, from Lancaster to the Little Miami road, have been placed under contract.

Cleveland, Painesville and Ashtabula Railroad.—This road was opened to Painesville on the 20th ult.

Indiana.

New Castle and Richmond Railroad.—The Indianapolis State Sentinel of the 26th November states that the railway from Logansport to New Castle is to be built, injunction or no injunction. The first five miles from Logansport have been let to Chas. Taber, which will just about carry it through his farm; and that much will be accomplished, as sure as he lives. The Delphi folks have subscribed \$40,000 towards a road from Logansport to Layette, near the line of the canal.

Cleveland and Wheeling Road.

We yesterday met the corps of engineers, under charge of Mr. Linten, engaged in the survey of the road from Wellsville to Wheeling. The distance from the mouth of Yellow Creek, to the west end of the Wheeling Bridge is 38 miles, the route is one of the best that could be selected anywhere. The cost of preparing the substructure upon the whole route will not be as great as that from Wellsville to Beaver. The stone work will be very light. The whole cost of the road will not be over about half a million, and as a connect-

ing link it will be one of the most valuable in the country. It will be a noble outlet for the Steubenville and Indiana road until another eastern outlet may be made.—*Wheeling Gazette*.

Wabash and Erie Canal.

The magnitude of this great work, says the Indiana Statesman, and the importance of the trust may be inferred from a brief statement of the receipts and expenditures for the year ending Oct. 1st, 1851;—

Receipts.

From tolls and water rents.....	\$173,407 55
From sale of lands.....	189,310 46
From subscription of bondholders....	5,000 00
From miscellaneous sources.....	2,663 42

Total receipts for the year.....\$365,881 43

Expenditures.

For general expenses.....	\$16,268 58
For ordinary repairs.....	39,607 83
For extraordinary repairs.....	7,059 67
For rebuilding bridges.....	3,555 18
For expenses of superintendence.....	6,648 27
For expenses of collection.....	6,076 67
For damages and water power.....	14,712 96
For expenses of Land Office.....	2,636 08
For engineering, surveys, etc.....	11,680 15
For interest on bondholders' subscrip- tions.....	45,565 25
For construction of canal.....	257,132 63

Total expenditures for the year....\$414,273 27

The balance of the funds in the hands of the Trustees, at the close of the year, to be applied to the further prosecution of the work, is \$146,398 25.

The tolls have increased \$23,000 over the receipts of 1850, and the increased receipts from the sale of canal lands, exceed \$75,000. The whole work will be completed in a year.

Georgia.

Railroad Connection at Macon.—It gives us much pleasure to announce that this long talked of connection has been so far finished that twelve cars loaded with cotton passed from the Macon and Western to the Central road this morning. Cars are now loaded at the Central railroad depot, and will leave to-morrow for Rome direct. Cars can now pass from the Augusta and Waynesboro', the Milledgeville, and the Central roads to Oglethorpe and Rome, Georgia; and to Chattanooga and Charleston in Tennessee. We feel that we are now united to Cherokee, Georgia and Tennessee by iron bands.—*Sav. Repub.*

Compound Rail.

We learn that orders are going out to England to a considerable amount for the compound rail, patented by Mr. Winslow. The Cleveland and Ashtabula railroad company have already ordered a quantity for their road. Continued experience only serves to show that the rail proves in practice what is claimed of it in theory.

New England Car Spring Co.,

No. 104 Broadway, New York,

MANUFACTURERS OF

INDIA RUBBER CAR SPRINGS & HOSE,

Of F. M. Ray's improved form, and dealers in every description of Rubber Goods for Railway purposes. All Goods manufactured by this company are warranted of the best materials, and the same composition which has established the reputation of F. M. Ray's India-rubber Car Springs.

F. M. RAY, Agent.

Railroad Iron.

THE undersigned offer for sale 1000 tons Railroad Iron, (about 56 lbs. to the yard,) now at Brooklyn.

CHOUTEAU, MERLE & SANFORD,
Oct. 1, 1851. 51 New st.

To Civil and Mining Engineers and Surveyors.

A YOUNG MAN having lately completed an engagement of six years with an eminent Civil and Mining Engineer in Scotland, is desirous of a situation in that capacity. Has had considerable experience in the mines of Scotland, and is in possession of all instruments necessary for land and mining surveying. Address A. S., care Mr. D. H. Arnot, 50 Wall St., N. Y.
Dec. 13th. 1m*

Notice to Contractors.

Virginia Central Railroad.

SEALED PROPOSALS will be received at the Engineer's Office of the Virginia Central railroad at Staunton, on the 18th day of December, 1851, for the Grading, Masonry, etc., of that portion of the line extending from Staunton to Panther's Gap, a distance of 35 miles. Drawings and specifications of the work may be seen from the 15th to the 18th of December, inclusive.

The best of references will be required. Contractors are requested to state what work they are engaged upon, and when it will be completed.

The Directors reserve the right to accept or reject proposals as they may consider the interests of the company require. The names, in full, of all the parties must be given in the proposals.

By order of the President and Directors.
T. COLDEN RUGGLES,
Chief Engineer.

Railroad Instruments.

THEODOLITES, TRANSIT COMPASSES & LEVELS on a new principle, with Fraunhofer's Munich Glasses, Surveyors' Compasses, Barometers, Chains, Drawing Instruments, etc., all of the best quality and workmanship, for sale at unusually low prices by
E. & G. W. BLUNT,
No. 179 Water st.

New York, Dec. 1, 1851.

M. B. Hewson, Civil Engineer,
(Open to a New Engagement),
Memphis, Tenn.

LOWMOOR LOCOMOTIVE TIRES.

THE Subscriber, sole agent for the Lowmoor Co., is prepared to take orders for this superior description of tires, which are furnished, bent, welded and blocked to any dimensions, having but one weld, and at a cost to the importer of less than ten cents per pound for the heaviest weights.

WM. BAILEY LANG.

Boston, November 29th. 1m

Railroad Iron.

2000 TONS of an approved pattern 59 to 60 lbs. per lineal yard, now manufactured in England, and ready for immediate shipment, from thence. Also, 2,500 tons of different patterns in port and expected to arrive within sixty days. For sale by
DAVIS, BROOKS & Co.

28 Beaver Street, New York.

CONTRACTS made for Railroad Iron at a specific price delivered in England, or at port in the United States.

PREMIUM RAILROAD CAR SPRINGS,

AND OTHER

India-rubber Goods.

TWO Prizes were awarded me last month by the American Institute—one for best Car Springs, the other for best Overshoes. This proves the superiority of the Goods made by me.

HOSE and STEAM PACKING, and all other India rubber goods for Railroad purposes, on hand and for sale cheaper than any other house.

Car Springs, 50 cents per lb. for cash—of the best quality and of all sizes, (Fuller's patent.)

I now give notice that Fuller is the original and true inventor of the India-rubber Spring, and companies who use Springs made by other parties will eventually have to pay me damages. H. H. DAY,
23 Courtlandt st., New York.

Inventor and owner of 17 U. S. Patents, and the oldest Manufacturer of India-rubber in the U. S.
December 6, 1851.

To Railroad Companies.

H. & F. BLANDY, Proprietors
LOCOMOTIVE ENGINE WORKS,
ZANESVILLE, OHIO.

RESPECTFULLY give notice to Railroad Companies that they are now prepared to furnish Engines of the most approved construction and finish, which, for capacity, speed and durability, are not excelled in this country.

Also, all other Railroad machinery, of both wrought and cast iron, pertaining to the road, stations or machine shops.

Terms as favorable as any other builders in the United States.

The facilities for transportation from Zanesville are as good as from any other point in the Union, having steamboat navigation to the Ohio river, and Canal boat and Railroad connection with the Ohio river and Lakes.

One of their Engines, the "MUSKINGUM," on the Central Ohio Railroad, may be referred to, or others, at their works. The attention of those interested is invited, and orders solicited.

Oct. 30th, 1851.

To Contractors.

OFFICE OF THE E. AND ILL. R. R. Co.,
Evansville, Oct. 23d, 1851.

SEALED PROPOSALS will be received at this office from the 13th to the 23d day of December next, for the grubbing, grading and bridging of that portion of the Evansville and Illinois railroad, lying between Princeton and Vincennes, a distance of 24 miles.

This work includes two bridges; one across White River, about 600 feet, the other across Patoka, about 200 feet.

Contractors will state what proportion of the Stock of the Company will be taken in payment.

Plans, profiles and specifications, will be exhibited, and all requisite information given at the Office of the company in Evansville, on and after the 13th day of December next. By order of the Board of Directors.

SAM'L HALL,
President.

RAILROAD SPRINGS.

Fuller's India-rubber Springs.

THESE are now made in our own Factory, of the best materials. Each spring is guaranteed to perform the required work. Purchasers guaranteed against adverse claims.

Car Builders will save great expense by calling at the office of the Company.

23 Courtlandt St., New York.

To Railroad Companies.

THE undersigned has discovered and patented an imperishable, cheap, and sufficiently elastic substance, to be introduced between the sill and rail, so that the stone sill can be used in place of the wooden sill: entirely overcoming that rigidity where the rail is laid directly on stone. Address
J. B. GRAY, Philadelphia.

July 10, 1851.

4m

Railroad Iron.

THE undersigned are prepared to enter into contracts now at specific prices, to deliver Railroad Iron during the coming Winter and Spring, free on board at the shipping ports in Wales, or at ports in the United States.

CHOUTEAU, MERLE & SANFORD,
Sept. 30, 1851. No. 51 New st.

To Contractors.

OFFICE WILMINGTON & MANCHESTER R. R. Co.,
Marion C. H., S. C., October 18, 1851.

SEALED PROPOSALS will be received until the 15th of December next, for the Piers of a Bridge across the Great Pee Dee River. The bridge comprises four piers, one a very heavy pier to draw, and the sinking of cast iron hollow piers by "Dr. Pott's Pneumatic Process," for forming foundations. The plans and specifications of the piers will be exhibited by the Secretary of the Company at Marion Court House, and by the Resident Engineer, L. J. Fleming, Esq., at Wilmington, North Carolina.

WALTER GWYNN,
Chief Engineer Wilm. and Man. R.R.
November 1. Richland, Va

Bridges & Brother, DEALERS IN RAILROAD AND CAR FINDINGS, 64 Courtlandt street, New York.

Having established a general Depot for the sale of articles used in the construction of Railroads, Locomotive Engines and Railroad Cars, we would invite your attention to our establishment. We have already in store a good assortment of CAR FINDINGS and other articles used in the trade, and feel justified in saying, that should you desire anything in our line, we can supply on terms perfectly satisfactory, and in the event of your desiring to order, you may feel assured that your terms will be as good as though you were here to make your own purchases.

Among our goods may be found Railroad Car Wheels, Axles, Jaws and Boxes, Nuts and Washers, Bolts, Brass Seat Hooks and Rivets, Window and Blind Springs, Lifters and Catchers, Door Locks, Knobs and Butts, Ventilators and Rings, Car Lamps, Coach and Wood Screws, Jack and Bed Screws and Babbitt's Metal; also Plushes, Damask, Enamelled Head Linings, Cotton Duck for Top Covering in width sufficient without seams, Curled Hair and all other articles appertaining to cars.

Also a new and valuable CAR DOOR LOCK, well adapted to the Sliding Door. This is decidedly the best yet introduced.

LOCOMOTIVE ENGINE LANTERNS, the best article made in the country. Whistles, Gauge and Oil Cocks, Hemp Packing, American, Russian and Italian. We are also agents for Lightner's Patent Journal Box for Car Axles, that invaluable invention, for the economical use and preservation of Car Journals.

Coach VARNISH and Japan of the best quality. We would also offer our services for the purchase as well as for the sale of goods on commission.—Both members of our firm have had the experience of many years in the manufacture of Railroad Cars, and our Senior was a member of the well known house of DAVENPORT & BRIDGES, Car Manufacturers, Cambridgeport, Mass. With our knowledge of matters pertaining to Railroads, we feel quite confident in giving satisfaction to both buyer and seller, and hope that through assiduity and attention to any business entrusted to our care we shall merit a continuance of confidence and patronage.

BRIDGES & BROTHER.

July 22, 1851.

Lightner's Patent Axle Boxes.

The undersigned are Agents for, and offer for sale, *Lightner's Patent Axle Boxes*, for Railroad Cars and Tenders, which have, by thorough experience, been demonstrated to be one of the most valuable improvements ever introduced in Locomotion. The saving effected in oil alone, will in a few months pay the first cost of these boxes, independent of other advantages. They are now in use upon the following, among other roads, viz:

Boston and Worcester, Boston and Providence, Boston and Fitchburg, Nashua and Lowell, Providence and Worcester, Northern, N.H., Cheshire, Manchester and Lawrence, Concord, N.H., Concord and Claremont, Ogdensburg, (Northern, N.Y.), Stonington, New London Willimantic and Palmer, New Jersey Central, New Hampshire Central, Worcester and Nashua, Fitchburg and Worcester, Connecticut and Passumpsic, Lowell and Lawrence, Salem and Lowell, Wilton Branch, Newburyport.

Below will be found the certificates of a number of gentlemen, whose opinions will be good authority in every part of the country.

Office Boston and Prov. R. R.,
Boston, Dec. 28, 1849.

Mr. JOHN LIGHTNER,

Sir,—It affords me pleasure to say, that after two years' trial of your boxes, I am fully and entirely satisfied of their superiority over any other pattern we have used. This superiority consists in economy of oil and freedom from "heating." I have tried every pattern of box in use, of any note, and do not hesitate to say, that you have devised one which in every respect combines greater advantages than any other within my knowledge, these advantages are so manifest, that I am fitting up all

our cars with your boxes, as fast as practicable.

Annexed, is a statement of an experiment with your boxes, the result of which may be of use to your interests.

Ten passenger cars, running 72 wheels, fitted up with Lightner's boxes used 41½ pints of Patent Oil, at 50 cts. per gallon, ran 43,099 miles, equal to 5-16 pints per wheel for 43,099 miles. Speed, 30 to 40 miles per hour.

Very respectfully yours,

W. RAYMOND LEE, Supt.

I have examined the above statement of Mr. Lee, and fully concur with him in his opinion of the superiority of Lightner's box.

GEORGE S. GRIGGS,
Supt. Machine Shop B. & P. R. R.

Boston, July 26, 1849.

This is to certify that J. Lightner's axle boxes for railroad cars and locomotive tenders, have been in use on the Boston and Worcester railroad one year, and I unhesitatingly pronounce it, in my opinion, the best and most economical one in use, requiring less oil, of easy application, not susceptible of derangement, as in most kinds in use. When requiring repairs or renewal, the same may be done in one-fourth of the time usually occupied for that purpose. The box requires oiling not oftener than once a month—is kept quite free from dust, and consequently wears much longer than those generally in use.

D. N. PICKERING,
Supt. Motive Power, B. & W. R. R.

Office of Boston Locomotive Works,
December 12th, 1849.

The Boston Locomotive Company have been using J. Lightner's patent axle boxes under the tenders of their engines for several months, and find them more highly spoken of by the railroad companies that have used them in regard to economy in the use of oil, their durability and their ease of adjustment, than any other boxes which they have used. We therefore do not hesitate to recommend them to all railroad companies.

DANIEL F. CHILD,
Treas. Boston Locomotive Works.

Taunton Locomotive Works,
Taunton, July 7, 1849.

Mr. H. F. ALEXANDER,

Dear Sir,—Your favor of yesterday came to hand in which you ask what success we have met with, in using Mr. Lightner's patent box for cars, engines, &c.

We have put it in use on the Boston and Providence railroad, New Bedford and Taunton Branch railroad, Central railroad, N. J., Norfolk County, Rutland and Burlington, and as yet we have not had one complaint from them; and from what we have used of it, and witnessed, we do not hesitate to say that it is superior to anything in use for that purpose. It is simple in its construction, and easy of access, and the reservoir is held close to the shaft, and the oil and journal is perfectly secure from dust; they will run from four to six weeks without replenishing the oil. The brass in the box is changed very much easier than by any other plan that we have seen.

Very resp. yours,

W. W. FAIRBANKS, Agent.

Office Providence & Worcester R. R. Co.,
Providence, Dec. 17th, 1850.

H. F. ALEXANDER, Esq.,

Sir,—The "Lightner patent boxes" for cars and locomotives have been in use under a portion of the passenger cars and engines of this company for upwards of two years, and have given very great satisfaction.

Though combining many excellent qualities, their great superiority consists in the economy of oil.

The result of experiments upon this road shows the consumption of oil by the use of this box, to be not more than one sixth part the quantity consumed by the use of the common box.

With the common box, eight passenger cars, 64 wheels, running 90 miles per day, consumed in 12 months 520 gallons of oil, being an average of 8½ gallons per wheel per annum.

With the Lightner box the same cars running the same number of miles per day, during the same space of time consumed 73½ gallons of oil, being an average of 1½ gallon per wheel per annum.

So manifest are its advantages over any other box used by this company, it is intended to place it under all our cars as soon as practicable.

Besides the saving of oil, as they afford complete security from dust, we think them more durable than any other box in use.

Another advantage resulting from the use of this box is, cars run more easier than with the common box. The saving in fuel which it would effect, would of itself, we think be a sufficient inducement to use this box in preference to any other known to us.

Very respectfully,

ISAAC H. SOUTHWICK, Supt.

JOHN B. WINSLOW,
Supt. Machine Shop, P. & W. R. R.

Cambridgeport, April 5th, 1851.

H. F. ALEXANDER, Esq.

Sir,—This may certify that I have been engaged in the manufacture of railway cars since 1834, and have built for the different railroad companies cars of all descriptions to the amount of three millions of dollars, and have used on the above cars all kinds of journal boxes, and find that none give better satisfaction than the "Lightner patent box," both on account of the saving of oil and the arrangement for taking out and re-placing the composition by means of the sliding key, and other conveniences which no other box possesses.

Yours respectfully,

CHARLES DAVENPORT.

Worcester, March 17th, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—This is to certify that I have been for some years past engaged in building cars, and that I have tried most, if not all of the patent boxes, and have found Lightner's patent superior to all others as far as the saving of oil is concerned, also the ease with which they are fitted and exchanged in case they get out of order.

For the last three years, I have put them under all of the cars I have built, and in every instance they have given the most entire satisfaction.

Yours truly,

OSGOOD BRADLEY.

Office Union Works, So. Boston,
May 23d, 1851.

This certifies that I have applied Mr. J. Lightner's patent axle boxes to my locomotives and tenders for the past two years. I consider them superior to all others,—economical in their use, and possessing many important advantages not found in any other boxes.

SETH WILMARTH.

Office 15, R. R. Exchange, Boston,
June 1, 1851.

This is to certify, that we have known the success of Lightner's patent journal boxes upon various roads in New England the past three years, and have been led to examine their peculiar construction.—We are well satisfied of their merits, and have adopted them upon our small gravel cars, and take pleasure, as we ever have done, in recommending their use upon all roads where we are employed in the construction.

GILMORE & CARPENTER,
Contractors.

Amoskeag Manufacturing Co. Machine Shop,
Manchester, May 31, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—We are using the Lightner box on all the engines and tenders we build, and we are satisfied that it is the best box in use, and recommend the same to all those who purchase engines at our works.

Yours respectfully,

O. W. BAYLEY, Agt.

This is to certify that the Fitchburg railroad company having become satisfied of the superiority of J. Lightner's patent Axle Boxes for Railway Cars and Locomotive Tenders adopted the same.

and are bringing them into general use upon their road.

One year's experience with the above improvement, has fully convinced me that there has never been anything offered to the public for that purpose which possess such intrinsic value; in fact, this is an improvement which seems to overcome all the difficulties found in all the various kinds now in use. It possesses very many advantages over all others: Some of which are [first] the first cost is much less than that of most boxes in use. [Secondly] 75 per cent is saved in oil; one gill applied to each Journal once a month, or one quart to an eight wheel car, is all these boxes require per month [Thirdly] no dust can gain access to the Journal, which is constantly lubricated with clean oil; hence the saving in repairs of Journals and composition bearings, is a matter of importance. [Fourthly,] its construction is truly simple—not complicated, having nothing liable to become loose by constant and severe service. [Fifthly] for convenience there is nothing which approaches this improvement.—The composition bearings may be removed from the Journals of an eight wheel car, by one man, and returned, or duplicates, in twenty minutes, while under the car: the same would require two men, at least half a day with other boxes in use.—The trucks and wheels using these boxes, are free from oil and dirt, usually seen upon all railroad cars, at great expense to the corporation.

NATHL JACKSON.

Supt. Car Building and Repairs, F.R.R. Co.

Boston, March 9, 1849.

I hereby certify, that I have examined a box for Car Journals, invented by Mr. Lightner of Roxbury, Mass, and I have thought so well of it that I have adopted it on our railroad, I have known of its success on other roads.

S M. FELTON,

Supt. F. R. R.

Office of the Central R. R., N. J., }
Elizabethtown, May 1849. }

H. F. ALEXANDER, Esq.,

Dear Sir:—Your favor, [wishing to be informed how we liked Lightner's patent axle boxes for R.R. Journals,] has been duly received; in answer we would say, we have used the boxes on Locomotive tenders one year, more or less, and on our cars some six months. I consider them the best boxes in every respect, I have ever used, or even seen used on any other roads—for safety, durability and the economy pertaining to all the details connected with the boxes and Journals of R. R. Car wheels; and we shall adopt them upon this road.

Yours Respectfully,

JOHN O. STEARNS.

Supt. Central Railroad Co., N. J.

Manchester, N. H., Nov. }
1st, 1850. }

H. F. Alexander, Sir,

I have used "Lightner's Boxes" under all the Cars of the Manchester and Lawrence railroad, and feel no hesitation in saying that I think them to be the best boxes now in use.

Yours, &c.,

THEODORE ATKINSON, Agent.

Cheshire R. R. Office, Keene, }
March 5th, 1851. }

Mr. H. F. Alexander,

Sir,—Lightner's Patent Boxes have been used on the Cheshire R. R. about a year, and have given the highest degree of satisfaction.

All the Passenger Cars now in use, and a considerable number of Merchandise Cars are furnished with them, and they will take the place of the Common Boxes on all the cars as fast as circumstances will permit.

Very Resp't.

L. TILTON,

Supt. Cheshire R. R.

Boston and Worcester Railroad, }
Boston, April 1st, 1851. }

H. F. Alexander, Esq.,

Dear Sir,—Lightner's Patent oil saving box for railroad cars, has been adopted by this corporation; we are taking out the common and substituting the

Lightner's at the rate of fifty boxes per month; it will soon take the place of all others, as it is decidedly preferable to any heretofore used by this corporation.
G. TWITCHELL, Supt.

Statement of amount of oil used on 32 8-wheel freight cars, on the Boston and Providence Railroad (with Lightner's Boxes) from March 10, 1849, to February 27, 1851, and upon 12 8-wheeled passenger cars from September 8, 1849, to February 27, 1851.

FREIGHT CARS.

Amount Oil.	No. months.	Amount Oil.	No. months.
1.—21 pts.	10	17.—23½ pts.	14
2.—19 "	6	18.—23½ "	11
3.—25 "	13	19.—36 "	21
4.—18 "	7	20.—22 "	10
5.—22 "	12	21.—38½ "	24
6.—24 "	13	22.—29 "	23
7.—20 "	11	23.—35½ "	23
8.—21 "	11	24.—37½ "	23
9.—23½ "	10	25.—51 "	23
10.—21 "	9	26.—31½ "	24
11.—20 "	9	27.—28½ "	23
12.—21½ "	11	28.—36 "	23
13.—19 "	8	29.—50½ "	24
14.—25½ "	17	30.—50 "	23
15.—20½ "	10	31.—41 "	23
16.—31 "	18	32.—39½ "	23

Total, 925½ pts. 510

PASSENGER CARS.

1.—19½ pts.	18	7.—30 pts.	18
2.—25½ "	18	8.—25½ "	18
3.—33½ "	16	9.—29 "	18
4.—19 "	15	10.—46½ "	17
5.—15 "	15	11.—9 "	9
6.—22 "	18	12.—65½ "	17

Total, 340 pts. 197

Averaging 1 4-5 pints of oil for freight, and 1 7-10 for passenger cars per month only!

All orders and enquiries promptly attended to.

BRIDGES & BROTHER,

No. 64 Courtlandt st., New York.

July 25, 1851.

Trautwine on R. R. Curves.

By JOHN C. TRAUTWINE, Civil Engineer,
Philadelphia, Pa.

JUST published, accompanied by a Table of Natural Sines and Tangents to single minutes, by means of which all the necessary calculations may be performed in the field.

This little volume is intended as a field-book for assistants; and will be found extremely useful, as it contains full instructions, (with wood cuts) for laying out, and adjusting curves; with Tables of Angles, Ordinates, etc., for Curves varying from 13 miles, down to 146 feet Radius.

A portable Table of Natural Sines and Tangents to minutes, has for a long time been a desideratum among Engineers, independently of its use in laying out curves.

The volume is neatly got up in duodecimo; and handsomely bound in pocket-book form.

Sold by Wm. Hamilton, Actuary of the Franklin Institute, Philadelphia. Price \$1.

Also, "Trautwine's Method of Calculating Excavation and Embankment."

By this method, which is entirely new, (being now made known for the first time) the cubic contents are ascertained with great ease, and rapidly, by means of diagrams, and tables of level cuttings. Thin octavo; neatly half bound, \$1. For sale by Wm. Hamilton.
June 28, 1851.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices and of quality tried and approved for many years, on the oldest railways in this country.
RAYMOND & FULLERTON, 45 Cliff St.

CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by POWERS & WEIGHTMAN, manufacturing Chemists, Philadelphia.
Jan. 20, 1849.

To Chief Engineers, Directors of Railroads, Canals, etc.

A Civil Engineer and Surveyor, who has been professionally engaged under the British Government, East India Company, etc., is desirous of obtaining employment as an Assistant. No objection to the South or West. Address for one month to C. E. & S., American Railroad Journal office.
August 16, 1851.

To Engineers.

A NEW WORK on the Marine Boilers of the United States, prepared from authentic drawings, and illustrated by 70 engravings, among which are those of the fastest and best steamers in the country, has just been published by B. H. Bartol, Engineer, and is for sale at the store of
D. APPLETON & CO.,
Broadway

September 1, 1851.

Pneumatic process for making Foundations for Bridges, Piers, etc.

THE Attention of Engineers, Contractors, and Bridge Builders, etc., is directed to this method of forming secure foundations. Hollow Cylindrical piles from 8 inches to 10 feet in diameter may be sunk through sand, mud, clay, etc., to any required depth, and filled with concrete or masonry.

The efficacy and economy of the process has been demonstrated in the construction of numerous permanent works, at a much less cost than the use of any other method. (See evidence in Parliamentary enquiry, Railroad Journal, April 19, 1851.)

Contracts made, or licenses granted for the use of the invention in any part of the United States, by
CHARLES PONTEZ,
34 Liberty street, N. Y.

LOWMOOR IRON.

THE LOWMOOR IRON COMPANY having appointed Wm. BAILEY LANG their sole agent in America and Canada, he is now prepared to receive and execute all orders for Railway Tire Bars bent, welded, and blocked Railway Tires, Axle Piston Rods, and Boiler Plates. Also, plain, angle, rivet and every other description of Lowmoor Iron.

All communications respecting the above are requested to be sent to Wm. Bailey Lang, at his Steel Warehouse, No. 9 Liberty Square, Boston, or to the Lowmoor Iron Works, Bradford, Yorkshire, England.
30th Sept., 1851.

RAILROAD SPRINGS.

Fuller's Patent India-rubber Springs.

PRICE reduced to 50 cents per pound. The owners of this Patent now manufacture the Springs in their own Factory, and guarantee that each spring shall perform its required duty.

Purchasers guaranteed against adverse claims. They may have full confidence in the working qualities of the springs.

The suits brought against Ray & Co., will soon be brought to issue, and we await the result with satisfaction, having full confidence in the pure administration of the Laws.

The long advertisements put forth by Ray & Co. about prior invention of the spring are worthless; he has not proved prior invention, and cannot sustain his patent in a Court of Law.

For the owners of Fuller's Patent,

G. M. KNEVITT,

23 Courtlandt st., New York.

October 7, 1851.

Railroad Iron.

THE undersigned, Agents for British Manufacturers, continue to sell Railroad Iron of the best quality, and of any weight or pattern required; deliverable at any part of the United States or Canada.

They have now on hand, ready for delivery New York:

2,000 tons of an approved pattern, weighing about 60 lbs. to the yard.

WM. F. WELD & CO.,

42 Central Wharf, Boston.

Practical and Scientific Books

PUBLISHED BY

HENRY CAREY BAIRD,

SUCCESSOR TO E. L. CAREY, PHILADELPHIA.

For sale by Dewitt & Davenport, Tribune Buildings, New York, and Booksellers generally throughout the United States and Canada.

Now being published in Twelve Parts, price 25 cents each, the **PRACTICAL MODEL CALCULATOR**, for the Engineer, Machinist, Manufacturer of Engine work, Naval Architect, Miner and Millwright.—By Oliver Byrne, Compiler and Editor of the Dictionary of Machines, Mechanics, Engine Work and Engineering, and Author of various Mathematical and Mechanical works—illustrated by numerous Engravings; forming, when completed, one large volume, octavo, of nearly 600 pages.

It will contain such calculations as are met with and required in the Mechanical Arts, and establish models or standards to guide practical men. The tables that are introduced, many of which are new, will greatly economise labor, and render the everyday calculations of the *practical man* comprehensive and easy. From every single calculation given in this work other calculations are readily modeled, so that each may be considered the head of a numerous family of practical results.

The examples selected will be found appropriate, and in all cases taken from the actual practice of the present time. Every rule has been tested by the unerring results of mathematical research, and confirmed by experiment, when such was necessary.

The Practical Model Calculator, will be found to fill a vacancy in the library of the practical working man long considered a requirement. It will be found to excel all other works of a similar nature, from the great extent of its range, the exemplary nature of its well selected examples, and from the easy, simple and systematic manner in which the model calculations are established.

Parts 1, 2 and 3 now ready.

American Miller and Millwright's Assistant, By W. C. Hughes. 12mo., illustrated.....	\$1 00
Byrne's Practical Model Calculator. In 12 parts, each.....	25
Byrne's Treatise on the American Steam Engine. 8vo. [in press].....	
Booth's Encyclopedia of Chemistry. In one vol. royal 8vo, 974 pages, sheep.....	5 00
Builders' Companion. By A. C. Smeaton.—Seventy illustrations, 12mo., cloth.....	1 00
Cotton Spinner and Manufacturers' Companion. By Scott and Byrne. In one vol. 8vo., cloth, with large working drawings.....	3 50
Cabinet Maker and Upholsterer's Companion. 12mo., cloth.....	75
Dyer and Color Maker's Companion. 12mo., cloth.....	75
Elwood's Grain Tables. A new edition, in one vol. 12mo., cloth.....	1 00
Encyclopedia of Useful Knowledge. 8vo., illustrated.....	5 00
Fisher's Photogenic Manipulation. 16mo., cloth.....	62
Gregory's Mathematics for Practical Men. Illustrated, 8vo., cloth.....	1 50
Household Surgery, or Hints on Emergencies. By J. F. South, M.D. 12mo., cloth.....	1 25
Leslie's Complete Cookery. 41st edition, 12 mo., sheep.....	1 00
McRiff's Perfumery: its Use and Manufacture. 12mo., cloth.....	1 00
Moore's Treatise on Tanning, Currying, and Leather Dressing in General. In one vol. large 8vo., [in press].....	
Norris' Hand-book for Locomotive Engineers. By Septimus Norris. 12mo., cloth.....	1 50
Neill's Fruit, Flower and Kitchen Garden. Illustrated by numerous plates, 12mo. cloth.....	1 25
Overman on the Manufacture of Iron and Steel. Illustrated, 8vo., cloth, new edition.....	5 00
Practical Metal Workers' Assistant. By C. Holtzapffel, with numerous illustrations, 8vo., cloth.....	4 00
Painter, Gilder, and Varnishers' Companion. New edition, 12mo., cloth.....	75
Randall's Sheep Husbandry in the South. Illustrated, 8vo., cloth.....	1 25
Steam for the Million. 8vo., paper.....	37

Best Cast Steel Axles & Tires, (A NEW ARTICLE,)

For Railroad Carriages and Locomotives.

THE quality of this Steel is sufficiently attested in the announcement that it has carried off the first prizes awarded at the World's competition of 1851, in London. The axles are in general use on the Continent, and are now offered in competition with any other that can be produced; and to be tested in any way that may be desired by the Engineers of the United States, either by impact or by torsion. This Steel is manufactured by Fried Krupp, Esq., of Essen, in Renish Prussia, represented in the United States by

THOS. PROSSER & SON,
28 Platt st., New York.

November 1.

To Railroad and Canal Companies, Contractors, etc.

THE Undersigned wishes to direct the attention of Chief Engineers and Contractors to the facilities he possesses for supplying them with workmen, laborers, etc. of any description, and also to remind them that he forwards such men to whatever destination they may be required.

Companies or Contractors desirous of receiving peaceable and industrious men, will be promptly supplied at the shortest possible notice.

C. B. RICHARDS,
No. 85 Greenwich Street, New York.

REFERENCES:—Chas. H. Webb, Esq., Supt. of the St. George's and British Protective Society, New York; Messrs. Harris and Leech, Philadelphia, Wm. P. Malburn, Esq., Albany.

To Stone Masons.

THE NEW ALBANY AND SALEM RAILROAD Company have about 10,000 c. yards of Abutment Masonry to let at private contract, to be completed by the 1st of July, 1852.

To contractors who can produce testimonials of character for ability as STONE MASONS, fair, remunerating prices will be given.

Early applicants, by securing the work now offered, will gain advantages over competitors for the erection of an additional 15,000 yards, to be let out early next spring, in bridging the streams between Bedford and Michigan City, via Bloomington, Gosport, Crawfordsville and Lafayette, (the most productive and healthy region in Indiana,) by the knowledge they will have acquired of the resources of the country.

Application may be made in person, or by letter addressed to the undersigned, at New Albany, Indiana.

S. B. WILSON, Engineer.
Engineer's Office, New Albany,
Sept. 29th, 1851.

Engine Waste.

CLEAN WASTE for Locomotive and Steamboat Engines, in lots as wanted; also, superior Steam Packing. Orders, with explicit directions for forwarding, should be addressed to

J. MORTIMER HALL,
36 South st., New York.

November 1. 3m

Notice to Contractors.

SEALED proposals will be received at the office of the company in Galesburg, on Wednesday, the 24th day of December next, for the grading, bridging and masonry of the Central Military Track road. The road will be nearly fifty miles in length, and embraces a variety of work well worth the attention of contractors.

Proposals will also be received at the same time and place, for the Cross Ties, to be delivered at different points on the line.

Contractors will be expected to state in their bids the amount of the stock of the company they will be willing to take for work done; and preference will be given to those bidders who will take the greatest amount of stock.

Plans, profiles, specifications, etc. will be exhibited ten days previous to the day of letting, and all the necessary information with regard to the manner of its construction, etc., furnished by the engineer of the Board.

By order of the Board of Directors.

WM. McMURTRY, President.
Geo. G. LANPHERE, Secretary.

To Railroad Companies, etc.



The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

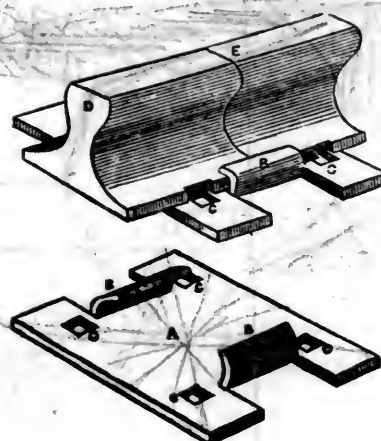
I also invite attention to an improved PATENT SPRING LOCK, for SLIDING Doors to Freight and Baggage Cars, now in use upon the Pennsylvania Central, Greensville and Columbia, S.C., Reading, Pa., and other Railroads.

Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH,
46 South 8th St. Philadelphia.

May 9, 1851.

The American Railroad Chair Manufacturing Co.



ARE prepared to make WROUGHT IRON RAIL ROAD CHAIRS, of various sizes, at short notice.

By use of the WROUGHT IRON CHAIR, the necessity of the wedge is entirely done away—the lips of the chair being set, by means of a sledge or hammer, close and firmly to the flange of the rail.

The less thickness of metal necessary in the Wrought Iron Chair gives much greater power and force to the spikes when driven—and consequently a much less liability to the spreading of the rails by reason of the spikes drawing or becoming bent.

The less weight necessary in the Wrought Iron Chair, will enable us to furnish them at a cost much below that of CAST IRON CHAIRS.

DESCRIPTION OF THE ABOVE CUTS.

Figure 1 is a perspective view of the rail secured in the chair, and fig. 2 is a perspective view of the chair itself. D, E, are sections of two rails placed together, and secured at the joint on the chair by the jaws B, B. The chair is bolted down by spikes C, C. In fig. 2, the chair is represented as made of a single block or plate A of wrought iron.

The chair is set in its proper place on the track, spiked down, and the ends of the two rails brought together within the jaws as represented in fig. 1.

For further information address,

N. C. TROWERIDGE, Secretary,
Poughkeepsie, N. Y.

June 1, 1851.

Railroad Commission Agency.

THE Subscriber offers his services to Railroad Co's and Car Makers for the purchase of equipment and furniture of roads and depots and all articles and materials required in the construction of cars, with cash or approved credit. No effort will be spared to select the best articles at the lowest market price.

He is sole Agent for the manufacture of the ENAMELED CAR LININGS, now in universal use. The best Artists are employed in designing new styles, and he will make to order pieces with appropriate designs for every part of the car, in all colors, or with silver grounds and bronzed or velvet figures.

He is also Agent for Page's Car Window Sash Fasteners, which is preferred by all who have used it to any other.

CHARLES STODDER,
75 Kilby st., Boston.

June 20, 1851.

3m.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

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American Railroad Journal.

Saturday, December 20, 1851.

New York and Erie Railroad.

There is a great deal of speculation afloat as to the probability of the payment of a January dividend by the New York and Erie railroad. We are not in the secrets of the company, and know nothing personally about the matter, but we presume that a dividend will be declared, though the constant rumors to the contrary indicate an opinion adverse to such a proceeding on the part of some of the directors. We have no other interest in the question, than that the company should adopt such a course as is best adapted to promote its welfare, and we will briefly state what we believe to be its present condition, and what should be its future policy.

What is the present financial condition of the Erie company? We have never been admitted into the secrets of its management, and if we had been, we probably could not have formed a more correct opinion of its real condition than from a general inference derived from the experience of similar enterprises. The career which the Erie is just commencing, will be the career which older roads have run, and we can read the present condi-

tion and future history of the former, in what has been the past history and experience of other roads.

Now if there be any one fact which stands out with a marked prominence in the history of railroads, it is, that their cost *always* exceeds the estimates. This is inevitable; first, for the reason that estimates never do, and never can, cover all the items of expenditure; and, secondly, because the estimates are always below the cost. No foresight can include all the items that make up the aggregate, and few engineers have the courage to put their estimates up to their real convictions of the cost of a piece of work. These facts have tended to throw more discredit upon railroads than all other causes. The public, trusting to the representations made to them, are induced to take stock in a railroad. They are told they can have a road, equipped to their hands, for so much money. The money is subscribed, paid in and expended, but instead of being presented with a finished work, according to expectation, the stockholders are frequently called upon for new subscriptions of stock, or issue of bonds, and in many cases the call is so often repeated, that the first subscription, which was supposed to be sufficient to complete the road, is completely buried under the weight of subsequent loans. The history of the Vermont Central railroad is a case exactly in point: an emphatic illustration of the truth of the above remarks. If that road accomplishes no other good, it will be of some use in showing the tendency into which all are likely to fall, and in warning others against the misfortunes which have fallen upon that road.

But the history of the Erie road presents sufficient proof of the truth of what we have said. There has been a wide discrepancy between the promise and performance here. But this failure to realise promises held out, implies no want of integrity, nor should it impeach the capacity of those who made them. Such persons acted under the guidance of the best lights that could be obtained.—They based their opinion upon *given* data, and not upon what the *future* might disclose. Time brings new facts to light, and makes additional demands, which could not have been foreseen, nor interred from past experience.

Something over a year since, and some six months before the opening of the Erie railroad, an estimate was made of the probable amount necessary to complete it. This amount was secured. The road was opened according to promise, and its earnings

have we think exceeded expectation. In these respects, all has been realised that was promised.—

Now we apprehend that no person believes that the sum stated as necessary to complete the road was adequate to this purpose. The road has been *opened, not completed*, nor have we any doubt that the company has been compelled to incur a floating debt to a considerable amount, to place the road in its present condition; and we know that a very large sum beyond the present means of the company, will be required to place the road in a situation to realise its highest usefulness, and secure the greatest profit to the stockholders.

We assume these inferences to be facts. We go as far as any one to award the meed of praise to the energy and perseverance of the directors and managers of this road, but the Erie is by no means free from the conditions which we find common to all other lines. It has had its full share of obstacles and difficulties to encounter, and the result in this case will present us the aggregate results of the experience of other roads.

The company, in our opinion, is not only delinquent upon the old, but is now called upon to make new expenditures. The first and most pressing of these is a double track. This the company *must* have to do a profitable business. The single track, when pushed to its utmost capacity, is hardly adequate to the business now pressing upon it. Without an additional one, any great increase of business, instead of adding to the income, would tend to cripple the operations of the road, by the confusion and disorder it would necessarily produce in the running of the trains. If, therefore, what is now offering is equal to the capacity of the road, what will its condition be, when the extensions west, and its numerous tributaries on the north, shall be completed? Early in the spring, the Lake Shore road will be completed to Cleveland. Within a year from this time, the Buffalo and New York City, and the Buffalo and Conhocton Valley roads, will be completed. These are two parallel roads to Lake Erie. The Canandaigua and Corning road is pushing forward to the same terminus. A road is also in progress from Sodus Bay on Lake Ontario, which will be another tributary to the Erie. Here then are four lines of railroad all falling upon the Erie road, each of which, in our opinion, will bring a greater amount of business to the latter than the main trunk beyond Corning. From that place, the Erie road will have in the above

line four tracks, instead of one. How is all the business of these four to be accommodated after their junction with their main trunk? There is one answer to this, and that is by a *double track*.—The necessity of this is not only demonstrable, but is fully admitted by the directors themselves.

The Erie road, therefore, must have more money, not only to wipe out old scores, but for new works. It is in deciding this matter, that the question of the expediency of declaring a dividend, or applying the money to construction account, comes up.

If the road were the property of one, or a small number of persons, there could be no doubt as to the true course to be pursued. In such a case, the investment should take care of itself, and nothing would be gained by taking the proceeds for another object, and hiring an equal amount of money for investment in the road. We have supposed the interest of such a person, or class, to be entirely beyond the influence of public opinion. But the case is different with the owners of the stock of the Erie. Should there fail to be a dividend, the stock would certainly suffer a very great depreciation. This stock has cost the present holders a high price. Much of it has been purchased for investment. We presume, too, that a very large amount of it is so held, that any serious decline would produce very disastrous results in the business community. The holder of 100 shares of Erie, has what represents a market value of \$8,500. He may have hypothecated this stock, or made it the capital on which his business is based. An excessive depreciation would ruin persons placed in such a situation. The immediate effect of a fall of 20 per cent, would be the same as if an equal amount of property should be destroyed. The consequences would extend themselves to every branch of business and every species of property. The non-payment of a dividend would also bear with great hardship upon those who have invested in the stock relying upon its dividends as their means of support.

If the road, therefore, can make a regular annual dividend of 7 per cent, this will maintain the stock at or near its present figure. So long as the stock can be sustained, there will be little difficulty in obtaining money on bonds. But if the former is suffered to decline, to the extent to which it would fall, without a dividend, the disastrous results which we have pointed out would not only occur, but any new issue of bonds would be unsaleable. The company, in such an event, would find itself in a dilemma from which it might be difficult to extricate itself. We are fully satisfied that it is for the interest of the company, and the public, that the former should play a bold game. The additional amount wanted to construct a double track, would add much more to the value of the stock than its cost. The question then resolves itself into this: how can this sum be raised with the least public loss and inconvenience? The answer is: by paying dividends, and hiring money. This course would keep up the credit of the concern; a different one would ruin it.

In this discussion, we have made no reference to the estimates of the earnings, nor to any opinion as to the real value of the stock. For the purposes of the argument, we have assumed the estimates of the directors in these respects are correct. Upon this assumption, we are confident our views are correct. If the stock shall prove less valuable than the present estimate, it becomes still more important that they should be followed.

In conclusion, we believe that the company would

be much more benefitted by having its true position and wants placed in a straightforward manner before the public, than by the wholesale and senseless puffery of a portion of the city press. If by dint of importunity, these people should make themselves believed, the company may find itself in a position from which it may be very difficult to recede. If the road "has ceased to be an experiment," and is earning ten per cent on its cost, what on earth does the company want of more money? If in the face of all these statements, apparently acquiesced in by the company, they should come upon the market for another loan, would they not place themselves in a most false and unenviable position?—What statements would be credited, after such a spectacle? There is no necessity for assuming this false position. The road will prove an inestimable one to this city, and the company are entitled to all the money necessary to complete it. They should take and maintain this ground, and not assume false and untenable positions, which they must certainly yield.

Plattsburgh and Montreal Railroad

The Plattsburgh and Montreal railroad company was organized on the 28th March, 1850, but no part of the construction of the road was commenced until about the 1st of August last.

This road is located entirely within the county of Clinton, and extends from the village of Plattsburgh, in a northerly direction, through the towns of Beekmantown, Chazy and Moores, to the Canada boundary line, at a point about two miles north of the village of Moores, where it will connect with the Lakes, St. Louis and Province Line railroad, [now in the course of rapid construction,] and extending from thence to Caughnawaga, on the south bank of the river St. Lawrence. A connection of the latter place with the city of Montreal will be established by means of a ferry, of a little over a mile, across the St. Lawrence from Caughnawaga to Lachine, on the Island of Montreal, and from thence communicating directly with the city of Montreal and Lachine railroad, now in full operation. The entire line of railroad from Plattsburgh to Caughnawaga, when completed, will be fifty two miles. The entire line from the Champlain to the St. Lawrence, is designed to be ready for the track by the 1st of May, and to be in complete running order by the 1st of August next. No portion of the road is in operation.

Amount of capital, as by charter and association.....	\$500,000 00
Amount of stock subscribed.....	78,450 00
Total amount of capital paid in.....	12,460 00
Amount expended for grading and masonry.....	2,647 20
" " land, damages and fences.....	5,054 35
" " engineering, etc....	3,080 28

Projected Tubular Bridge across the Mersey.

Mr. Cunningham, architect, of Liverpool, has submitted a project to the directors of the various railway companies interested in the communication between Birkenhead and Liverpool, for a railway to cross the Mersey, and thus connect Birkenhead and Liverpool for all kinds of transit. Mr. Cunningham proposes to sink an iron tube in the bed of the river, buried so completely below the surface thereof, that there would be no more obstruction to the currents than at present. The tube would have perpendicular sides and an arched roof. It would be placed in a prepared bed, and would be protected outwardly by various contrivances. Internally, there would be two lines of rails running on each side of the tube, with a passage in the middle for pedestrians. The entire work, it is estimated, would cost not more than £250,000. It would form a complete means of transit for goods, railway passengers, and pedestrians between Liverpool and Birkenhead, besides opening a communication to and from Liverpool for all railways feeding the Cheshire junction.—*London paper.*

From the Albany Evening Journal. Railroad Statistics.

We have compiled, from the reports made to the State Engineer and Surveyor, a statement of the operations of the annexed roads, for two years ending with the 30th Sept:—

SYRACUSE AND UTICA RAILROAD.

Total amount of capital stock paid in.....	\$2,400,000 00
Funded debt, as by last report.....	48,000 00
Total amount now of funded and floating debt.....	103,000 00
Rate of interest paid on debt per annum, 7 per ct. 1850. 1851.	
Cost of road & equipment.....	\$2,490,083 99 \$2,570,981 71
Length of road, 53 miles. Length of double track, including slidings, 57 miles.	
No. passengers carried in cars.....	340,945 449,870
No. tons freight carried in cars..... (no return)	86,849
Expenses of maintaining road.....	\$62,853 10 \$56,865 21
Expenses of repairs and machinery....	52,008 58 42,193 47
Expenses of operating the road.....	87,869 46 112,950 75

Earnings and Cash Receipts.

Earnings from passengers.....	\$366,077 07 \$371,935 86
Earnings fm. freight.....	90,878 97 111,090 15
" " other sources.....	15,819 73 15,221 90
Total earnings....	\$472,775 77 \$498,247 91
Payments, other than for Construction.	
Payments for transportation expenses.	\$202,728 14 \$212,009 43
Payments for interest.....	9,931 30 2,292 50
" dividends.....	190,280 00 239,435 00

ROCHESTER AND SYRACUSE RAILROAD.

Capital stock as by charter and articles of association....	\$5,549,800 00
Amount of stock subscribed.....	5,549,800 00
Amount paid in, as by last report....	3,364,979 75
Total amount now paid in of capital stock.....	4,170,000 00
Funded debt, as by last report.....	916,000 00
Total amount now of funded debt....	821,000 00
Average rate per annum of interest on funded debt, 6 per cent. 1850. 1851.	
Cost of road & equipment.....	\$4,200,000 00 \$4,861,361 94
Length of road, 104 miles.	
No. passengers carried in cars.....	93,561 513,240
Number of tons of freight carried in cars.....	9,604 83,569
Expenses of maintaining road.....	\$16,247 68 \$78,017 22
Expenses of repairs of machinery.....	20,500 34 75,431 91
Expenses of operating the road.....	24,128 56 167,527 02

Earnings and Cash Receipts and Payments.

Earnings from passengers.....	\$176,991 47 \$690,948 56
Earnings fm. freight.....	24,444 74 237,530 47
Earnings from other sources.....	none. 22,033 38
Receipts from passengers.....	176,991 47 690,948 56
Receipts fm. freight..	none. 212,005 82
Receipts from other sources.....	none. 11,633 38
Payments other than for Construction.	
Payments for transportation expenses.	\$90,876 58 \$320,976 15
Payment for interest.....	none. 53,790 00
" dividends.....	none. 370,688 99

But a few months prior to the making up of the report in 1850, the Syracuse and Auburn, and the Auburn and Rochester, were consolidated, and it is highly probable that the report of that year embraces only the operation of one of the roads up to the day of consolidation, and the remainder is taken from the operations after they were united.

LONG ISLAND RAILROAD.

No report was received from the company last year.

Capital stock as by charter.....	\$3,000,000 00
Amount of stock subscribed.....	3,000,000 00
Amount paid in, as by last report, and now paid in.....	1,825,148 28
Funded debt, as by last report.....	426,670 63
Total amount now of funded debt....	512,957 25
Floating debt, as per last report.....	14,335 62
The amount now of floating debt....	7,403 81
Total amount now of funded and floating debt.....	520,361 06
Average rate per centum of interest on funded debt, 6 per cent.	
Cost of road and equipment.....	2,339,938 64
Length of road, including the Brooklyn and Jamaica, 95 miles.	
Number of passengers carried in cars.....	213,570
Number of tons of freight carried in cars.....	32,000
Expense of maintaining road.....	\$21,768 15
Expenses of repairs of machinery....	26,306 30
Expenses of operating the road.....	94,793 05

Earnings and Cash Receipts and Payments.

Earnings from passengers.....	\$132,289 11
" freight.....	56,486 06
" other sources.....	4,531 00
Payments for transportation expenses.....	24,086 85
Payments for interest.....	40,682 39

BUFFALO AND ROCHESTER RAILROAD.

This road is a consolidation of the Attica and Buffalo and the Tonawanda railroads. Separate reports have been received last year:—

Capital stock as by charter, and paid in.....	\$1,825,000 00
Total amount now of funded and floating debt.....	160,903 00
Average rate of interest per annum on funded debt, 6½ per cent.	
Cost of road and equipment.....	2,228,976 89
Length of road, 76 miles; length of double track, 1 mile.	
Number of passengers carried in cars.....	322,985
Number of tons of freight carried in cars.....	48,880
Expenses of maintaining road.....	28,089 12
Expenses of repairs of machinery....	23,731 33
Expenses of operating the road.....	84,563 07

Earnings and Cash Receipts.

Earnings from passengers.....	366,245 68
" freight.....	90,348 50
" other sources.....	12,500 00
Receipts from other sources, including \$76,000 from sale of bonds....	95,098 16

Payments other than for Construction.

Payments for transportation expenses.....	133,633 52
Payments for interest.....	14,691 45
Payments for dividends.....	91,489 16
Payments to sinking fund on acc't. of debt to State.....	5,000 00
Payments to subscription to the Buffalo and State Line railroad.....	89,878 32
Payments for old bonds of Attica and Buffalo and Tonawanda railroad..	77,500 00

SCHENECTADY AND TROY RAILROAD.

Capital stock as by charter and paid in.....	\$650,000 00
Funded debt, as by last report.....	59,700 00
Total amount now of funded debt....	73,800 00
Floating debt, as per last report....	1,698 89
Amount now of floating debt.....	2,654 96
Total amount now of funded and floating debt.....	76,454 96
Average rate per annum of interest on funded debt, 7 per cent.	

	1850.	1851.
Cost of road & equipment.....	\$680,046 32	\$681,046 86
Length of road, 20½ miles.		
Number of passengers carried in cars.....	56,812	70,473
Number of tons of freight carried in cars.....	17,031	15,898
Expenses of maintaining road.....	\$17,069 33	\$9,857 44
Expenses of repairs of machinery....	13,278 76	11,970 54
Expenses of operating the road.....	29,919 62	34,440 20

Earnings and Cash Receipts and Payments.

Earnings from passengers.....	\$20,539 80	\$28,652 01
Earnings fm. freight..	14,926 89	16,263 88
Earnings from other sources.....	879 00	1,331 43

Payments other than for Construction.

Payments for transportation expenses.....	\$60,267 71	\$56,268 18
Payments for interest.....	2,381 11	3,014 36

CAYUGA AND SUSQUEHANNA RAILROAD.

Capital stock as by charter.....	\$500,000 00
Amount of stock subscribed and paid in.....	168,000 00
Total amount now of funded debt....	300,000 00
Floating debt as per last report.....	134,849 83
Amount now of floating debt.....	231,452 53
Total amount now of funded and floating debt.....	531,452 53
Average rate per annum of interest on funded debt, 7 per cent.	

	1850	1851
Cost of road & equipment.....	\$514,824 17	\$617,313 26
Length of road 35 miles		
No. of passengers carried in cars.....	25,653	27,731
No. of tons freight carried in cars.....	8,886	13,897
Expenses of maintaining road.....	\$2,301 19	\$5,904 58
Expenses of repairs of machinery....	10,307 86	5,320 72
Expenses of operating the road.....	31,956 91	22,781 65

Earnings and Cash Receipts and Payments.

Earnings from passengers.....	\$33,600 63	20,698 41
" freight.....	10,417 22	30,792 27
" other sources.....	4,207 25	24,399 59
Receipts from passengers.....	33,600 63	20,698 41
" freight.....	9,790 65	20,289 77
" other sources.....	1,627 69	24,399 59

Payments other than for Construction.

Pay'ts for transportation expenses.....	30,810 91	34,006 95
" for interest.....	15,486 74	9,416 06

BUFFALO AND NIAGARA FALLS RAILROAD.

Capital stock as by charter and subscribed.....	\$393,750 00
Amount paid in, as by last report....	256,250 00
Total amount now paid in of capital stock.....	392,866 70
Funded debt, as by last report.....	21,670 00
Total amount now of funded debt....	19,670 00
Floating debt, as per last report....	12,495 00
Amount now of floating debt.....	5,178 36
Total amount now of funded and floating debt.....	24,848 36
Average rate per annum of interest on funded debt, 7 per cent.	

	1850.	1851.
Cost of road & equipment.....	\$428,241 39	\$440,249 46
Length of road, 22 miles.		
No. of passengers carried.....	124,683	150,992
Number of tons of freight carried.....	not rep.	3,402
Expenses of maintaining road.....	1,480 89	8,765 30
Expenses of repairs of machinery....	5,215 83	7,195 68
Expenses of operating the road.....	10,521,94	14,588 14

Earnings and cash receipts and payments.

Earnings from passengers.....	\$67,979 49	\$83,677 44
" freight.....	4,316 58	6,066 10
other sources.....	1,000 00	1,000 00

Payments other than for construction.

Payments for transportation expenses....	\$17,218 66	\$30,549 12
" for interest.....	2,963 00	4,017 36
" for dividends.....	25,421 00	21,715 22

OSWEGO AND SYRACUSE RAILROAD.

Capital stock as by charter and paid in.....	\$350,000 00
Funded debt, as by last report.....	200,000 00
Total amount now of funded debt....	200,000 00
Amount now of floating debt.....	10,463 67
Total amount now of funded and floating debt.....	210,413 27
Average rate per annum of interest on funded debt, 7 per cent.	

	1850.	1851.
Cost of road & equipment.....	\$571,774 21	\$588,678 02
Length of road, 35 miles.		
No. passengers carried in cars.....	77,161	80,288
No. of tons of freight carried in cars.....	79,49	19,992
Expenses of maintaining road.....	\$14,925 63	\$13,068 31
Expenses of repairs of machinery....	3,019 19	6,007 39
Expenses of operating the road.....	20,998 10	26,087 50

Earnings and Cash Receipts and Payments.

Earnings from passengers.....	\$57,118 33	\$57,710 51
Earnings fm. freight..	9,061 32	13,022 61
Earnings from other sources.....	12,191 96	22,682 09
Receipts from passengers.....	57,118 33	57,710 51
Receipts fm. freight..	9,061 32	12,635 82
Receipts from other sources.....	11,903 20	23,514 71

Payments other than for Construction.

Payments for transportation expenses.....	38,942 92	45,163 20
Payments for interest.....	14,000 00	14,000 00
" dividends.....	14,001 00	12,250 00

BUFFALO AND STATE LINE RAILROAD.

Capital stock by charter.....	\$1,000,000 00
Amount of stock subscribed.....	791,000 00
Amount paid in, as by last report....	31,932 45
Total amount now paid in of capital stock.....	605,926 41
Total amount now of funded and floating debt.....	87,177 20
Average rate per annum of interest on funded debt, 7 per cent.	

Cost of Road and Equipment

	1850.	1851.
For grading and masonry.....	\$18,365 56	\$271,866 81
Bridges.....	1,656 00	11,477 57
Superstructure, including iron.....		152,064 24
Land, land damage and fences.....	5,589 37	176,341 61
Engineering & agencies.....	6,509 22	28,946 39
Total.....	\$32,120 15	\$640,696 62
Length of road, 69 miles. Length of road laid, 91-13th miles.		

HUDSON AND BERKSHIRE RAILROAD.

Capital stock as by charter.....	\$450,000 00
Amount of stock subscribed.....	380,000 00
Amount paid in, as by last report, including \$50,000 paid by assessment.....	425,000 00
Funded debt, as by last report.....	325,000 00
Floating debt, as per last report, interest due not included.....	49,149 92
Amount now of floating debt, including \$3,000 not included last year..	48,000 00
Total amount now of funded and floating debt.....	373,000 00
Average rate of interest per ann. on funded debt, 6½ per cent.	

	1850.	1851.
Cost of road and equipment.....	\$821,331 45	\$823,331 45
Length of road, 31½ miles.		
Number of passengers carried.....	33,491	45,512
" tons of freight carried.....	23,809	37,145
Expenses of maintaining road.....	\$4,527 00	\$5,564 08
" repairs and machinery.....	2,874 28	2,995 53
" operating the road.....	19,918 60	21,743 79

Earnings and Cash Receipts and Payments.

Earnings fm. passengers.....	\$14,771 63	\$19,193 97
" fm. freight.....	25,269 28	36,054 76
" other sources.....	1,000 00	1,000 00
Receipts fm. passengers.....	14,771 63	19,192 97
" from freight.....	24,769 28	34,500 00
" other sources.....	1,000 00	1,000 00

Payments other than for Construction.

Payments for transportation expenses.....	\$27,349 88	\$30,403 40
Payments for interest.....	13,191 03	18,050 00

SACKETT'S HARBOR AND ELLISBURGH RAILROAD.

Capital stock, as by charter.....	\$175,000 00	
Amount of capital stock subscribed.....	175,000 00	
Amount paid in, as by last report.....	24,778 68	
Total amount of capital stock now paid in.....		66,613 64

Cost of Road and Equipment.

	1850.	1851.
For grading and masonry.....	\$18,639 66	\$50,815 87
Bridges.....		120 00
Superstructure.....	286 65	591 30
Land, land damages and fencing.....	427 72	8,910 29
Engineering, agencies, etc.....	9,534 94	8,480 35

Total.....	\$22,888 97	\$68,917 81
Probable length of road, 17½ miles. No portion in operation.		

ALBANY AND SCHENECTADY (MOHAWK) RAILROAD.

Amount of capital stock paid in.....	\$1,000,000 00	
Funded debt, as by last report.....	700,000 00	
Total amount now of funded and floating debt.....		716,665 60
Average rate of interest per annum on debt.....		64 per ct.
Cost of road and equipment.....	1,740,449 97	
Length of road, about 114 miles; double track entire length. Miles run by passenger trains, 50,673; no. freight, 44,162.		

	1850.	1851.
Freight carried on cars.....	63,012	92,058
Passengers carried in cars.....	281,279	303,045
Expense of maintaining road.....	\$19,009 10	\$14,273 23
Expense of repairs of machinery.....	5,924 87	9,900 00
Expense of operating road, including canal tolls.....	66,247 01	72,516 12

Earnings and Cash Receipts.

Earnings fm. passengers.....	\$132,297 69	\$146,649 61
Do. from freight.....	70,242 69	87,432 61
Do. other sources.....	6,134 50	5,765 50
Total earnings.....	\$208,581 88	\$239,847 75
Current expenses.....	91,171 98	103,689 35

Net earnings.....	\$117,412 90	\$136,158 40
For interest.....	38,808 67	49,353 96
For dividends.....	70,000 00	70,000 00
To surplus fund.....	8,604 23	16,804 44
Total amount of surplus fund.....	25,000 00	41,804 44

The rate of dividend in 1851, was seven per cent on the capital. The increase in the amount of interest paid, was caused no doubt by the higher rates paid on the floating debt.

WATERTOWN AND ROME RAILROAD.

Capital stock as by charter.....	\$1,500,000 00	
Amount of stock subscribed.....	890,100 00	
Amount paid in, as by last report.....	467,636 37	
Total amount now paid of capital stock.....		659,715 78
Funded debt, as by last report.....	200,000 00	
Total amount now, of funded debt.....		442,000 00
Amount now, of floating debt.....		53,385 26
Total amount now, of funded and floating debt.....		495,385 26
Average rate per annum of interest on funded debt, 7 per cent.		

	1850.	1851.
Cost of road and equipment.....	\$603,457 52	\$1,133,397 36
Length of road 97 miles—length of road laid, 72 miles.		
Number of passengers carried.....	2,601	56,907
Number of tons freight carried.....	680	34,307
Expenses of maintaining road.....	\$430 17	\$13,960 12
Expenses of repairs of machinery.....	none.	1,828 34
Expenses of operating the road.....	274 44	20,773 41

Earnings and Cash Receipts and Payments.

Earnings fm. passengers.....	\$1,043 23	\$37,870 97
" from freight.....	1,089 12	48,132 66
" other sources.....	none.	7,865 01
Receipts fm. passengers.....	1,043 23	37,369 59
" from freight.....	1,089 12	39,965 61
" other sources.....	none.	5,216 82

Payments other than for Construction

For transportation expenses.....	\$262 89	\$35,561 87
For interest.....	none.	35,908 29

This road was only partially constructed last year. The average length of the road operated this year was forty-one miles, the trains having run to Watertown but twenty one days in this year.

New Orleans.

The people of New Orleans have sent a delegation to Nashville, Tennessee, headed by James Robb, Esq., an eminent banker of that city, for the purpose of enlisting the co-operation of the people of Tennessee in the proposed railroad from New Orleans to Nashville.

"This mission," says the Nashville Banner, "has been made the subject of a special message from his Excellency, Governor Campbell, to the legislature, which was promptly considered by that body, and an invitation extended to the members of the delegation to make an address explaining its object. Mr. James Robb, the chairman, on behalf of the delegation, responded to this invitation; and, on Tuesday evening, delivered in the Hall of Representatives, an address that was characterized by good taste and very enlarged views on the subject of internal improvements, agriculture, and manufactures, which we are glad to perceive awakening a wide-spread spirit of interest and enthusiasm in all the States of the southwest."

New Orleans is certainly waking up; but whether she will accomplish anything after waking up remains to be seen.

Lafayette, Oxford and Middleport Railroad.

A meeting of the citizens of the counties of Benton and Tippecanoe, Ind., and of Iroquois county, Illinois, was held at Oxford, Benton county, on the 20th of November, to consider the propriety of constructing a railroad from Lafayette, Ind., by the way of Oxford to Middleport, at which point, or near which, it will intersect the eastern branch of the Illinois Central railroad.

Resolutions were adopted and a committee appointed to prepare petitions asking a grant of land from Congress to aid in the construction of the road.

A committee was also appointed to confer with the Central railroad company of this State, with reference to a connection with their road.

Census of 1850.

Continued from Page 788.

Taking the 31 States together, their area is 1,485,870 square miles, and the average number of their inhabitants is 15.48 to the square mile. The total area of the United States is 3,220,000 square miles, and the average density of population is 2,719 to the square mile.

The areas assigned to those States and Territories in which public lands are situated, are doubtless correct, being taken from the records of the land office; but as to those attributed to the older States, the same means of verifying their accuracy, or the want of it, do not exist. But care has been taken to consult the best local authorities for ascertaining the extent of surface in those States, and as the figures adopted are found to agree with, or differ but slightly from those assumed to be correct at the general land office, it is probable that they do not vary essentially from the exact truth.

The area of some of the States, as Maryland and Virginia, are stated considerably below the commonly assumed extent of their territory, which may be accounted for on the supposition that the portions of the surface within their exterior limits covered by large bodies of water, have been subtracted from the aggregate amount.

The statistics of mortality, for the census year, represent the number of deaths occurring within the year at 320,194, the ratio being as 1 to 72.6 of the living population, or as 10 to each 726 of the population. The rate of mortality in this statement seems so much less than that of any portion of Europe, that it must at present be received with some degree of allowance.

Should a more critical examination, which time will enable us to exercise, prove the returns of the number of deaths too small, such a result will not affect their value for the purposes of comparison of one portion of the country with another, or cause with effect. The tables will possess an interest second to none others in the world, and the many valuable truths which they will suggest, will be found of great practical advantage.

MANUFACTURES.

The period which has elapsed since the receipt of returns has been so short as to enable the office to make but a general report of the facts relating to a few of the most important manufactures.

If, in some instances, the amounts of capital invested in any branch of manufacture should seem too small, it must be borne in mind that where the product is of several kinds, the capital invested not being divisible, is connected with the product of the greatest consequence. This, to some extent, reduces the capital invested in the manufacture of bar iron in such establishments where some other article of wrought iron predominates—sheet iron for example.

The aggregate however, of the capital invested in the various branches of wrought iron will, it is confidently believed, be found correct.

The entire capital invested in the various manufactures in the United States, on the 1st of June, 1850, not to include any establishment producing less than the annual value of \$500, amounted to in round numbers.....\$530,000,000
Value of raw material.....550,000,000
Amount paid for labor.....210,000,000
Value of manufactured articles.....1,020,300,000
Number of persons employed.....1,050,000

The capital invested in the manufacture of cotton goods amounted to.....\$74,501,031
Value of raw material.....84,835,056
Amount paid for labor.....16,286,304
Value of manufactured articles.....61,869,184
Hands employed.....92,286

The capital invested in the manufacture of woolen goods amounted to.....\$28,118,650
Value of raw material.....25,755,988
Amount paid for labor.....8,399,280
Value of products.....43,207,555
Hands employed.....30,252

The capital invested in the manufacture of pig iron amounted to.....\$17,346,425
Value of raw material.....7,005,287
Amount paid for labor.....5,066,628
Value of product.....12,748,777
Hands employed.....29,448

In making these estimates the assistant marshal

did not include any return of works which had not produced metal within the year, or those which had not commenced operations. The same is applicable to all manufactures enumerated:

The capital invested in the manufacture of castings amounted to \$17,416,361
Value of raw material 10,346,355
Amount paid for labor 7,078,355
Value of product 25,105,555
Hands employed 23,689

The capital invested in the manufacture of wrought iron amounted to \$13,995,220
Value of raw material 9,518,100
Amount paid for labor 4,196,628
Value of product 16,387,074
Hands employed 13,057

The statistics of the newspaper press form an interesting feature in the return of the 7th census.—It appears that the whole number of newspapers and periodicals in the United States, on the 1st of June, 1850, amounted to 2,800. Of these, 2,494 were fully returned, 234 had all the facts except circulation given, and 72 are estimated for California, the territories, and those that may have been omitted by the assistant marshals.

From calculations made on the statistics returned and estimated circulations where they have been omitted, it appears that the aggregate circulation of those 2,800 papers and periodicals is about 5,000,000, and that the entire number of copies printed annually in the United States, amounts to 422,000,000. The following table will show the number of daily, weekly, monthly, and other issues, with the average circulation of each class:

	No.	Circulation.	No. of copies printed annually.
Dailies.....	350	750,000	235,000,000
Tri-weeklies....	150	75,000	11,700,000
Semi-weeklies..	125	89,000	8,320,000
Weeklies.....	2,000	2,875,000	149,500,000
Semi-monthlies..	50	300,000	7,300,000
Monthlies.....	100	900,000	10,800,000
Quarterlies....	25	20,000	80,000
	2,800	5,000,000	422,700,000

Number of papers issued in the New England States, 424; in the Middle States, 876; in the Southern States, 716; and in the Western States, 754.

The average circulation of papers in the United States, 1,785.

There is one publication for every 7,161 free inhabitants in the United States and territories.

Railroad between Gosport and Indianapolis.

The New Albany and Lake Michigan railroad company completed last week the survey of their branch road, leading from Gosport to this place.—The route is one of the most favorable in the State, both as regards cheapness of construction and passing through a country second to no other portion of the State in the amount and value of its products.

The distance from Gosport to the city limits is about 41 miles. It passes through Mooresville, distant 15 miles from Indianapolis. The road has but few curves of large radius, and from Mooresville here, it is a straight line. No grades will be required exceeding 30 feet to the mile, and for three-fourths of the entire, the grades will not exceed 12 feet to the mile.

The stock necessary to grade and bridge the road from Gosport to Mooresville, is now made up, and this part of the road will be located and let before spring.

The interests of our city demand that this road should not stop, even for a time, at Mooresville.—The great fertility of this section of our country, yielding annually, an immense surplus, will repay us for the small outlay of capital necessary to bring the road here. As a city our policy is fixed, and that policy is to centralize here, the trade of every portion of the surrounding country. The trade of this fertile section would well repay a struggle; as it is, we can obtain it by a single effort alone.

We hope, therefore, that our citizens will, at once, co-operate with the farmers between this city and Mooresville, and make up the necessary stock.—*Indiana State Journal.*

Harlem Railroad.

The following is a synopsis of the late annual report of the Harlem railroad. The total service performed by the company during the year was 318,602 miles, of which 326,258 miles were by steam, and 492,344 by horses.

This service was interrupted during the month of October and November last, by the relaying of the city track, which has not only increased the expense of operating during those months, but caused a large reduction in the receipts of the city line, while relaying.

The revenue for the above service has been as follows:—

Passenger fares, long line.....	\$325,769 33
Passenger fares, city line.....	95,060 1-
Freight.....	\$147,510 47
Mail and expenses.....	4,482 08
Miscellaneous.....	2,091 09
	153,932 61
Passenger fares from New Haven road.....	50,841 39
Freight from New Haven road.....	9,296 05
Haulage of cars do.....	51,675 00
Miscellaneous and Mail do.....	3,325 35
	61,236 46

Total revenue for the year.....\$590,912 14

The current charges of all kinds for this service have been.....\$313,781 87

Net earnings for the year ending 30th Sept., 1851.....277,160 27

On the 30th Sept., 1850, the amount to the credit of profit and loss account was.....49,663 02

Net earnings for the year as above stated.....277,160 27

From this sum has been paid—

For taxes and assessments, insurance, Law expenses, rents, etc.....10,623 56

Balance.....\$316,199 73

From this balance has been paid:

Dividends No. 5 and 6, preferred stock.....119,992 00

Dividends No. 3 and 4, old do.....95,550 00

Interest on bonds, debts, etc.....52,745 68

Balance.....\$47,912 05

The directors have charged on this balance a further sum for locomotives, in full of depreciation.....6,480 18

Cars, in full of depreciation.....3,531 51

Relaying city track, portion chargeable this year.....6,526 53

Commissions, charges, etc.....7,641 24

24,182 46

Leaving a surplus on the 30th Sept., 1851, for future operations, of.....\$23,729 59

The expenditures on capital accounts during the year for works under order or contract, and for the purchase of such additions to the equipment as were actually necessary to accommodate the increasing business, have been \$106,316 41.

To meet these expenditures and the previous floating debt, the directors, in January, last authorized the issue of 250,000 dollars in bonds of 1,000 dollars each, for 10 years, at 7 per cent.

The following is a condensed statement from capital accounts ledger, as balanced on the 30th September, 1851:

Capital stock, old.....	2,388,750 00
preferred 1,500,000 00	
	\$3,888,750 00
Dover extension, 6 per cent bonds.....	149,201 48
Do. 7 do. do.....	220,000 00
	369,201 48
Bunded bonds, 7 per cent, payable 1861.....	250,000 00
Bunded bonds, 7 per cent, payable 1872.....	250,000 00
Floating debt account.....	61,572 98
	\$1,869,774 46

Railroad and Depo.....4,106 230 2

Equipment.....209 310 50

Real estate, (unappropriated).....203,346 24

Less Mortgages.....106,351 40

Pages.....106,351 40

Albany extension.....250,000 00

Supplies, are to be paid for by the company, and the directors, in January, last authorized the issue of 250,000 dollars in bonds of 1,000 dollars each, for 10 years, at 7 per cent.

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Ohio.

Exhibit of the Columbus, Piqua and Indiana Railroad.—The Columbus, Piqua and Indiana railroad company, was incorporated by the Legislature of Ohio, February 23, 1849, with a capital of \$2,000,000; organized in February, 1850, and commenced active operations in June following.

The charter authorizes the company to construct their road from Columbus to the west line of the State of Ohio, 103 miles, making Urbana in Champaign county, and Piqua in Miami county, points on the line. It also confers authority to make appropriations of lands necessary for roadway, depots, machine shop, water stations, side tracks, etc.

COST OF LINE (FROM COLUMBUS TO GREENVILLE.)

Mr. Conover, the chief engineer, upon an accurate survey and location of the line, (93 miles,) under his immediate control, estimates the total cost of making the road, ready for cars and machinery, \$977,897, being \$10,515 02 per mile. The company have made actual contracts for the roadway and depot grounds required along the line, for the most part, which have been chiefly released to the company, or compensated for by stock of the road, at par.

The directors propose laying the track with T rail, of 56 lbs. to the yard, of an approved pattern. By the adoption of which, they feel satisfied that all the advantages of durability, security and speed, may be obtained, that a heavier rail would afford, and a large saving be had in its purchase.

CHIEF ENGINEER'S ESTIMATE OF COST BY DIVISIONS.

Cost of Eastern division, (between Columbus and Urbana) grubbing, grading, masonry and bridging, at \$2,883 22 per mile, for 46 miles, is.....\$132,628
T rail, 56 lbs. per yd., at \$6,265 64 per mile.....288,219

Cost of Eastern division.....420,847
Middle division, from Urbana to Covington, same work per mile, \$4,827 33, for 32 miles, is.....154,475
T rail laid.....200,500

Cost of Middle division.....354,975
Western division, from Covington to State line. This company, constructing only 15 miles, between Covington and Greenville, cost per mile \$2,277 21, for 15 miles.....34,158
T rail laid.....93,986

128,144
Add two miles side track.....12,531
Ballasting 30 miles after track laid.....23,400
Engineering and incidental expenses, with instruments.....22,000
Rights of way, mostly paid in stock.....16,000
Depot buildings, station houses and equipments, for first year's business, to run the road from Columbus to Winchester.....166,000

Total cost.....\$1,143,897

It will be seen by the above estimates, that the total cost, as here put down, in addition to the cost of making the road ready for the cars, includes depot buildings, station houses and equipments, for the 93 miles of road, and the equipments for 20 miles, which is being made by the Greenville and Winchester companies, to be stocked and used by this company. The estimates of the engineer here made, are based upon the contracts of the road now let and in progress, and therefore may be relied upon as correct.

WAYS AND MEANS.

To defray the above estimate of expenses, the company have secured public and private subscriptions, including stock agreed to be taken by contractors, in payment for work, amounting to the sum of.....\$514,900

Installments on stock paid in, and bonds cashed, amount to.....\$322,500
Sums paid to contractors.....125,000
Deducting the above sum of \$514,900 from the estimated cost of putting the road in running order, amounting to.....\$1,143,897
Leaves to be raised by loans and additional subscriptions.....628,997

Which will be material! lessened by subscriptions now being made to the capital stock of said company.

To provide for the rail and machinery necessary for the commencement of business, it is proposed to issue the bonds of the company, to an amount not exceeding \$600,000.

RAILROAD CONNECTIONS.

The city of Columbus is a point where the majority of the roads in the State have their terminus, or stand in an intimate relation. Here will congregate a large portion of the travel passing between the eastern cities and the region of the great west, to take the choice of lines leading from this common centre. Through this point, lead the shortest and most direct routes, communicating between the most important places of the western and those of the eastern States.

The cities of Cleveland, Dunkirk, Pittsburg, Wheeling, Baltimore, Philadelphia, New York and Boston, are reached by lines constructed and in progression, on the shortest practicable routes from this point.

The Columbus, Piqua and Indiana railroad, commences at Columbus, and is continued westward to the town of Urbana, the county seat of Champaign county, 46 miles from Columbus, where it intersects the Mad River and Lake Erie road; which, with the Little Miami railroad, gives a direct communication between the Ohio river and Lake Erie, at Sandusky.

At the city of Piqua, Miami county, 70 miles west of Columbus, this road intersects the Miami Extension canal, leading from Cincinnati to Toledo, on Lake Erie. Here, also, is met the Cincinnati, Hamilton, Eaton and Piqua railroad, now under progress of construction from Hamilton to this point. The Dayton and Michigan railroad, the proposed extension of the Cincinnati and Dayton railroad, will pass through this point.

At Greenville, the county seat of Darke county, it meets the Greenville and Miami, and Greenville and Winchester roads, which two last roads carry the line of the Columbus, Piqua and Indiana road to Winchester, Indiana, the county seat of Randolph county, and constitute a part of this line.

By an arrangement made with the directors of the Greenville and Miami, and Greenville and Winchester roads, all necessary control is had of these lines and appurtenances, and the same made subject to the rules and regulations of the Columbus, Piqua and Indiana railroad company.

The Indianapolis road, taking up this line at Winchester, carries it westward to the capital of Indiana, and from thence is continued through Terre Haute and Vandalia, to the city of St. Louis. The Madison and Indianapolis, and Jeffersonville railroads, the Wabash, and Ohio, and Erie canal, intersecting the western prolongation from the south, and railways from the northwest, form highly important tributary lines. Thus is presented a central, as well as for the most part a terminal line, embraced between the Ohio and Mississippi rivers, intercepting and concentrating upon it the traffic of the numerous thoroughfares which range this large extent of territory, from the north and the south.

SUMMARY OF ANNUAL TRAFFIC AND INCOME.

62,600 through passengers, at \$3 40 for 113 miles.....\$212,840
31,000 way passengers, at \$1 20 for 30 miles.....37,200

250,040
Mails and expresses per annum.....15,000

Total from passengers and mails.....\$265,040

FREIGHTS.

108,800 tons, at an average rate of \$3 50 (export).....\$380,800
22,000 tons, at an average rate of \$2 50 (import).....55,000

Total exports and imports.....435,600

Gross income.....\$700,840
Deduct annual expenses of running the entire road.....395,462

Net income, as based upon said exhibit and calculations.....\$305,378

The foregoing summary of annual traffic and income has been prepared from sources of anticipated revenue, and in the same manner as the exhibits of other roads now in operation [showing that their income had not been estimated too high,] and if this road had cost the same to put it in running order, per mile, as most of the western roads now in operation and progress, the gross income resulting from the foregoing estimate would not pay the stockholders a greater per cent than those first class roads in operation, and claiming for this road the same amount of business as any other road of 100 miles' length, a position which we feel sure will not be controverted, and taking the actual cost of its construction based upon the contracts of the whole work, and it will be seen that this road will pay in dividends on the stock about double what these others pay with the same business.

FREIGHT TRAFFIC.

The amount of through freights, hitherto passing between the marts of the Eastern Atlantic seaboard, and the commercial cities of the west, by means of canal, or steamboats, which will be transported by railroad, will constitute a large proportion. The rapidity, and certainty of transport by railroad, will secure a majority of the ordinary boat tonnage, even where the routes and points are the same; and freights destined for places inaccessible by water, will, in most instances, be thrown upon that through-fare which is unmix in its connexions. Together with the heavy through tonnage of grains and minerals, tending to the cities of the east, an important item of revenue will be gained from the transport of live stock.

The route of the "Columbus, Piqua and Indiana, and Central Ohio" railroads is that of the drovers of Indiana, Illinois and the states farther west, and it is estimated that 50,000 head of cattle, annually pass through Greenville, and Piqua alone, (points on the line of Columbus, Piqua and Indiana railroad) from these states; and experience has shown that railway communication is the most expeditious, and cheapest mode of transporting live stock, causing less decline of value in transit; and western drovers have already, when practicable, adopted it. The location and direction of this road will secure to it a full share of this kind of transportation.

Of the extent of transport of hogs over this line, some idea can be had from the statistics of numbers raised throughout the west.* The conveyance of pork, and other varieties of perishable commodities by the New Orleans route will, to a great extent, cease in consequence of the vicissitudes of climate and navigation attending it.

The population, tributary to the Columbus, Piqua and Indiana railroad, is 188,000.

The following staple products are raised, consumed and exported from this district:

Freights Exported.

Products	Consum'd
Bushels wheat, corn, oats, rye, etc.....	14,885,000 7,885,000
Number cattle, hogs, sheep, horses.....	648,488 568,488
Barrels flour, beef, pork, butter, lard, oil, whiskey.....	70,000 20,000
Pounds of wool.....	900,000 300,000
Exported tons	
Bushels wheat, corn, oats, rye, etc.....	7,000,000 50,000
Number cattle, hogs, sheep, horses.....	80,000 8,000
Barrels flour, beef, pork, butter, lard, oil, whiskey.....	50,000 8,000
Pounds of wool.....	600,000 300
Empty barrels, staves, heading and hoop poles.....	16,500
Lumber, stone, lime.....	18,000
Articles not enumerated.....	4,200
Total exports.....	115,000

* It is estimated that in the states of Ohio, Kentucky and Indiana, 1,000,000 of hogs were raised in 1850; and in Mississippi, Illinois, and Missouri, 581,000—total 1,581,000 head. In 1849, 195,665 hogs were brought into Baltimore from the west alone, over the Baltimore and Ohio railroad.

Freights Imported to this District.

	Tons
Box and bale goods, cotton merchandize. }	22000
Machinery, furniture, groceries.	
Salt, coal, iron, shingles, marble.	

The above items of freight, it is seen, have direct reference to the district of thirteen counties, for the most part immediately tributary, and dependent upon this road—and in quantity are below, it is believed, what will become the actual traffic.

No estimate is made of the probable amount of *through* transportation, which will be at once secured to this road, upon the completion of the Indiana and Illinois lines of railway; placing the city of St. Louis, and contiguous country, in connection with the Eastern Atlantic cities, by this east and west route. Any computation as to the magnitude and extent of that traffic, would, at best, be unreliable.

PASSENGER TRAFFIC.

This item of business, from the route and connections of the Columbus, Piqua and Indiana railroad, must be large. Considering this road as a constituent portion of a main trunk line, extending from the cities of the Atlantic seaboard to the Mississippi river, on the shortest and most direct route; traversing a tier of counties and towns unsurpassed in point of importance, population and wealth, by any in the State, and on the route of the usual travel, (that of the great national road,) its claims, as a popular thoroughfare, will not be disputed. It has been noticed, that this road connects with *four leading thoroughfares, ranging the State north and south*; and that this link is characteristic of nearly every other, comprising its eastern and western prolongations. This fact, attending its position, as an intersecting and terminal line, clearly indicates a large and perpetual support from foreign sources.

Of the 73,000 passengers, reported to travel annually upon the Ohio river, between Cincinnati and Wheeling, it is estimated that two-thirds of that number will be *diverted upon the Central Ohio railroad*, (vide Col. Sullivan's Exhibit for

1851, making.....	48,666
Add usual travel by stage and private conveyance.....	22,347

Aggregate of *through* travel..... 71,013

This calculation would give the Central road over 225 passengers per day, producing the annual sum of \$98,254 60 dollars.

If we set down one-third of this number as necessarily thrown upon the line of the Columbus, Piqua and Indiana railroad, and the above facts apply equally to the whole Ohio line, we have in each direction 50 passengers per day, equal to 100. Passengers from the Indiana and other connecting lines, 100.

This gives 200 passengers per day, which is 113 miles, at 3 dollars 40c., for 313 working days, makes \$212,840 dollars.

As to estimating the amount of way travel, no more satisfactory result can be obtained, than by the observations of toll gates, and other points along the principal turnpikes which run parallel or adjacent to the route of the railroad. By reference to this, to ordinary stage travel, and the proportion of travel to the amount of population, we find an average number of 100 travellers by private conveyance, moving in each direction, for distances of 20 and 40 miles. This would give 200 travellers in one direction. One-half of this number, we estimate, would become railroad passengers, which would give as follows:

For one year, of 313 days..... 31,300
Taking 40 miles as average distance travelled per day, at 4 cts. per mile per passenger, we have per annum \$37,200.

This cannot but be regarded as a low estimate for the way travel, for a district of 188,000 souls. On the eastern railroads, the average proportion of way passengers to the through, is as 5 to 1. "Baltimore and Ohio," as 6 to 1. "Central Michigan," as 3 to 1. While the local passenger business of the Mad River road, generally equals its freight earnings, which is large, with a less tributary population. In regard to the travel upon the route, it is but natural to suppose, that upon the completion of the several links which constitute this great

chain of railway, and its accessories, and the facilities thereby afforded of an intercommunication between the east and the west, at once constant, rapid and cheap; that objects of business, information and amusement, will increase this variety of traffic for these roads, five-fold above our present estimate.

The company design making sale of \$600,000 of their first mortgage bonds, with a view to the purchase of their iron and other equipments, having already provided with other means for the cost of the construction of the roadway.

These bonds are secured by property valued over a million of dollars, and with a present prospect of the same, being put into active compensating operation. The prominent position of the road as a main and leading thoroughfare, with its numerous and valuable connections, together with the rich and populous tributary country through which it passes, will always insure it a large traffic; and the exceedingly low cost of its construction must make it a source of highly remunerative profit to its stockholders.

The entire road is hastening to completion under a heavy force; and by the contracts the grading is to be completed by the 1st of Sept., 1852.

The line from Indianapolis to Winchester will be completed about the time that the Ohio lines are finished; so that a direct communication can be had between the capital of Ohio and Indiana at an early day. We are further informed that the company have succeeded in completing a purchase of 10 locomotives on the most favorable terms, in which their bonds were taken at par for the whole; also, that the company now are negotiating for the purchase of 10,000 tons of rails, which they expect to consummate in a few days.

Application of Electro-Magnetism to Railway Transit.

A gentleman by the name of Nickles has invented an apparatus for the purpose of increasing the adhesion of the wheels of a locomotive to the rails by the application of electro-magnetism. His plan is to convert the wheel of the locomotive into a magnet, and make it adhere to the iron rail by an adhesion similar to that by which a slip of steel adheres to a common horse-shoe magnet. The manner in which Mr. Nickles applies his apparatus is thus stated:—

"He places a galvanic battery under the body of the engine. A wire coming from the poles of this battery is then coiled horizontally round the lower part of the wheel close to the rail, but in such a manner that the wheel turns round freely within it, fresh portions of its circumference coming continually into relation with the coil. The part of the wheel in immediate contact with the rail is thus made magnetic, and therefore has a strong adhesion for the surface along which it moves—and the amount of the adhesion may be increased or diminished at any time, by merely augmenting or reducing the intensity of the galvanic current that circulates through the surrounding coil. By means of a handle the electricity may be turned on or off, and an effectual brake be thus brought into activity that can make the iron rail smooth or adhesive, according to the requirements of the interest, and this without in any way interfering with the free rotation of the wheels as the friction brakes of necessity do. Increased adhesion is effected by augmented pressure, but the pressure results from the attraction that is altogether independent of weight. The lower portion of the wheel for the time being is in exactly the same condition as a bar of soft iron placed within a coil of wire circulating electricity. But as it rises up out of the coil during the rotation of the wheel it grows less magnetic, the descending portions of the opposite side of the circumference acquiring increased magnetic power in the like degree."

Railroad in Texas.

The great railroad convention of the State of Texas, met on the 21th ult., at Austin; Colonel J. W. Dancy, of Fayette county, was appointed President, and Lucius C. Cloplin, Esq., of Smith co., Secretary. The members of the two houses of the Legislature, and citizens present from various parts of the State, not members of the convention, were invited to take seats and participate in its deliberations.

The Gazette says its proceedings have been characterized by much spirit, and much valuable information, statistical and otherwise, has been elicited in the discussions.

Speeches were made by the President, Colonel Paine, of New Orleans, I. A. Paschal, E. Jones Rivers, Gen. James Davis, Gen. Memucan Hunt, O. C. Hartley, and others.

A committee was appointed to report resolutions for the action of the convention. Judge Paschal, from the above committee, and in behalf of the Chairman, read a lengthy and very able report, advocating the policy of the State's embarking in an extensive scale of internal improvements, and affording liberal aid to private corporations in the construction of railroads, plank roads, etc. The gist of the report may be gathered from the following resolutions, with which it closed.

Resolved, That the Legislature of the State of Texas be respectfully requested to set apart \$3,000,000 as an internal improvement fund, to be lent by the State in aid of such enterprises of internal improvement as may be undertaken by any chartered company in this State; that is, in aid of canals, navigable streams, railroads and plank roads, in this manner proposed in this report.

Resolved, That the Legislature be also requested to donate as a bonus 5000 acres of land for each and every mile of railroad fully executed in this State, and to deliver the certificates for the same whenever any company shall have completed five miles of said railroads.

Resolved, That the Legislature be also requested to charter any company for the construction of a railroad passing nearly through the centre of our State to El Paso, reserving the privilege of tapping said road at any point; and further, that a liberal donation in land, be made in aid of the construction of the same.

Great Discovery of Lead Ore.

The Galena Advertiser gives an account of a discovery of lead ore, which promises to surpass anything of the kind on record. It was made about two miles northeast of the Linsipeur Mound, is two miles distant from any other diggings, on a farm in the prairie, and was made by a boy finding a mineral in a creek. On examining the creek it was found to be almost a solid mass of lead ore for some ten or twelve feet in width. Some three or four holes have been sunk about 4 feet in the clay, on each side of the creek, and specimens of large block minerals taken out, weighing from fifty to one hundred pounds.

This ore lies between the clay and rock, forming a horizontal floor, and has been proven on one side of the rock for fifteen feet in width.

New Railroads in Europe.

Mr. Mangne, the French Minister of public works, has recently made a tour through Europe, for the purpose of inspecting railroads, and gathering information. He learns that the German princes have agreed upon a double line, terminating at Trieste, one starting from Hamburg and the other from Treves; and thus opening a path for England and Belgium to the Adriatic. Another line is to extend from Königsberg to the Lake of Constance and Italy. M. Mangne was much impressed with the immensity of the works at Sommering, in forming a pathway through the Julian Alps. There are thirteen tunnels and twenty-five viaducts; 13,000 laborers and 200 horses are steadily employed.—The route is to be completed in 1853. Several roads are planned or under way in Italy. It is hoped that the Holy Father will at length consent to the building of the connection between Anconia with Rome. At Turin, M. Mangne conferred with the king on the junction of Lyons and the Sardinian capital, via Savoy and Mount Cenia. An English company has already contracted for the construc-

tion of railways from Turin to Saze, and from Modena to Chambery. The tunnel through Mount Cenia will be nearly seven miles in length.

American Railroad Journal.

Saturday, December 20, 1851.

Hudson River Railroad.

We spoke in our last of the disappointment of public expectation in reference to the success and management of this road. We continue to hear constant complaints of the manner in which it is operated, and the want of suitable equipment for the transaction of business. It is seldom that the trains make the running time that they are advertised to make, and in many instances they are so far behind, as to cause a serious consequence to the traveller. Large amounts of freight have accumulated at various points, which the company have been unable to move. For this reason, dissatisfaction on the route is so great, as to turn a large amount of business upon the Harlem, which properly belongs to the Hudson River road. The dreadful accidents which have occurred on this line, in addition to the bad management in other respects, indicate the want of a competent person at the head of affairs.

The President of the road brought with him upon the Hudson River, an excellent reputation, from the admirable manner in which the Utica and Schenectady road was managed, while superintendent of that line. The latter continues to be a model road, and is celebrated for its excellent system of management. This Mr. Young has signally failed to introduce upon the Hudson River road.—There is a screw loose in the latter which the directors must correct. The \$11,000,000 which the road is estimated to cost, call loudly for the best management, if the stockholders expect any return upon their investments. If they were in a position to monopolize the business between two such important points as Albany and New York, they could better disregard public convenience with less risk of loss; but they must remember that they have the Hudson river on one side, and the Harlem on the other, competitors for the same business. The latter road is watching their movements with an eagle eye, and is preparing to profit by the slightest mistakes of the former. The Harlem is under the most efficient management, and with the two rivals, which we have named, the Hudson River railroad cannot afford to be ill-conducted, or to have any but the most competent men in its employ.

The Nicaragua Route.

The Syracuse Star says that the contract for constructing the plank road between Lake Nicaragua and the head of navigation on the Pacific side, has been awarded to Elizur Clark, of that city, at \$11,000 per mile. The road will be twelve and a half miles in length, and is to be finished in 9 months. Mr. Clarke will erect a steam saw mill to furnish the plank, which will be cedar, and will carry on his workmen from Syracuse.

Locomotives on Lake Erie.

Four locomotives have been lost from the decks of vessels on Lake Erie the past season. Two belonged to the Dayton and Western railroad, and were fully insured; and two, we believe, to the Mad River railroad.

Ohio and Pennsylvania Railroad.

This road has been opened for travel to Palesine, in Ohio, 49 miles from Pittsburg.

Virginia.

James River and Kanawha Canal.—The Richmond papers give, in part, the proceedings of this company, with the report of President Mason. Of the latter the Dispatch of Thursday last says: "The financial exhibit is rather unfavorable. The gross receipts of the company amounted to \$251,560—the cost of repairs, interest on debt, and other charges against the company have exceeded this amount by the sum of \$48,638. The estimate for the next year is for a gross receipt of 332,000, and a deficiency of 50,978. He advises that the State convert the debt due into stock, and that the Legislature be petitioned for an appropriation of \$300,000, to pay the interest that will accrue by the first of July. The cost of the work between Lynchburg and Buchanan has exceeded the appropriations by the sum of \$150,000.

Professor Tuomey, of the Alabama University, has reported in favor of the practicability of taking the canal across the Allegheny, giving, as his opinion, that the supply of water is entirely sufficient.

The company still maintain an unshaken determination to carry the water line to the Ohio. As soon as we receive a copy of the proceedings of the meeting of the stock holders, we shall be happy to give a more full account of them.

Columbus Plank and Indiana Railroad.

We give in another place a portion of the recent exhibit of this company, which presents in a strong light its claims to public confidence. No better idea can be given of the future success of the road, than to say, that it traverses one of the best portions of Ohio, a well settled and rich country, full of thriving towns and villages, being engaged in almost every branch of industry. Its line is parallel with the route of travel and business, and it will constitute a portion of a very important through line, extending through Ohio, Indiana and Illinois. Such a statement as this makes out a strong case in favor of any western project. In addition, we are able to say, that the affairs of the company have been exceedingly well managed, and are in a very prosperous condition. Contracts have been made for a large amount of machinery, and negotiations are on foot for the iron. It is expected that the road will be completed in one year from the 1st day of January next.

Troy, Dec. 16, 1851.

EDITOR RAILROAD JOURNAL:

In your Journal of the 8th and 29th of November, mention is made of the iron bridge recently erected over the Appomattox river, on the line of the Richmond and Danville railroad Virginia.—Will you please inform me upon what pattern the bridge is constructed, and the length of span used?

Yours truly,

H. M. L.

The iron bridge recently built on the line of the Richmond and Danville railroad referred to above, is 200 feet long, in two spans. It was built by the New York Iron Bridge Company, and was tested to the entire satisfaction of the railroad company in Oct. last.

We are informed that other iron railroad bridges, built by the same company, after having been used over twelve months, were found to retain precisely their original shape, and were re-tested with the same results as when first completed.

This plan of iron bridge took the prize medal at the World's Fair in London, and was erroneously published in the list as "Rider's Iron Bridge." It

should have been Col. Stephen H. Long's Patent Iron Bridge, Col. Long being the inventor and patentee

New York.

Buffalo and State-line Railroad.—The Dunkirk Journal states that the locomotives and cars necessary for opening the Buffalo and State-line road, from Dunkirk to the State line, having arrived via the New York and Erie road, are being placed on the track.

The track is now in running order, except the short space between Centre street and the depot in the village of Dunkirk, and workmen are busily employed in laying the rails on this part.

Connecticut.

Canal Railroad.—The New Haven Journal says that the Connecticut Legislature at its last session accepted the report of the commissioners laying out the Canal road to the State-line, through the "Peddler's Lot," notwithstanding the decision of Judge Ellsworth, that it would not and could not do so. It also passed a resolution requiring the road to be built to the State-line within about a year, or forfeiting the charter for that part which should not be constructed.

Cannel Coal in Ohio and Pennsylvania.

The Pittsburg Gazette States that cannel coal of the best quality and inexhaustible in quantity, is found upon the line of the Pennsylvania and Ohio railroad. It is found in the valley of the Little Beaver, about 50 miles from Pittsburg, and is to be used by the above company for locomotive purposes. The same paper also states that the same kind of coal is found in great abundance in Armstrong county, on the contemplated line of the Allegheny River railroad.

Railroad Subscription.

The counties of Mercer and Franklin have each voted \$200,000 to the stock of a railroad from Harrodsburg to Frankfort.

Canada.

A railroad from Guelph on the Great Western of Canada to the town of Galt, a distance of 9 miles is in progress.

Stock and Money Market.

Money has been more in demand the present than the previous week, and fancy stock, the prices of which indicate with great certainty the abundance or scarcity of money, have generally declined. There is no great demand for money for ordinary purposes, business generally being very slack. The present tightness is owing mainly to the heavy exportation of specie.

In the bond market a fair business is doing among the best securities. If a road is in a situation to meet the conditions of the foreign demand, there is but little difficulty in disposing of its bonds. Foreigners are unwilling to take the bonds of our unfinished works, for the same reason that an American would be unwilling to take the securities of France. We have in our favor stability in our institutions, which, unfortunately, cannot be affirmed of the country named. As a general rule, it may be stated, that cheaply-constructed lines, both south and west, are rapidly growing in favor, and public confidence, which is showing itself, not only in the purchase of their bonds for investment, but in the disposition on the part of capitalists to engage in the construction of roads, and to take their profits in stock.

The recent sale of the Cleveland and Ashtabula road is a good index of the market value of good

bonds. This road is not yet completed, but its line occupies a conspicuous position in the public eye as it must form the connecting link between eastern and western roads. The amount of bonds sold were \$200,000. The bids were for a much larger sum. The bonds were awarded as follows, viz: 50 to Harvey Seymour, at 87½ a 85; 4 to Carpenter & Vermilye, at 87½ a 86; 20 to Nathaniel Marsh, at 86 a 84½; 12 to Chas. M. Oakley, at 86 a 81; 37 to J. W. at 85½ a 84; 2 to Jas. Brown, at 85 a 84½; 20 to Ira B. Carey, at 85; 25 to H. Pumperley, at 85 a 84½; 10 to Merchants Bank Cleveland, at 85 a 84½; 20 to Wm. H. Russell, at 85 a 84½.

Ohio Canals.—The following statement shows the receipts of the Ohio canals for two years, ending Nov. 15th:—

	1851.	1850.
Ohio canal.....	\$411,911 70	\$397,332 57
Miami and Erie.....	326,784 25	315,162 60
Muskingum Imp.....	39,008 39	36,724 29
Hocking canal.....	11,013 08	8,078 67
Walhonding do.....	2,561 86	2,555 09
Total.....	\$791,279 28	\$759,852 22
	759,852 22	

Increase..... \$31,425 06

The clearances of the leading articles of commerce from the port of Cincinnati for the same periods are as follows:—

	1850.	1851.
Coffee, lbs.....	1,282,492	1,673,243
Candles, do.....	140,742	214,807
Crockery, do.....	256,101	312,874
Iron, lbs.....	4,618,960	13,713,325
Castings, do.....	1,190,224	1,069,542
Nails, do.....	1,514,317	1,675,665
Molasses, do.....	3,093,035	3,097,662
Sugar, do.....	3,886,572	4,361,418
Tobacco leaf, do.....	962,177	2,114,023
White lead, do.....	296,567	281,717
Sundries, do.....	4,179,364	5,867,202
Merchandise, do.....	5,455,627	6,322,645

Receipts of Michigan Central Railroad.

	1850.	1851.
Freight.....	\$63,451 26	52,017 36
Passengers.....	38,652 72	46,116 73
Miscellaneous.....	3,015 44	2,189 70
Total.....	\$105,119 42	\$100,323 73

Receipts for the year 1851..... 1,110,043 89
1850..... 857,156 97

Increase..... \$252,886 92

It is supposed the dividend of the year will be 14 per cent.

Ogdensburg Railroad.—The earnings of the Ogdensburg railroad in the month of November were as follows:

Freights.....	\$30,390 05
Passengers.....	7,583 51
Rents.....	218 84

Total..... \$38,192 40
Earnings in same month last year..... 30,464 19

Increase..... \$7,728 21

The Troy and Rutland railroad company have agreed to let the Rutland and Washington railroad company run their road for one year, for the use of which they are to pay \$9,000, and are to keep the road in good repair.

The Boston and Worcester railroad company have declared a dividend of 3½ per cent, payable January 1. The Fitchburg and Worcester railroad of 3 dollars per share on the full paid preferred stock, payable on demand.

The directors of the Little Miami railroad company, out of the earnings of the six months ending 1st December, '51, have declared a dividend of five

per cent, with a surplus of nearly 40,000 dollars, making the entire surplus of the company about 100,000 dollars to that date.

The earnings of the Madison and Indianapolis railroad, for the week ending the 16th December, 1851, was..... \$7,300
Corresponding week of 1850, was..... 5,600

Increase..... 1,700

The Collector of the Philadelphia and Columbia railroad, at Columbia, in his annual report, states the amount of tolls received at that office, during the fiscal year ending Nov. 30, 1851, to be
From railroad..... \$176,600 15
From passengers and passenger cars... 96,003 46

Total..... 272,603 61

The Philadelphia Ledger, in allusion to a dividend next month by the Reading railroad, says:—

"We know nothing positively, and we probably know as much on that point as any one outside the board of managers. There are differences of opinion, and all is but matter of opinion. We yesterday saw a statement in figures from one intimately acquainted with the business of the company, and that statement set down a cash dividend of four per cent in January next, and a further cash dividend of six per cent within the coming year, besides a twelve per cent stock dividend from the company's sinking fund, making in all twenty-two per cent."

Railway Share & Stock List;

CORRECTED WEEKLY FOR THE
AMERICAN RAILROAD JOURNAL.

NEW YORK DECEMBER 20, 1851.

GOVERNMENT AND STATE SECURITIES.

U. S. 5's, 1853.....	101
U. S. 6's, 1856.....	103½
U. S. 6's, 1862.....	110½
U. S. 6's, 1862—coupon.....	114½
U. S. 6's, 1867.....	116½
U. S. 6's, 1868.....	115
U. S. 6's, 1868—coupon.....	122½
Land Warrants.....	140a145
Arkansas 6's.....	52a53
Alabama 5's.....	91a92
Indiana 5's.....	85
Illinois 6's, 1870.....	65a68
Kentucky 6's, 1871.....	104a106
Massachusetts sterling 5's.....	105a106
Massachusetts 5's, 1859.....	100½
Maine 6's, 1855.....	103
Maryland 6's.....	102½
Michigan.....	—
Mississippi.....	—
New York 6's, 1855.....	103½
Ohio 6's, 1860.....	109
Pennsylvania 5's.....	91

RAILROAD BONDS.

Atlantic and St. Lawrence, 6 percent.....	85
Baltimore and Ohio, 1867.....	94½
Boston and Providence 6's, 1855.....	101
Boston and Worcester 6's, 1855, convertible.....	107½
Bost., Concord and Mont. 6's, 1860, mortgage.....	87½
Cheshire 6's, 1860.....	91½
Connecticut River 6's, convertible.....	89
Erie 7's, 1859.....	102
Erie 7's, 1868.....	106
Erie income 7's.....	94½
Hudson River 7's, 1853.....	101½
Michigan Central, convertible, 8's, 1856.....	104½
New York and New Haven.....	100
Norwich and Worcester, mortgage, 1860.....	80a85
Old Colony, 1854.....	97½
Ogdensburg 7's, 1859.....	93½
Portsmouth and Concord.....	80a85
Passumpsic 6's, 1859.....	94½
Rutland 7's, 1863.....	90
Reading mortgage, 1860.....	78
" 1870.....	70
Sullivan, mortgage 6's, 1855.....	67
Vermont Central 6's, 1852.....	90
" 6's, 1856.....	85
Vermont and Massachusetts 6's, 1855.....	84

RAILROAD STOCKS.

[CORRECTED FOR WEDNESDAY OF EACH WEEK.]

	Dec. 10.	Dec. 17.
Albany and Schenectady.....	89½	97
Atlantic and St. Lawrence.....	60a65	—
Androscoggin and Kennebec.....	30a35	—
Boston and Maine.....	106½	102½
Boston and Lowell.....	108	109
Boston and Worcester.....	103½	99½
Boston and Providence.....	90	90
Bost., Concord and Montreal.....	35	35
Baltimore and Ohio.....	67½	61½
Baltimore and Susquehanna.....	34	—
Cheshire.....	47	43½
Cleveland and Columbus.....	—	—
Columbus and Xenia.....	—	—
Camden and Amboy.....	—	—
Connecticut River.....	60	—
Delaware and Hudson (canal).....	99	100
Eastern.....	99½	99½
Erie.....	86½	85½
Fall River.....	97½	95½
Fitchburg.....	111½	119½
Georgia.....	—	—
Georgia Central.....	—	—
Harlem.....	68	67½
Hartford and New Haven.....	122	—
Housatonic (preferred).....	—	—
Hudson River.....	70	70
Kennebec and Portland.....	50a55	—
Little Miami.....	—	—
Long Island.....	15	15½
Mad River.....	—	—
Madison and Indianapolis.....	90	93
Michigan Central.....	105	109½
Montgomery and West Point.....	—	—
Michigan Southern.....	—	102½
Manchester and Lawrence.....	82½	82½
Morris (canal).....	14	14½
New York and New Haven.....	108½	110
New Jersey.....	—	130
Norfolk.....	64½	64
Nashua and Lowell.....	104½	—
New Bedford and Taunton.....	108	—
Norwich and Worcester.....	53	53½
Norfolk County.....	15½	15½
Ogdensburg.....	29	29
Old Colony.....	66	64
Passumpsic.....	70½	58
Pennsylvania.....	—	—
Pittsfield and North Adams.....	95	—
Philadelphia, Wilmington & Balt.....	29½	30
Petersburg.....	—	—
Richmond and Fredericksburg.....	—	—
Richmond and Petersburg.....	—	—
Reading.....	59½	60½
Rochester and Syracuse.....	111½	111
Rutland.....	40	39
Stonington.....	51½	48½
South Carolina.....	—	—
Syracuse and Utica.....	123½	—
Sullivan.....	15a20	—
Taunton Branch.....	108	110
Troy and Greenbush.....	90	—
Tonawanda.....	—	—
Utica and Schenectady.....	129	127½
Vermont and Canada.....	97	99½
Vermont Central.....	25½	26½
Vermont and Massachusetts.....	26	27
Virginia Central.....	—	—
Western.....	104½	104½
Wilmington and Raleigh.....	56	—
York and Cumberland (Pa.).....	19½	—

Ohio.

Ohio Central Railroad.—The President of this road, J. H. Sullivan, Esq., writes to the *Wheeling Gazette* that the surveys of the division between Zanesville and Wheeling are so far advanced, that the line will be in readiness for examination on the 15th of January next, and for letting on the 1st of February following. The distance between Zanesville and Wheeling is somewhat over 80 miles.—As there will be a large amount of heavy work upon this part of the line, contractors will do well to turn their attention in this direction. Advertisements of lettings will probably be published in a few days.

For the American Railroad Journal.

The Canada Railroad Connection with the Central Lines.

The peninsula of Upper Canada now contains the largest and best tract of unoccupied land in the immediate vicinity of the State of New York. It is in the same parallel with the Genesee country, that has always been so celebrated as a wheat growing region. It is of similar character; has a mild climate and a most productive soil. Already the best wheat is raised about the head of Lake Ontario, very large quantities of which come to Rochester, and to Oswego. It has not been usual for the English to advance as rapidly as we do. Hence this country has not kept up with its great advantages. The relations between the two governments have not until lately proved an interchange of travel. Now a more liberal policy is adopted, and it will continue, until the lines between Canada and New York, so far as trade is concerned, will be merely nominal. This is clearly one of those steps in improvement that do not go backward. The productive character of the country referred to is immense, and its power will now soon be developed by the levelling, equalizing, and concentrating force of the railroad. The railroad called the Great Western, is now in process of construction. It is to extend from the Suspension Bridge at Niagara Falls to the Detroit river, opposite to the termination of the Michigan Central railroad. It will be, when completed, about 228 miles long, passing over and through the peninsula named above. Its construction is now secured by the favorable aid which it receives from the legislation of the Colonial and the British government, and from the wise and timely aid which will be afforded by the authorized subscription of the central line of railroad in our State to its stock. The country over which it passes is remarkably level, and therefore it will have great power, as affording an outlet for the productions of the region. It will be of the same gauge as the central lines in Massachusetts, New York, Michigan and Illinois. It will connect directly with them. It will form the longest line of uninterrupted railroad gauge in the world. At the eastward, it will connect with the new railroad to be opened next June, from Rochester to Niagara Falls. This road will be better appreciated when it is completed than it now is, for it is most favorably situated on account of grade, extending along the canal, and following its regular descent. The value of a country that admits a regular and navigable flow of water from Lake Erie to the Hudson must of course be very great, to a railroad. It has, in the minds of far-seeing and sagacious men, been long settled, that the most thorough working line for a railroad, from Lake Erie to the Hudson river, is the one that most nearly follows the *water courses*. The Great Western, in Canada, will thus have this line direct to Rochester, and thence, by the improved line, eastward, will connect at Troy and Albany with the railroads south and east of those cities. The same gauge extends all over New England, to Maine. It will have the connection with the two (soon to be great) railroads on the east side of the Hudson river, to New York.

At the westward, it will cross the Detroit river, and have the most direct connection with the Michigan Central railroad. This is sometimes, and in some quarters, urged as an objection. Let us leave this to the power of invention, and to the results which sharpened competition will stimulate. The steam engine will easily project an almost *floating bridge* across the Detroit river, the moment

it is necessary. A float will be constructed long enough to take on a whole train of cars, and will with ease cross and re-cross that river. Continuous tracks up to the edge of the water on each side will readily receive the floating trains, and the traveller may not know that he has crossed the beautiful strait that connects these inland seas.

On the Michigan Central to Chicago, the gauge connects with one line of railroad to Galena, now rapidly progressing. It will connect at Chicago, also, with the Illinois Central, which is to be made to Cairo, at the mouth of the Ohio. From there a railroad is in progress through the States of Kentucky, Tennessee, Mississippi and Alabama, to Mobile. The city of Chicago is to be one of the great railroad points in our country. It has been celebrated as being at the head of 1500 miles of navigable inland water communication to New York. It has derived great advantages from its position, in respect to navigation, and in respect to its being the marketable point of an extensive rich country. In the future, it will derive great benefit from the railroads which will converge to it. They cannot fail to concentrate at that point a vast amount of trade and travel.

New York is thus far the great point of attraction on the seaboard, to which the largest part of this trade and travel tends. The direction that way has been thus far secured by water; now a new element of transit is adopted, and the railroad is looked to as one of the great means of conveyance. The New Yorker, standing at Chicago, and seeing the tide of business flow to that point, will enquire how it may best be directed to New York. He will reflect that Philadelphia and Baltimore are projecting their lines of railroad, over the mountains, to the shores of the lakes, and thence to the city of Chicago. He will see that the mountains intervene, and the gauges are broken, in these directions. He will follow the line of the two railroads (the Central and the Southern) in Michigan, and he will see that they may both connect with the Great Western through Canada, and by that route reach his city, on a line unbroken by mountains or by change of gauge. That it will be the *shortest*, by far the most *level*, and therefore the most efficient line of railroad to his city. It is well known that the line of Lake Shore railroad along Lake Erie, is of the *Ohio gauge*. West of Toledo it is different, being the same in all the western States, and the same as the New York Central, and in all New England.

It would be most strange, then, for a New Yorker not to see that the Great Western in Canada is a most important line of railroad for his city. There is no reasonable question on this subject, and it can be only those who have an interest in conflicting lines, that would fear any unfavorable result from the construction of the Great Western railroad.—But some have urged, that the trade will from Hamilton at the head of Lake Ontario flow to Ogdensburg, and thence by railroad through Vermont to Boston, and that thus New York would be in danger of losing a large trade. Those who urge this, either overlook, or do not understand *facts*.—These are stubborn matters, and they have great influence upon the force of argument, as well as upon the course of trade.

Suppose the traveller, or property, once afloat upon Lake Ontario, will not the *shortest* and the *best* route be sought? That is not by way of Ogdensburg. Oswego is nearer to Boston, and of course to New York, by railroad, than is Ogdens-

burg to either. Look at the distances. From Oswego to Boston is 383 miles by railroad, over 250 of which is double track. From Ogdensburg, it is over 400 miles to Boston by railroad. Oswego is about 100 miles nearer to Hamilton than is Ogdensburg. These are facts. Why should any one going to Boston from Hamilton, go by way of Ogdensburg? Only to take the *longest, slowest and most interrupted route*. The trade then for Boston, from Hamilton, will most naturally come to Oswego, and pass over the New York central line, and the Massachusetts Western, (which is their central.) Certainly it will do so, if the shortest and quickest route commands the business. It is not necessary to contrast the railroads occupying the respective lines. It is only necessary to look at *distances and grades*. They are all on the same side.

There can be little danger of diverting trade and travel from New York to Boston, when the shortest and best line is by way of Troy and Albany to both, and when New York is more than 50 miles nearer to these cities than is Boston. But why should the trade and travel from the Great Western in Canada come on to Lake Ontario at all? If it does, it must come to Oswego instead of Ogdensburg. The only effect of coming on to the lake is to produce delay. To lose time. To make more change necessary. In short, to follow the line of interruption, instead of the regular straight forward way that we all like to pursue. There is no danger of its being diverted from the railroad at Hamilton. Look at the map, and see that Hamilton, Niagara Falls, Rochester and Albany are in direct range. There is not the smallest reasonable probability of diversion. Every consideration of interest to the city of New York, to the proprietors of the central line of railroad, and to the traveller, favors the construction of the Canada road, and its connection with the central line in our State. The writer has had his attention turned to this, by an article in the Railroad Journal of December 6th, signed "Observer." The erroneous views presented in that article, need the corrections of fact here presented. The results will follow legitimately from the facts. In another communication, he may be inclined to notice more particularly the railroad now progressing from this city to Niagara Falls.

Rochester, December 15, 1851.

B.

Railroad from the Gulf of Mexico to Lake Superior.

An effort will be made this winter to secure to a line of railroad from Chicago, via Woodstock, Illinois, and Fond du Lac, Wisconsin, to Lake Superior, a grant of land similar to that given to the Mobile and Chicago line. Petitions for this object are being circulated all over the northern part of Illinois, and throughout Wisconsin.

The above is an excellent idea, and we sincerely hope it will be carried out. We must have a railroad to the great interior sea of Superior, or the resources of the vast region of country dependent upon it can never be properly developed. At the present time, all access to it by water is prevented by ice. With a railroad it would, as it were, be brought to our very doors. Think, then, of a straight line of railroad from the Gulf of Mexico on the south, to the *Ultima Thule* on the north, Lake Superior! There is sufficient strength in the very idea of such a line, to secure its construction. The general government would lose nothing, but gain infinitely by aiding this project, while the public good would be equally promoted. We go in for the Gulf of Mexico and Lake Superior railroad.

Virginia Central Railroad.

We learn from a recent report of the President that the completion of the road, commonly called the eastern extension, from the junction to Richmond, has been attended with very favorable results.

The receipts for the nine months ending 1st October, 1851, were \$117,703 63, whilst those of the same period for the preceding year were only 69,306 68 dollars, being an increase of 48,396 95 dollars. The report states that the receipts would have been greater, but the increased freight which could have been obtained on opening the road, was more than was expected, and more than the company was prepared to accommodate. The receipts of the first twelve months after opening the road to Richmond, supposing the fourth quarter of the present year to be equal to the average of the three first, are estimated at 156,937 17 dollars.—The receipts for transportation for the year ending 30th September, '50, were 91,078 83 dollars, and the receipts for transportation for the year ending 30th Sept., '51, were 143,801 64 dollars, being an increase of 52,722 81.

The profits for twelve months, from October first, '50, to October first, '51, were 64,986 86, being nearly 7 per cent on the whole capital employed which was 996,087 35 dollars.

The work on the road west of Charlottesville is progressing very well. The whole line to the town of Staunton is under contract. More than half of the graduation, including bridging and masonry, is now completed, and another section may be expected to be in operation before the winter sets in. The tunnel at Rockfish Gap, notwithstanding the reports to the contrary, is likely to be completed in three years from this date. The rock is very hard and compact, but that fact will not delay its ultimate completion, as the usual arching with brick will be rendered unnecessary. While the tunnel at Rockfish Gap is under progress of construction, the rails between Waynesborough and Staunton, will be laid, and a portage across the mountain be resorted to.

It is also proposed to relay the road from the junction to Gordonsville with the U rail. The great addition of tonnage which has already been received, and the still greater amount which may be anticipated from the extension to Staunton, renders this measure necessary. The cost of relaying the road will be amply repaid by the increase of business that will result from it.

We find in the engineer's report an account of the surveys of the different routes between Staunton and Covington. The two principal routes are by way of Jennings's Gap and Buffalo Gap. The former was surveyed by Mr. H. D. Whitcomb, and the latter by Mr. E. P. Goddard.

The length of the Jennings's Gap route from Staunton to near Clifton Forge was.....64½ Miles.
The Buffalo Gap to the same point was.....58½ "

Difference in distance.....6 "
The Buffalo Gap route being 6 miles the shortest was adopted, and on being re-surveyed, a satisfactory result was obtained. It has "surrendered" to seventy feet grades going east, and eighty going west. The cut at the summit being only 40 feet, the 80 feet grade going west has curves of large radii.

The estimated cost of the Buffalo Gap route for grading and masonry, for 35 miles west of Staunton, is 378,000 dollars, or 10,800 dollars per mile. The engineer hopes to have this section ready to

let by the first of December, and the whole line to Covington by the first of March.

Length of the road from Richmond to Staunton.....137 Miles.
Finished and in operation.....106 "

Unfinished.....31 "
The whole distance to Covington will be.....200 "

Lake Ontario, New York and Boston.

Your correspondent, Observer, in the 49th No. of your valuable Journal, truly says, Boston bids high for a preference over New York, by means of her road to Ogdensburgh and her steamers to Hamilton, thus connecting herself with Detroit by the great western (Canada) line of railway.

The interest and national pride of the Canadas will lead them to patronize this route, and the tendencies of the Toronto and Lake Huron road, as indeed of all of the Canada improvements is to foster the same interest. But it is the commercial importance of Lake Ontario that visits every movement upon her borders with such great interest.—Her ultimate commercial importance is one of the most interesting problems yet to be solved, situated much nearer to the Atlantic than any of the other great lakes; the vast regions lying on her northern side; the great valley of the lakes extending to the west of her, and draining the fertile regions east of the rocky mountains, and the favorable surface of the ground for building roads to Lake Huron, Michigan, and indeed any road running west in a line parallel with the course of the valley, give to her a position, which, although it has been partially overlooked in the settlement of a new country, will yet be felt in the building up of cities and in contracting our lines of internal commerce.

This is the first lake that is open to the direct competition of the great Atlantic cities. So long as this remains unoccupied, New York enjoys the commerce of the west through Lake Erie. No Atlantic city can come into direct competition with the line there. But let Boston aided by the Canadas, establish herself in the commerce of Lake Ontario, and extend her shorter roads west, and, New York would be compelled to meet Boston here, or surrender the sceptre of our northern internal commerce. Boston sagacity has taken the initiative and is courting the present powers in Canada. But New York has advantages that may yet more than balance the advantage on the start. Boston is 400 miles from Ogdensburgh. New York is less than 300 miles over the Legget's Gap and the contemplated Syracuse and Binghamton railroads, from Oswego, which has another 100 miles of lake and river advantage over Ogdensburgh. Boston is now diverting a large amount of business, but I trust that New York will not sleep while interests of such magnitude are at stake. H.

Pennsylvania Railroad.

This road was so far opened on the 10th instant as to leave only 28 miles of staging from Philadelphia to Pittsburg. The time between the two cities will be 24 hours. The Portage will be passed in the day time. The supply pipes for the stationary engines on the inclined planes of the Portage railroad have been sunk beyond the reach of frost, so that there will be no difficulty in working the road all winter. The express train will leave Pittsburg at half-past seven A.M., and arrive in Philadelphia the next morning, and Philadelphia in the evening, and arrive at Pittsburg the next evening. This will be a most popular route to the east, and must do a great business.

Virginia.

Virginia and Tennessee Railroad.—We are indebted to the Lynchburg Virginian for the following abstract of the report of the President of this road, in advance of the published report of the company.

The President commenced his clear and concise report by stating that the petition to the stockholders of the James river and Kanawha company for reduction of tolls upon the iron necessary for the road, to the lowest grade, has been unsuccessful; that the difficulty between the Board of Public Works and the company, as to the constitution of the directory, had been settled by the resignation of Col. Thos. J. Boyd, a director appointed by the stockholders, and the introduction of Joseph Wilson, Esq., on the part of the State—and here the President most justly complimented Col. Boyd, for his 'untiring devotion' to the interests of the company, thereby entitling him to the gratitude of the stockholders—that the board had purchased the property of the Lynchburg Manufacturing company, at a cost of \$17,078, and thereby secured additional depot room and facilities which were indispensable to the operations upon the road—that the finances of the company were represented as follows: whole number of shares held by others than the State, 9,674, and by the commonwealth 1,125, amounting in all to \$2,092,400. The balance reported in the treasury at the last annual meeting was \$57,265 35. The amount received in cash and 6 per cent bonds is \$836,919. The disbursements of the current year have amounted to \$701,196 90, leaving in the treasury a net balance of available funds, at the end of the fiscal year, of 219,988 05 dollars—that 35 dollars per share had been called in during the year—that since the close of the fiscal year, 30th September, individual subscriptions had been increased 47,500 dollars, making subscriptions by others than the state 1,014,900 dollars; a corresponding subscription on the part of the State of 3-5ths would be 1,522,350 dollars, making together 2,537,250. In addition to this, the counties of Washington and Smyth, have by a vote of the people, determined to take as county subscription, 53,400 dollars, which will draw from the State 80,100 more, making a gross addition to the means of the company of 133,500 dollars; requiring only 131,100 dollars more of individual subscription to complete the capital stock of 3,000,000 dollars.

The road is fast being graded between Salem and Wytheville; a few light sections only remaining to be let, which can be finished before wanted. "The board (continues the President) have steadily pursued the instructions given by the stockholders, at their second annual meeting, and have done all that sound discretion would permit. Few works in this country have ever progressed more rapidly, and everything has been done that was necessary to make the work perfect and durable."

In pursuance of the settled policy of the company, a letting has been advertised to take place at Wytheville, of so much of the work between that place and the Tennessee line, "as the condition of the finances will permit."

The survey of a branch down New river, shows very favorable results; so much so, that if a road be constructed to the mouth of the Greenbrier, it can carry the tonnage destined to Richmond, against all competition from other roads, "so that even if other interests should require—and the State should authorize a road between these points, passing through Staunton, it would not diminish

the necessity for the branch proposed, nor effect its value." A recommendation is therefore made by the President to apply for authority to construct this branch with others to Guyandotte and Point Pleasant—the stock, expenses and dividends to be kept separate from those of the main stem. The President closes his interesting report by saying: that every possible attention has been paid to the interests of the company, by those who have been entrusted with its management—he justly characterizes it as a work of great magnitude and State importance, and one well "calculated to afford relief to the wants of our common country, and elevate the destinies of our beloved old Commonwealth."

Pennsylvania.

Allegheny Valley Railroad.—Great interest is felt in Pittsburgh in reference to this project. We understand that Gov. Johnson is to be placed at the head of it. The distance from Pittsburgh to Olean it is stated, will not exceed 160 miles. For a greater part of this distance the line traverses the great Bituminous coal field of Penn., and a most fertile and productive country. At Olean it will connect with the Erie and the Genesee Valley railroad. The route is favorable, and can be built at a low cost. It will immediately be constructed, and operations commenced at an early day.

The Pittsburgh Gazette urges the people of that city to take immediate measures to secure the charter, and sees great danger threatening the enterprise. And to the interests of Pittsburgh, in the proposed road from Blairsville to the town of Indiana. In reference to this project it says.

Those who read the late report of the Central railroad company will remember that it speaks of a branch road extending from Blairsville to the town of Indiana. We have recently ascertained, however, that the stock is nearly all taken, and that it will soon be made. But that is not all. The next step is to extend the road northwardly from Indiana to the Mahoning, and down that stream to the Allegheny river. Now what will be the effect of all that? The Hempfield route extends from Wheeling to within a few miles of Blairsville.—Blairsville is but 15 miles from Indiana, and Indiana is within 20 miles of Mahoning. Thus we see that a man could be on the Mahoning from Wheeling, by that route, in less time than he could reach Pittsburgh in a steamboat. We tell the people of this city, that unless they arouse from their lethargy they will very soon find themselves stranded high and dry. We have, it is true, the shortest and best route by which to reach the valley of the Allegheny, and, through it, Western New York; but what good will that do us, unless we avail ourselves of it? We have let the New Yorkers get around us on one side, and the Baltimoreans will soon be round us on the other; and now, by the Hempfield and the Blairsville and Indiana roads, we are likely to lose a part even of the valley of the Allegheny. Pittsburgh has lost enormously by her slowness.

Green Bay and Lake Superior Railroad.

At a regular meeting of the stockholders of the Green Bay and Lake Superior railroad company, held in this city, yesterday, Jonathan Child, Alvah Strong, John Thompson, Jr., Esquires, Hon. Nicholas E. Paine, and Hon. Samuel L. Sheldon, of this city, Heman B. Ely, of Cleveland, Ohio, and John F. Ely, of Iowa, were chosen directors. Heman B. Ely was subsequently elected President of the company, and John Thompson, Secretary and Treasurer. These gentlemen are well known to the public.

We understand that it is the intention of the company to place a corps of engineers upon the work immediately; and that the northern portion of the road will be put under contract early in the spring, and completed next season. By this means the resources of the mineral region will be made available.—*Rochester Democrat.*

Tennessee

Nashville and Chattanooga Railroad.—This road is making rapid progress, and it is expected that by the first of January 70 miles will be completed and in operation.

The Tennessee papers state that "the effect of the construction of this road upon the prosperity of Murfreesboro' and Shelbyville has exceeded the most sanguine expectations of the property holders of these flourishing towns. Property in their several limits has appreciated 50 per cent., and in some instances as high as 100 per cent.; an impulse has been given to manufacturers; an influx of emigration of mechanics—the class of population from which all the permanent prosperity of a town is derived—has set to them; and turnpikes are projected through counties at a distance from the road, and their construction will serve as feeders to supply the nourishment and support the continued growth of the towns to which they tend."

"This remarkable change has not been confined to the towns, but the entire face of the country, along the track of the railroad, has exhibited the transforming influence of this great renovator. To say nothing of the appreciated value of land, we saw evidence of the effect which the increased value has had in bringing into cultivation lands which previously to the construction of the railroad, were considered waste and unprofitable."

York and Cumberland Railroad.

The business of this road continues to show a steady increase. The two months since the annual report present the following receipts for passengers and freight, viz:

	Passengers.	Freight.	Total.
September.....	\$1,369.84	873 42	2,243 26
October.....	2,310.41	1,163 50	3,474 21
Increase.....	\$941 57	\$290 38	\$1,230 95

The number of tons freight carried in September was 2,310; October, a little over 3,000—increase, 690 tons.

Almost all the freight over this road passes to and from Baltimore, and accordingly affects the trade of our city and the Baltimore and Susquehanna railroad in a corresponding ratio.

Tennessee.

A railroad convention was held at Sparta, Tennessee, on the 1st of December, 1851, and adjourned to meet there again on the second Saturday of January, 1852. A circular from a committee of the convention, which is before us, states that great interest has been awakened in the interior of Kentucky and Tennessee, to the importance of opening outlets north and south for their productions, and of a direct line of railway from Cincinnati through the interior of Kentucky, skirting the base of the Cumberland mountains, passing thro' Tennessee and Alabama, to Mobile. Attention is asked to the important fact, that the most direct line for a road to connect Mobile with Cincinnati, will afford us the shortest, cheapest, and best means of communication with Charleston and Savannah. On the route indicated, works are projected and progressing, leaving to be finished but 120 miles of road "to perfect the great chain of northern and southern connection."

Improved Railroad Truck.

Mr. Abram Snyder, of Hawley, Wayne county, Pa., has invented an improved truck for railway cars, which consists in having three pairs of wheels to one truck, and each pair of wheels to be placed in a frame, and three frames being connected by a joint in such a way that each frame will conform to the curvatures or inequalities of the road without causing any strain upon the others. He employs cast iron frames which cannot be employed in the ordinary trucks. On the upper surface of the track, and over the joint, is placed a circular rim, which serves as a guide to the pair of wheels in the centre of the frame. This guide prevents the centre wheels from getting off the rails, and it also is acted upon by the front frame, so that the centre wheels are assisted in turning or conforming to the curvatures of the road with as little friction as possible.

Important Decision.

In the United States District Court, held in Boston, Judge Curtis presiding, the case of Salmon Falls Manufacturing company vs. W. W. Goddard, has been on trial for several days past. The suit was to recover the value of three hundred cases of manufactured goods, which plaintiffs contracted to deliver to defendant. The goods were burnt at the destruction of the Maine Depot in Boston. The defendant was notified that the goods were at the depot, but the question being submitted to the Court whether or not this constituted a legal delivery, it was decided that it did not, and the Jury were directed to return a verdict for defendant.—The contract between the two parties specified that the goods should be delivered on board the defendant's vessel.

Canada.

Richmond Railway.—We understand that the directors have accepted the tender of Messrs. Rigney and Rutherford, of Montreal, for the work on the first division of the road, viz., from Hadlow Cove to the river Chaudiere. The Contractors are under engagement to commence immediately—and the long and heavy embankment at the back of New Liverpool will be principally finished this winter.

We learn further that the directors intend making monthly calls of £1 per share, for six months hence, to enable the work of construction to proceed as rapidly as possible this winter, and to be prepared for increased operations in the spring. We hope the shareholders will second the efforts of the directors, and within two years we shall be able to travel with speed and comfort wherever we please.

Baltimore and Susquehanna Railroad.

The winter arrangement for the running of the cars on this road, comprising many important changes and facilities, will go into operation on and after Monday next. The express mail train will leave at 7½ P. M. running through to Harrisburgh in three and a half hours. The morning passenger train will leave at 8½ o'clock. The afternoon passenger train will leave at 3½ o'clock. On and after the 20th December passengers in the express mail train will be conveyed to Pittsburgh in 22½ hours, with only 23 miles of coach riding. We will publish the advertisements giving the schedule of these arrangements on Monday next.

East Tennessee and Georgia Railroad.

The Knoxville Register of the 4th inst., says—"that subscriptions of stock in the East Tennessee and Georgia railroad company have been taken in the counties of Knox, Roane, Anderson and Morgan, to the amount of \$165,000. The right spirit is animating the people of Knox county, and it manifested itself on Monday in a most commendable manner. We feel certain now that the necessary amount of stock will be taken; and we feel proud that the people of Knox county are thus nobly coming up to their duty. The citizens of Roane, Morgan and Anderson deserve great praise for the interest they have manifested in the success of the road. They are doing nobly in the way of taking stock."

Pennsylvania.

The Union canal is completed to Pine Grove, and the extension to that place is said to be one of the finest works in the State. The three feeders from the water works on the main line to Pine Grove, a distance of some 25 miles, have been enlarged, and upon which is built some 20 or more locks, of the same capacity of the Pennsylvania canal, of cut stone, and in the most approved manner. Their docks and schutes, and other arrangements for shipping coal, exceed anything of the kind in this country. The whole work will be ready for the spring business.

Maine.

Kennebec and Portland Railroad.—This road has been opened to Augusta, and the regular business trains will soon commence running.

TO FOUNDRYMEN, AND Contractors for Iron Castings.

THE Proprietor of the Rossie Furnace, St. Lawrence County, N. York, having lately erected at their works a Casting House 125x75, with suitable Cupolas, Cranes, etc., and a Machine Shop, furnished with a considerable stock of tools, and a water wheel of 30 horse power—the whole carried out in the most substantial manner—offers the use of these premises, in connection with the sale of Rossie Iron, to manufacturers and contractors for castings and machinery.

There are 2000 tons of hot and cold blast iron now at the works, any part of, or more than which, might be contracted for in connection with the above; and as liberal terms of credit would be extended to parties offering satisfactory security, it is supposed that the conditions contemplated may present no ordinary advantages to persons desirous of a large business on a limited capital.

It may be useful to add that the Cold Blast Iron made at these works is of a very superior quality for Car Wheels.

Rossie is 6 miles from the River St. Lawrence, and connected by a good Plank road all but 1 mile. For further particulars, apply to D. W. Baldwin, Agent, at the works, or at the office of the subscriber, Ogdensburg, St. Lawrence Co., N. Y.

G. PARISH.

December 20, 1851. 6t*

To Railroad Car Builders and Manufacturers Generally.

THE Cincinnati, Hamilton and Dayton Railroad Company, at Cincinnati, have ten acres of land adjoining the City and near the Ohio River—their Road running through its center—which they will lease for a term of years, or perpetually, for the establishment of a Car Manufactory, or for any purpose connected with the furnishing of Machinery for Railroads.

The Company have at their Depot grounds, at Cumminsville, about five miles north of the city, six acres of land, eligibly situated for a variety of Manufacturing purposes, which they offer for lease on advantageous terms.

They have, also, on the line of their Road, in the town of Hamilton, 25 miles north of the city, about forty acres of land, situated on the Hamilton Hydraulic Works, where a Water Power can be displayed advantageously, and the same had on favorable terms. This property is also eligibly situated for Manufacturing purposes, and will be sold or leased on accommodating terms.

The above described property is admirably situated for the successful prosecution of the objects referred to, connected as the Road passing through it is with other Railroads built and building into Western and Northern Indiana, and Northern and Eastern Ohio; and the first described land lying near the line of the Cincinnati and St. Louis Railroad.

To skilful and enterprising Car Builders, possessing sufficient capital for the prosecution of that business, the inducements are peculiarly flattering.

For further particulars address, at Cincinnati, S. S. L'HOMMEDIEU, Pres't C., H. and D. R. R.

New England Car Spring Co., No. 104 Broadway, New York, MANUFACTURERS OF INDIA RUBBER CAR SPRINGS & HOSE,

Of F. M. Ray's improved form, and dealers in every description of Rubber Goods for Railway purposes.

All Goods manufactured by this company are warranted of the best materials, and the same composition which has established the reputation of F. M. Ray's India-rubber Car Springs.

F. M. RAY, Agent.

Railroad Iron.

THE undersigned offer for sale 1000 tons Railroad Iron, (about 56 lbs. to the yard,) now at Brooklyn.

CHOUTEAU, MERLE & SANFORD,
Oct. 1, 1851. 51 New st.

To Civil and Mining Engi- neers and Surveyors.

A YOUNG MAN having lately completed an engagement of six years with an eminent Civil and Mining Engineer in Scotland, is desirous of a situation in that capacity. Has had considerable experience in the mines of Scotland, and is in possession of all instruments necessary for land and mining surveying. Address A. S., care Mr. D. H. Arnot, 50 Wall St., N. Y.

Dec. 13th. 1m*

Notice to Contractors.

Virginia Central Railroad.

SEALED PROPOSALS will be received at the Engineer's Office of the Virginia Central railroad at Staunton, on the 18th day of December, 1851, for the Grading, Masonry, etc., of that portion of the line extending from Staunton to Panther's Gap, a distance of 35 miles. Drawings and specifications of the work may be seen from the 15th to the 18th of December, inclusive.

The best of references will be required. Contractors are requested to state what work they are engaged upon, and when it will be completed.

The Directors reserve the right to accept or reject proposals as they may consider the interests of the company require. The names, in full, of all the parties must be given in the proposals.

By order of the President and Directors.

T. COLDEN RUGGLES,
Chief Engineer.

Railroad Instruments.

THEODOLITES, TRANSIT COMPASSES & LEVELS on a new principle, with Fraunhofer's Munich Glasses, Surveyors' Compasses, Barometers, Chains, Drawing Instruments, etc., all of the best quality and workmanship, for sale at unusually low prices by

E. & G. W. BLUNT,
No. 179 Water st.

New York, Dec. 1, 1851.

M. B. Hewson, Civil Engineer,
(Open to a New Engagement.)
Memphis, Tenn.

LOWMOOR LOCOMOTIVE TIRES.

THE Subscriber, sole agent for the Lowmoor Co., is prepared to take orders for this superior description of tires, which are furnished, bent, welded and blocked to any dimensions, having but one weld, and at a cost to the importer of less than ten cents per pound for the heaviest weights.

WM. BAILEY LANG.

Boston, November 29th.

1m

Railroad Iron.

2000 TONS of an approved pattern 59 to 60 lbs. per lineal yard, now manufactured in England, and ready for immediate shipment, from thence.

Also, 2,500 tons of different patterns in port and expected to arrive within sixty days. For sale by DAVIS, BROOKS & Co.

28 Beaver Street, New York.

CONTRACTS made for Railroad Iron at a specific price delivered in England, or at port in the United States.

PREMIUM RAILROAD CAR SPRINGS, AND OTHER

India-rubber Goods.

TWO Prizes were awarded me last month by the American Institute—one for best Car Springs, the other for best Overshoes. This proves the superiority of the Goods made by me.

HOSE and STEAM PACKING, and all other India rubber goods for Railroad purposes, on hand and for sale cheaper than any other house.

Car Springs, 50 cents per lb. for cash—of the best quality and of all sizes, (Fuller's patent.)

I now give notice that Fuller is the original and true inventor of the India-rubber Spring, and companies who use Springs made by other parties will eventually have to pay me damages. H. H. DAY,

23 Courtlandt st., New York.

Inventor and owner of 17 U. S. Patents, and the oldest Manufacturer of India-rubber in the U. S.
December 6, 1851.

To Railroad Companies.

H. & F. BLANDY, Proprietors LOCOMOTIVE ENGINE WORKS, ZANESVILLE, OHIO.

RESPECTFULLY give notice to Railroad Companies that they are now prepared to furnish Engines of the most approved construction and finish, which, for capacity, speed and durability, are not excelled in this country.

Also, all other Railroad machinery, of both wrought and cast iron, pertaining to the road, stations or machine shops.

Terms as favorable as any other builders in the United States.

The facilities for transportation from Zanesville are as good as from any other point in the Union, having steamboat navigation to the Ohio river, and Canal boat and Railroad connection with the Ohio river and Lakes.

One of their Engines, the "MUSKINOM," on the Central Ohio Railroad, may be referred to, or others, at their works. The attention of those interested is invited, and orders solicited.

Oct. 30th, 1851.

To Contractors.

OFFICE OF THE E. AND ILL. R. R. Co.,
Evansville, Oct. 23d, 1851.

SEALED PROPOSALS will be received at this office from the 13th to the 23d day of December next, for the grubbing, grading and bridging of that portion of the Evansville and Illinois railroad, lying between Princeton and Vincennes, a distance of 24 miles.

This work includes two bridges; one across White River, about 600 feet, the other across Patoka, about 200 feet.

Contractors will state what proportion of the Stock of the Company will be taken in payment.

Plans, profiles and specifications, will be exhibited, and all requisite information given at the Office of the company in Evansville, on and after the 13th day of December next. By order of the Board of Directors.

SAM'L. HALL,
President.

RAILROAD SPRINGS.

Fuller's India-rubber Springs.

THESE are now made in our own Factory, of the best materials. Each spring is guaranteed to perform the required work. Purchasers guaranteed against adverse claims.

Car Builders will save great expense by calling at the office of the Company.

23 Courtlandt St., New York.

To Railroad Companies.

THE undersigned has discovered and patented an imperishable, cheap, and sufficiently elastic substance, to be introduced between the sill and rail, so that the stone sill can be used in place of the wooden sill: entirely overcoming that rigidity where the rail is laid directly on stone. Address

J. B. GRAY, Philadelphia.

July 10, 1851. 4m

Railroad Iron.

THE undersigned are prepared to enter into contracts now at specific prices, to deliver Railroad Iron during the coming Winter and Spring, free on board at the shipping ports in Wales, or at ports in the United States.

CHOUTEAU, MERLE & SANFORD,
Sept. 30, 1851. No. 51 New st.

To Contractors.

OFFICE WILMINGTON & MANCHESTER R. R. Co.,
Marion C. H., S. C., October 18, 1851.

SEALED PROPOSALS will be received until the 15th of December next, for the Piers of a Bridge across the Great Pee Dee River. The work comprises four piers, one a very heavy pier for a draw, and the sinking of cast iron hollow piles by "Dr. Pott's Pneumatic Process," for forming foundations. The plans and specifications of the piers will be exhibited by the Secretary of the Company at Marion Court House, and by the Resident Engineer, L. J. Fleming, Esq., at Wilmington, North Carolina.

WALTER GWYNN,
Chief Engineer Wilm. and Man. R.R.
November 1. Richmond, Va

Bridges & Brother, DEALERS IN RAILROAD AND CAR FINDINGS, 64 Courtlandt street, New York.

Having established a general Depot for the sale of articles used in the construction of Railroads, Locomotive Engines and Railroad Cars, we would invite your attention to our establishment. We have already in store a good assortment of CAR FINDINGS and other articles used in the trade, and feel justified in saying, that should you desire anything in our line, we can supply on terms perfectly satisfactory, and in the event of your desiring to order, you may feel assured that your terms will be as good as though you were here to make your own purchases.

Among our goods may be found Railroad Car Wheels, Axles, Jaws and Boxes, Nuts and Washers, Bolts, Brass Seat Hooks and Rivets, Window and Blind Springs, Lifters and Catchers, Door Locks, Knobs and Butts, Ventilators and Rings, Car Lamps, Coach and Wood Screws, Jack and Bed Screws and Babbitt's Metal; also Plushes, Damask, Enameled Head Linings, Cotton Duck for Top Covering in width sufficient without seams, Curled Hair and all other articles appertaining to cars.

Also a new and valuable CAR DOOR LOCK, well adapted to the Sliding Door. This is decidedly the best yet introduced.

LOCOMOTIVE ENGINE LANTERNS, the best article made in the country. Whistles, Gauge and Oil Cocks, Hemp Packing, American, Russian and Italian. We are also agents for Lightner's Patent Journal Box for Car Axles, that invaluable invention, for the economical use and preservation of Car Journals.

Coach VARNISH and Japan of the best quality. We would also offer our services for the purchase as well as for the sale of goods on commission.—Both members of our firm have had the experience of many years in the manufacture of Railroad Cars, and our Senior was a member of the well known house of DAVENPORT & BRIDGES, Car Manufacturers, Cambridgeport, Mass. With our knowledge of matters pertaining to Railroads, we feel quite confident in giving satisfaction to both buyer and seller, and hope that through assiduity and attention to any business entrusted to our care we shall merit a continuance of confidence and patronage.

BRIDGES & BROTHER.

July 22, 1851.

Lightner's Patent Axle Boxes.

The undersigned are Agents for, and offer for sale, *Lightner's Patent Axle Boxes*, for Railroad Cars and Tenders, which have, by thorough experience, been demonstrated to be one of the most valuable improvements ever introduced in Locomotion. The saving effected in oil alone, will in a few months pay the first cost of these boxes, independent of other advantages. They are now in use upon the following, among other roads, viz:

Boston and Worcester, Boston and Providence, Boston and Fitchburg, Nashua and Lowell, Providence and Worcester, Northern, N.H., Cheshire, Manchester and Lawrence, Concord, N.H., Concord and Claremont, Ogdensburg, (Northern, N.Y.) Stonington, New London Willimantic and Palmer, New Jersey Central, New Hampshire Central, Worcester and Nashua, Fitchburg and Worcester, Connecticut and Passumpsic, Lowell and Lawrence, Salem and Lowell, Wilton Branch, Newburyport.

Below will be found the certificates of a number of gentlemen, whose opinions will be good authority in every part of the country.

Office Boston and Prov. R. R.,
Boston, Dec. 28, 1849.

Mr. JOHN LIGHTNER,

Sir,—It affords me pleasure to say, that after two years' trial of your boxes, I am fully and entirely satisfied of their superiority over any other pattern we have used. This superiority consists in economy of oil and freedom from "heating." I have tried every pattern of box in use, of any note, and do not hesitate to say, that you have devised one which in every respect combines greater advantages than any other within my knowledge, these advantages are so manifest, that I am flitting up all

our cars with your boxes, as fast as practicable.

Annexed, is a statement of an experiment with your boxes, the result of which may be of use to your interests.

Ten passenger cars, running 72 wheels, fitted up with Lightner's boxes used 41½ pints of Patent Oil, at 50 cts. per gallon, ran 43,099 miles, equal to 5-18 pints per wheel for 43,099 miles. Speed, 30 to 40 miles per hour.

Very respectfully yours,
W. RAYMOND LEE, Supt.

I have examined the above statement of Mr. Lee, and fully concur with him in his opinion as to the superiority of Lightner's box.

GEORGE S. GRIGGS,
Supt. Machine Shop B. & P. R. R.

Boston, July 26, 1849.

This is to certify that J. Lightner's axle boxes for railroad cars and locomotive tenders, have been in use on the Boston and Worcester railroad one year, and I unhesitatingly pronounce it, in my opinion, the best and most economical one in use, requiring less oil, of easy application, not susceptible of derangement, as in most kinds in use. When requiring repairs or renewal, the same may be done in one-fourth of the time usually occupied for that purpose. The box requires oiling not oftener than once a month—is kept quite free from dust, and consequently wears much longer than those generally in use.

D. N. PICKERING,
Supt. Motive Power, B. & W. R. R.

Office of Boston Locomotive Works,
December 12th, 1849.

The Boston Locomotive Company have been using J. Lightner's patent axle boxes under the tenders of their engines for several months, and find them more highly spoken of by the railroad companies that have used them in regard to economy in the use of oil, their durability and their ease of adjustment, than any other boxes which they have used. We therefore do not hesitate to recommend them to all railroad companies.

DANIEL F. CHILD,
Treas. Boston Locomotive Works.

Taunton Locomotive Works,
Taunton, July 7, 1849.

Mr. H. F. ALEXANDER,

Dear Sir,—Your favor of yesterday came to hand in which you ask what success we have met with, in using Mr. Lightner's patent box for cars, engines, &c.

We have put it in use on the Boston and Providence railroad, New Bedford and Taunton Branch railroad, Central railroad, N. J., Norfolk County, Rutland and Burlington, and as yet we have not had one complaint from them; and from what we have used of it, and witnessed, we do not hesitate to say that it is superior to anything in use for that purpose. It is simple in its construction, and easy of access, and the reservoir is held close to the shaft, and the oil and journal is perfectly secure from dust; they will run from four to six weeks without replenishing the oil. The brass in the box is changed very much easier than by any other plan that we have seen.

Very resp. yours,
W. W. FAIRBANKS, Agent.

Office Providence & Worcester R. R. Co.,
Providence, Dec. 17th, 1850.

H. F. ALEXANDER, Esq.,

Sir,—The "Lightner patent boxes" for cars and locomotives have been in use under a portion of the passenger cars and engines of this company for upwards of two years, and have given very great satisfaction.

Though combining many excellent qualities, their great superiority consists in the economy of oil.

The result of experiments upon this road shows the consumption of oil by the use of this box, to be not more than one sixth part the quantity consumed by the use of the common box.

With the common box, eight passenger cars, 64 wheels, running 90 miles per day, consumed in 12 months 520 gallons of oil, being an average of 8½ gallons per wheel per annum.

With the Lightner box the same cars running the same number of miles per day, during the same space of time consumed 73½ gallons of oil, being an average of 1½ gallon per wheel per annum.

So manifest are its advantages over any other box used by this company, it is intended to place it under all our cars as soon as practicable.

Besides the saving of oil, as they afford complete security from dust, we think them more durable than any other box in use.

Another advantage resulting from the use of this box is, cars run more easier than with the common box. The saving in fuel which it would effect, would of itself, we think be a sufficient inducement to use this box in preference to any other known to us.

Very respectfully,

ISAAC H. SOUTHWICK, Supt.
JOHN B. WINSLOW,
Supt. Machine Shop, P. & W. R. R.

Cambridgeport, Apr 5th, 1851.

H. F. ALEXANDER, Esq.

Sir,—This may certify that I have been engaged in the manufacture of railway cars since 1834, and have built for the different railroad companies cars of all descriptions to the amount of three millions of dollars, and have used on the above cars all kinds of journal boxes, and find that none give better satisfaction than the "Lightner patent box," both on account of the saving of oil and the arrangement for taking out and re-placing the composition by means of the sliding key, and other conveniences which no other box possesses.

Yours respectfully,
CHARLES DAVENPORT.

Worcester, March 17th, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—This is to certify that I have been for some years past engaged in building cars, and that I have tried most, if not all of the patent boxes, and have found Lightner's patent superior to all others as far as the saving of oil is concerned, also the ease with which they are fitted and exchanged in case they get out of order.

For the last three years, I have put them under all of the cars I have built, and in every instance they have given the most entire satisfaction.

Yours truly,
OSGOOD BRADLEY.

Office Union Works, So. Boston,
May 23d, 1851.

This certifies that I have applied Mr. J. Lightner's patent axle boxes to my locomotives and tenders for the past two years. I consider them superior to all others,—economical in their use, and possessing many important advantages not found in any other boxes.

SETH WILMARTH.

Office 15, R. R. Exchange, Boston,
June 1, 1851.

This is to certify, that we have known the success of Lightner's patent journal boxes upon various roads in New England the past three years, and have been led to examine their peculiar construction.—We are well satisfied of their merits, and have adopted them upon our small gravel cars, and take pleasure, as we ever have done, in recommending their use upon all roads where we are employed in the construction.

GILMORE & CARPENTER,
Contractors.

Amoskeag Manufacturing Co. Machine Shop,
Manchester, May 31, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—We are using the Lightner box on all the engines and tenders we build, and we are satisfied that it is the best box in use, and recommend the same to all those who purchase engines at our works.

Yours respectfully,
O. W. BAYLEY, Agt.

This is to certify that the Fitchburg railroad company having become satisfied of the superiority of J. Lightner's patent Axle Boxes for Railway Cars and Locomotive Tenders adopted the same

and are bringing them into general use upon their road.

One year's experience with the above improvement, has fully convinced me that there has never been anything offered to the public for that purpose which possess such intrinsic value; in fact, this is an improvement which seems to overcome all the difficulties found in all the various kinds now in use. It possesses very many advantages over all others: Some of which are [first] the first cost is much less than that of most boxes in use. [Secondly] 75 per cent is saved in oil; one gill applied to each Journal once a month, or one quart to an eight wheel car, is all these boxes require per month [Thirdly] no dust can gain access to the Journal, which is constantly lubricated with clean oil; hence the saving in repairs of Journals and composition bearings, is a matter of importance. [Fourthly], its construction is truly simple—not complicated, having nothing liable to become loose by constant and severe service. [Fifthly] for convenience there is nothing which approaches this improvement.—The composition bearings may be removed from the Journals of an eight wheel car, by one man, and returned, or duplicates, in twenty minutes, while under the car: the same would require two men, at least half a day with other boxes in use.—The trucks and wher's using these boxes, are free from oil and dirt, usually seen upon all railroad cars, at great expense to the corporation.

NATH'L JACKSON.

Supt. Car Building and Repairs, F.R.R. Co.

Boston, March 9, 1849.

I hereby certify, that I have examined a box for Car Journals, invented by Mr. Lightner of Roxbury, Mass, and I have thought so well of it that I have adopted it on our railroad, I have known of its success on other roads.

S. M. FELTON,

Supt. F. R. R.

Office of the Central R. R., N. J., }
Elizabethtown, May 1849. }

H. F. ALEXANDER, Esq.,

Dear Sir:—Your favor, [wishing to be informed how we liked Lightner's patent axle boxes for R.R. Journals,] has been duly received; in answer we would say, we have used the boxes on Locomotive tenders one year, more or less, and on our cars some six months. I consider them the best boxes in every respect, I have ever used, or even seen used on any other roads—for safety, durability and the economy pertaining to all the details connected with the boxes and Journals of R. R. Car wheels; and we shall adopt them upon this road.

Yours Respectfully,

JOHN O. STEARNS.

Supt. Central Railroad Co., N. J.

Manchester, N. H., Nov. }
1st, 1850. }

H. F. Alexander, Sir,

I have used "Lightner's Boxes" under all the Cars of the Manchester and Lawrence railroad, and feel no hesitation in saying that I think them to be the best boxes now in use.

Yours, &c.,

THEODORE ATKINSON, Agent.

Cheshire R. R. Office, Keene, }
March 5th, 1851. }

Mr. H. F. Alexander,

Sir,—Lightner's Patent Boxes have been used on the Cheshire R. R. about a year, and have given the highest degree of satisfaction.

All the Passenger Cars now in use, and a considerable number of Merchandize Cars are furnished with them, and they will take the place of the Common Boxes on all the cars as fast as circumstances will permit.

Very Resp't.

L. TILTON,

Supt. Cheshire R. R.

Boston and Worcester Railroad, }
Boston, April 1st, 1851. }

H. F. Alexander, Esq.,

Dear Sir,—Lightner's Patent oil saving box for railroad cars, has been adopted by this corporation; we are taking out the common and substituting the

Lightner's at the rate of fifty boxes per month; it will soon take the place of all others, as it is decidedly preferable to any heretofore used by this corporation.

G. TWITCHELL, Supt.

Statement of amount of oil used on 32 8-wheel freight cars, on the Boston and Providence Railroad (with Lightner's Boxes) from March 10, 1849, to February 27, 1851, and upon 12 8-wheeled passenger cars from September 8, 1849, to February 27, 1851.

FREIGHT CARS.

Amount Oil.	No. months.	Amount Oil.	No. months.
1.—21 pts.	10	17.—23½ pts.	14
2.—19 " "	6	18.—23½ " "	11
3.—25 " "	13	19.—36 " "	21
4.—18 " "	7	20.—22 " "	10
5.—22 " "	12	21.—38½ " "	24
6.—24 " "	13	22.—29 " "	23
7.—20 " "	11	23.—35½ " "	23
8.—21 " "	11	24.—37½ " "	23
9.—23½ " "	10	25.—51 " "	23
10.—21 " "	9	26.—31½ " "	24
11.—20 " "	9	27.—28½ " "	23
12.—21½ " "	11	28.—36 " "	23
13.—19 " "	8	29.—50½ " "	24
14.—25½ " "	17	30.—50 " "	23
15.—20½ " "	10	31.—41 " "	23
16.—31 " "	18	32.—39½ " "	23

Total, 925½ pts. 510

PASSENGER CARS.

1.—19½ pts.	18	7.—30 pts.	18
2.—25½ " "	18	8.—25½ " "	18
3.—33½ " "	16	9.—29 " "	18
4.—19 " "	15	10.—46½ " "	17
5.—15 " "	15	11.—9 " "	9
6.—22 " "	18	12.—65½ " "	17

Total, 340 pts. 197

Averaging 1 4-5 pints of oil for freight, and 1 7-10 for passenger cars per month only!

All orders and enquiries promptly attended to.

BRIDGES & BROTHER,

No. 64 Courtlandt st., New York.

July 25, 1851.

Trautwine on R. R. Curves.

By JOHN C. TRAUTWINE, Civil Engineer, Philadelphia, Pa.

JUST published, accompanied by a Table of Natural Sines and Tangents to single minutes, by means of which all the necessary calculations may be performed in the field.

This little volume is intended as a field-book for assistants; and will be found extremely useful, as it contains full instructions, (with wood cuts) for laying out, and adjusting curves; with Tables of Angles, Ordinates, etc., for Curves varying from 13 miles, down to 146 feet Radius.

A portable Table of Natural Sines and Tangents to minutes, has for a long time been a desideratum among Engineers, independently of its use in laying out curves.

The volume is neatly got up in duodecimo; and handsomely bound in pocket-book form.

Sold by Wm. Hamilton, Actuary of the Franklin Institute, Philadelphia. Price \$1.

Also, "Trautwine's Method of Calculating Excavation and Embankment."

By this method, which is entirely new, (being now made known for the first time) the cubic contents are ascertained with great ease, and rapidly, by means of diagrams, and tables of level cuttings. Thin octavo; neatly half bound, \$1. For sale by Wm. Hamilton.

June 28, 1851.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff St.

CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by POWERS & WEIGHTMAN, manufacturing Chemists, Philadelphia.

Jan. 20, 1849.

To Chief Engineers, Directors of Railroads, Canals, etc.

A Civil Engineer and Surveyor, who has been professionally engaged under the British Government, East India Company, etc., is desirous of obtaining employment as an Assistant. No objection to the South or West. Address for one month to C. E. & S., American Railroad Journal office.

August 16, 1851.

To Engineers.

A NEW WORK on the Marine Boilers of the United States, prepared from authentic drawings, and illustrated by 70 engravings, among which are those of the fastest and best steamers in the country, has just been published by B. H. Bartol, Engineer, and is for sale at the store of

D. APPLETON & CO.,

Broadway

September 1, 1851.

Pneumatic process for making Foundations for Bridges, Piers, etc.

THE Attention of Engineers, Contractors, and Bridge Builders, etc., is directed to this method of forming secure foundations. Hollow Cylindrical piles from 8 inches to 10 feet in diameter may be sunk through sand, mud, clay, etc., to any required depth, and filled with concrete or masonry.

The efficacy and economy of the process has been demonstrated in the construction of numerous permanent works, at a much less cost than the use of any other method. (See evidence in Parliamentary enquiry, Railroad Journal, April 19, 1851.)

Contracts made, or licenses granted for the use of the invention in any part of the United States, by

CHARLES PONTEZ,

34 Liberty street, N. Y.

LOWMOOR IRON.

THE LOWMOOR IRON COMPANY having appointed Wm. BAILEY LANG their sole agent in America and Canada, he is now prepared to receive and execute all orders for Railway Tires Bars, bent, welded, and blocked Railway Tires, Axles, Piston Rods, and Boiler Plates. Also, plain, angle, rivet and every other description of Lowmoor Iron.

All communications respecting the above are requested to be sent to Wm. Bailey Lang, at his Steel Warehouse, No. 9 Liberty Square, Boston, or to the Lowmoor Iron Works, Bradford, Yorkshire, England.

30th Sept., 1851.

RAILROAD SPRINGS.

Fuller's Patent India-rubber Springs.

PRICE reduced to 50 cents per pound. The owners of this Patent now manufacture the Springs in their own Factory, and guarantee that each spring shall perform its required duty.

Purchasers guaranteed against adverse claims. They may have full confidence in the working qualities of the springs.

The suits brought against Ray & Co., will soon be brought to issue, and we await the result with satisfaction, having full confidence in the pure administration of the Laws.

The long advertisements put forth by Ray & Co. about prior invention of the spring are worthless he has not proved prior invention, and cannot sustain his patent in a Court of Law.

For the owners of Fuller's Patent,

G. M. KNEVITT,

23 Courtlandt st., New York.

October 7, 1851.

Railroad Iron.

THE undersigned, Agents for British Manufacturers, continue to sell Railroad Iron of the best quality, and of any weight or pattern required; deliverable at any part of the United States or Canada.

They have now on hand, ready for delivery New York:

2,000 tons of an approved pattern, weighing about 60 lbs. to the yard.

WM. F. WELD & CO.,
42 Central Wharf, Boston.

Practical and Scientific Books

PUBLISHED BY

HENRY CAREY BAIRD,

SUCCESSOR TO E. L. CAREY, PHILADELPHIA.

For sale by Dewitt & Davenport, Tribune Buildings, New York, and Booksellers generally throughout the United States and Canada.

Now being published in Twelve Parts, price 25 cents each, the **PRACTICAL MODEL CALCULATOR**, for the Engineer, Machinist, Manufacturer of Engine work, Naval Architect, Miner and Millwright. By Oliver Byrne, Compiler and Editor of the Dictionary of Machines, Mechanics, Engine Work and Engineering, and Author of various Mathematical and Mechanical works—illustrated by numerous Engravings; forming, when completed, one large volume, octavo, of nearly 600 pages.

It will contain such calculations as are met with and required in the Mechanical Arts, and establish models or standards to guide practical men. The tables that are introduced, many of which are new, will greatly economize labor, and render the everyday calculations of the *practical man* comprehensive and easy. From every single calculation given in this work other calculations are readily modeled, so that each may be considered the head of a numerous family of practical results.

The examples selected will be found appropriate, and in all cases taken from the actual practice of the present time. Every rule has been tested by the unerring results of mathematical research, and confirmed by experiment, when such was necessary.

The Practical Model Calculator, will be found to fill a vacancy in the library of the practical working man long considered a requirement. It will be found to excel all other works of a similar nature, from the great extent of its range, the exemplary nature of its well selected examples, and from the easy, simple and systematic manner in which the model calculations are established.

Parts 1, 2 and 3 now ready.

American Miller and Millwright's Assistant, By W. C. Hughes. 12mo., illustrated.....	\$1 00
Byrne's Practical Model Calculator. In 12 parts, each.....	25
Byrne's Treatise on the American Steam Engine. 8vo. [in press].....	5 00
Booth's Encyclopedia of Chemistry. In one vol. royal 8vo, 974 pages, sheep.....	5 00
Builders' Companion. By A. C. Smeaton.—Seventy illustrations, 12mo., cloth.....	1 00
Cotton Spinner and Manufacturers' Companion. By Scott and Byrne. In one vol. 8vo., cloth, with large working drawings.....	3 50
Cabinet Maker and Upholsterer's Companion. 12mo., cloth.....	75
Dyer and Color Maker's Companion. 12mo., cloth.....	75
Elwood's Grain Tables. A new edition, in one vol. 12mo., cloth.....	1 00
Encyclopedia of Useful Knowledge. 8vo., illustrated.....	5 00
Fisher's Photogenic Manipulation. 16mo., cloth.....	62
Gregory's Mathematics for Practical Men. Illustrated, 8vo., cloth.....	1 50
Household Surgery, or Hints on Emergencies. By J. F. South, M.D. 12mo., cloth.....	1 25
Leslie's Complete Cookery. 41st edition, 12 mo., sheep.....	1 00
McCut's Perfumery: its Use and Manufacture. 12mo., cloth.....	1 00
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Best Cast Steel Axles & Tires,

(A NEW ARTICLE.)

For Railroad Carriages and Locomotives.

THE quality of this Steel is sufficiently attested in the announcement that it has carried off the first prizes awarded at the World's competition of 1851, in London. The axles are in general use on the Continent, and are now offered in competition with any other that can be produced; and to be tested in any way that may be desired by the Engineers of the United States, either by impact or by torsion. This Steel is manufactured by Fried Krupp, Esq., of Essen, in Renish Prussia, represented in the United States by

THOS. PROSSER & SON,
28 Platt st., New York.

November 1.

To Railroad and Canal Companies, Contractors, etc.

THE undersigned wishes to direct the attention of Chief Engineers and Contractors to the facilities he possesses for supplying them with workmen, laborers, etc. of any description, and also to remind them that he forwards such men to whatever destination they may be required.

Companies or Contractors desirous of receiving peaceable and Industrious men, will be promptly supplied at the shortest possible notice.

C. B. RICHARDS,
No. 85 Greenwich Street, New York.

REFERENCES:—Chas. H. Webb, Esq., Supt. of the St. George's and British Protective Society, New York; Messrs. Harris and Leech, Philadelphia, Wm. P. Malburn, Esq., Albany.

To Stone Masons.

THE NEW ALBANY and SALEM RAILROAD Company have about 10,000 c. yards of Abutment Masonry to let at private contract, to be completed by the 1st of July, 1852.

To contractors who can produce testimonials of character for ability as STONE MASONS, fair, remunerating prices will be given.

Early applicants, by securing the work now offered, will gain advantages over competitors for the erection of an additional 15,000 yards, to be let out early next spring, in bridging the streams between Bedford and Michigan City, via Bloomington, Gosport, Crawfordsville and Lafayette, (the most productive and healthy region in Indiana,) by the knowledge they will have acquired of the resources of the country.

Application may be made in person, or by letter addressed to the undersigned, at New Albany, Indiana.

S. B. WILSON, Engineer.
Engineer's Office, New Albany,
Sept. 29th, 1851.

Engine Waste.

CLEAN WASTE for Locomotive and Steamboat Engines, in lots as wanted; also, superior Steam Packing. Orders, with explicit directions for forwarding, should be addressed to

J. MORTIMER HALL,
36 South st., New York.

November 1. 3m

Notice to Contractors.

SEALED proposals will be received at the office of the company in Galesburg, on Wednesday, the 24th day of December next, for the grading, bridging and masonry of the Central Military Track road. The road will be nearly fifty miles in length, and embraces a variety of work well worth the attention of contractors.

Proposals will also be received at the same time and place, for the Cross Ties, to be delivered at different points on the line.

Contractors will be expected to state in their bids the amount of the stock of the company they will be willing to take for work done; and preference will be given to those bidders who will take the greatest amount of stock.

Plans, profiles, specifications, etc. will be exhibited ten days previous to the day of letting, and all the necessary information with regard to the manner of its construction, etc., furnished by the engineer of the Board.

By order of the Board of Directors.
WM. McMURTRY, President.
GEO. G. LANPHERE, Secretary.

To Railroad Companies, etc.



The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

I also invite attention to an improved PATENT SPRING LOCK, for SLIDING Doors to Freight and Baggage Cars, now in use upon the Pennsylvania Central, Greensville and Columbia, S.C., Reading, Pa., and other Railroads.

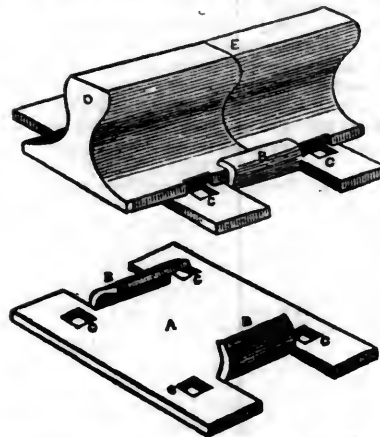
Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH,

46 South 8th St. Philadelphia.

May 9, 1851.

The American Railroad Chair Manufacturing Co.



ARE prepared to make WROUGHT IRON RAIL ROAD CHAIRS, of various sizes, at short notice.

By use of the WROUGHT IRON CHAIR, the necessity of the wedge is entirely done away—the lips of the chair being set, by means of a sledge or hammer, close and firmly to the flange of the rail.

The less thickness of metal necessary in the Wrought Iron Chair gives much greater power and force to the spikes when driven—and consequently a much less liability to the spreading of the rails by reason of the spikes drawing or becoming bent.

The less weight necessary in the Wrought Iron Chair, will enable us to furnish them at a cost much below that of CAST IRON CHAIRS.

DESCRIPTION OF THE ABOVE CUTS.

Figure 1 is a perspective view of the rail secured in the chair, and fig. 2 is a perspective view of the chair itself. D, E, are sections of two rails placed together, and secured at the joint on the chair by the jaws B, B. The chair is bolted down by spikes C, C. In fig. 2, the chair is represented as made of a single block or plate A of wrought iron.

The chair is set in its proper place on the track, spiked down, and the ends of the two rails brought together within the jaws as represented in fig. 1.

For further information address,

N. C. TROWBRIDGE, Secretary,
Poughkeepsie, N. Y.

June 1, 1851.

Railroad Commission Agency.

THE Subscriber offers his services to Railroad Co's and Car Makers for the purchase of equipment and furniture of roads and depots and all articles and materials required in the construction of cars, with cash or approved credit. No effort will be spared to select the best articles at the lowest market price.

He is sole Agent for the manufacture of the ENAMELED CAR LININGS, now in universal use. The best Artists are employed in designing new styles, and he will make to order pieces with appropriate designs for every part of the car, in all colors, or with silver grounds and bronzed or velvet figures.

He is also Agent for Page's Car Window Sash Fasteners, which is preferred by all who have used it to any other.

CHARLES STODDER,
75 Kilby st., Boston.

June 20, 1851.

3m.

AMERICAN RAILROAD JOURNAL.

STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 136 NASSAU ST., NEW YORK, AT FIVE DOLLARS PER ANNUM IN ADVANCE.

SECOND QUARTO SERIES, VOL. VII, No. 52] SATURDAY, DECEMBER 27, 1851 [WHOLE No. 819, VOL. XXIV.

PUBLISHED BY J. H. SCHULTZ & Co., 136 NASSAU ST.

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American Railroad Journal.

Saturday, December 27, 1851.

The Panama Railroad.

In looking over the newspapers published in the United States, which occasionally find their way out to this Isthmus of Panama, where, as you know, Mr. Editor, I have been residing for about one year past, any one familiar with the topography and the peculiarities of this region and of the line of railroad which has been located here, cannot fail to be impressed by the display of partial or imperfect knowledge, by the entire ignorance or misconception of almost all the important facts connected with this enterprise, whenever it is referred to or mentioned in the papers.

Believing it to be an act of justice—not less to the public, than to the officers and others in the service of the Panama railroad company, who have had the superintendence and direction of the work, that the error should be corrected and the truth made known to the public, of the condition and present state of this great undertaking—and of some of the obstacles which have had to be surmounted in the prosecution of the work thus far, I propose to give you a brief and summary account of it.

The Panama railroad commences on the Atlantic side of the Isthmus of Panama, at the company's station or settlement called *Navy Bay*, on the northwest part of the Island of *Manzanilla*, a small island of one and one-fourth, by one mile in extent, which lies in the mouth of Navy Bay, (the *Bahia de Limon* of the old geographers,) at the distance of about ten miles, by water, eastward from Chagres, at the mouth of the Rio Chagres. The general direction of the railroad is in a southwestwardly course, forty-six miles, to Panama on the Pacific. At about twenty-four miles from Navy Bay, it crosses the Rio Chagres, a few miles below Gorgona, at Barbaçoas. All that portion of the road which is between the station at Navy Bay, and the crossing of the Chagres river, is in the process of being constructed; and a part of it is completed so that locomotives, and trains of cars run over it. And the whole of these twenty-four miles, which is pronounced by engineers the most difficult part of the whole railroad, to construct, will probably be ready to admit the transit of the locomotive with trains of cars over it, the latter part of the winter, or early next spring.

The settlement on Manzanilla Island, where the railroad commences, is on the north side of Manzanilla Harbor, which sets up, eastward, with the Island, from Navy Bay. This harbor is safe and secure in all winds; and the depth of water is such that the largest vessels, and ocean steamships, can approach and lie at the piers and wharves which have already been built by the company. And the rise of the tide here is from eighteen inches to two feet only. Commencing here, the railroad passes across a portion of Manzanilla Harbor, then over the southern portion of the Island, then across an arm of the sea, or rather of Navy Bay, of two or three hundred yards in width, and which separates Manzanilla Island from the main land, then over the main land, seven and a half miles, to Gatun, where it first reaches the Chagres river, in which course it twice crosses the Mendi river, a sluggish and tortuous stream, which, during the *wet season*, flows into the southern part, or the head, of Navy Bay, but which, in the *dry season*, is a nearly stagnant pool, separated from Navy Bay, by a sand-bar several rods in extent, which forms at its mouth. In all these crossings—over Manzanilla Harbor—the arm of the Bay between the Island and the mainland, and the river Mendi, the railroad rests upon piles. But the interspaces between

these piles are to be filled in with crib work, in which stone and earth are to be deposited, thus constituting a foundation for the rails, permanent, indestructible, and secure from the attack of worms and aquatic insects.

This seven and a half miles of railroad, between Navy Bay station, and Gatun, upon the Chagres river, was first opened for the locomotive and trains of cars, October 27th. On that day, a small party of gentlemen, among whom was the energetic President of the Panama railroad company, JOHN L. STEPHENS, Esq., made the first *through trip* from Navy Bay to Gatun, in the cars with the locomotive. And I enjoyed the gratification of being one of that party.

The capabilities of the road were fairly proved by this trip; and they have been confirmed during the six weeks since that time, by the almost daily passage of the locomotive and cars, some of them trains of nine or more burden cars freighted with heavy loads of piles to be used in the construction of the railroad at points further up the line. No accident or failure has yet occurred in the transit of the locomotive and the cars over this portion of the road.

Until I had passed over this section of the road, no descriptions which I had ever heard of the obstacles to be overcome in the construction of it, had given me anything like an adequate idea of their magnitude; and I cannot therefore expect to so depict them that your readers shall readily appreciate them. Yet, for your and for their information, I will state a few facts. Of the whole seven and one-half miles of railroad between Navy Bay and Gatun, more than six miles is laid upon piles or upon crib work, at a height of from two, to ten, twelve or more, feet above the surface of the soil; and most of the country over which this part of the road passes is a soil of marsh and swamp. And this swampy soil is of so loose and spongy a texture, that a man, in walking over it, in many parts sinks up to his middle; and the laborers, when attempting to lift trees or logs lying upon it, not unfrequently find that, instead of lifting the timber, they are but submerging themselves in the soil; and the depth of these bogs in some places is great; and, when this railroad was first commenced, scarcely one year ago, the whole surface of the country was covered densely with a thick tropical vegetation of heavy trees, tangled vines and shrubbery, rendering it absolutely impossible to pass

over more than two or three miles a day, even on foot, as the undergrowth had to be cut away before the explorer could proceed a single step. The *machetta* of the nation was kept in untiring exercise to hew a path through the thorny and tangled thicket of shrubbery in which the explorer might pass; and this dense, tropical foliage upon the dead level of a marsh for miles in extent, equally intercepted the view of the surveyor in endeavoring to sight the bearings, and obtain the distances by his compass and other instruments. Till the *machetta* had felled the thick small growth, nothing could be seen before him, by the engineer to the length of his rodman's staff. Yet this was only a difficulty attending the first superficial reconnaissance. After the courses and directions in which the road was to run, had been determined approximately, the trees and the undergrowth were to be cleared from the soil through these bottomless swamps, which shut out from the direct action of the air and sunlight, had, for countless centuries, been reeking in the pestilent miasmatic effluvia arising from the accumulated masses of decaying animal and vegetable material in which inter-tropical regions are so rich. After the courses and general direction of the road had been determined, the hard and difficult part of the work may be said to have just commenced.

The soil was to be cleared from its growth, and to receive a superstructure to support the rails; and large gangs of men were put upon the work at various points along the line, not only from Navy Bay to Gatun, but to Barbaçoas, where the railroad crosses the Rio Chagres, near San Pablo, and a few miles below Gorgona. In fact, bodies of men were put upon the work at almost every point along this line, where the course of the railroad approached sufficiently near the Chagres river to allow this channel of conveyance to be made available for transporting men, provisions and stores, and materials and tools for constructing the road. It must ever be kept in mind, that, in this region, there are no roads—not even a bridle-path; and the only channels of communication are the rivers and streams of water. Neither are there any mechanic's shops at which a spike can be made, a chain mended, a pick axe sharpened, or a handle put to a spade or shovel, or a wheel-barrow repaired.—For doing all these things, the company have been obliged to bring out mechanics and artisans, together with their working tools; and then to construct shops for them in which to labor.

Even in the matter of provisions, this country furnishes little. Most of the beef, pork, and poultry, (except that which is salted, and brought from the United States,) most of the yams and plantains which are consumed by the employees of the company here, are brought from Carthagena, nearly three hundred miles off, or from other places equally distant.

It will thus be seen that the company have been obliged—not merely to build their railroad, extending over vast swamps and morasses where the axe and the shovel of the laborer of civilized lands had never before resounded—but to civilize the country, as it were, to clear off its forests of gigantic trees, to construct roads or to devise modes of communication, add facilities for transportation through pathless woods, and over almost bottomless morasses, covered, thickly, with a rank, tropical vegetation, to introduce and furnish with implements, and to employ, not merely men to perform these labors, but artisans to supply them with tools; to erect buildings and spread tents in which all

these men were to eat and lodge; and to put up hospitals and appoint medical men to take the professional charge of all in the service of the company upon this Isthmus, when suffering from sickness and from injuries.

This has been a part of the work of the company which required to be performed prior to putting forth much labor in the construction of the railroad.

When all this is taken duly into consideration, I think that it will be a subject of admiration and of praise, that so much has been accomplished in one brief year, rather than one of disappointment and reproach, that no more has been effected.

The Company's station at Gatun, is nearly opposite the native village of that name; and it is less than half a mile below the mouth of the Yatun river where it flows into the Chagres. This station is upon the east side of the Rio Chagres;—and the company's buildings are erected upon some irregular hills and plateaus of land which rise in the distance of half a mile back from the river, to a height of nearly two hundred feet above its waters.

The soil of these plateaus and hills is a rich, tenacious clayey loam of a reddish brown color, and entirely free from stones. And, between Gatun and Navy Bay, at Monkey Hill, and at one or two other places on the line of the road, are hills and plateaus constituted of a similar soil. This soil from its compactness, its adhesiveness, and its almost impermeability to water, is an admirable material for filling in and making the bed of the railroad where it rests, now, upon piles and crib-work; for, where once deposited in place, it almost immediately becomes solid and compact; and the copious rains of the rainy season have little or no effect upon it, in displacing or washing it away.—And a very large number of dirt-cars drawn by locomotives, and manned by gangs of laborers, are now constantly occupied in transporting this earth along the line of the railroad, and depositing it wherever the rails rest upon piles or crib-work;—thus forming a desirable underlaying, and indestructible foundation for the railroad in all coming times.

The number of men who have been employed, in all capacities, in the service of the company upon this Isthmus during the past season, has, most of the time, amounted to about one thousand.—Most of these men are engaged for periods of from three, to six months. And many of these men do not serve out their full time,—but return to the United States upon perhaps the first attack of sickness.

The principal disease of this country is the *intermittent fever*,—or *fever and ague*, as it is popularly termed in the United States. This sometimes assumes the form of *remittent fevers*;—and it is not unfrequently accompanied or followed by diarrhoea and dysentery, or by some affection of the liver, more or less severe. Yet I think the *fever* of this country is far less frequently complicated with other affections,—and far more readily yields to the remedies employed, than the same kind of *fevers*,—(*fever and ague*), in the Southern, and Western, and even in some of the Middle United States.

I have resided constantly, at the Yatun station of the company since the first of last May,—and the average number of men employed here, has been from two to three hundred;—probably nearer the latter than the former number. And, since the last of July, now more than four and one fourth months, only two deaths have occurred at this station. And

this has been considered the most unhealthy of all the company's stations.

Almost every person coming to this region from the United States, and residing here a few weeks, is called upon to pay the first instalment of his naturalization fee, in the shape of an attack of fever and ague, from the second, to the sixth or eighth week of his residence here.

It is at present impossible to make any calculations which may be relied upon, of the length of time that must elapse before the completion of the railroad so that locomotives with trains of cars will be able to run through the whole route, from Navy Bay to Panama. There are so many contingencies, depending on the health of the laborers, the length, and the severity or lightness of the next wet season, and various other circumstances,—that it would be rashness to venture a definite and positive opinion upon the subject.

But, when it is taken into consideration that a great part of more than one half of the whole extent of the railroad,—and that the worst portion of it will probably be in a condition, within the next three or four months, to allow of the transit of locomotives and cars over it;—it may probably be safe to assert, that, if the same number of men are kept employed, and if the work is prosecuted with the energy which has thus far been expended upon it,—in about two years from the present time, it will be completed so far as to be passable for locomotives and trains of cars, from Navy Bay to Panama.

From the crossing of the Rio Chagres at Barbaçoas, to Panama, the general aspect of the country is essentially different from what it is on the Atlantic side. More labor will be required in excavating and cutting, than on the part now so nearly constructed;—but there will be none of the bottomless swamps and bogs to be built upon; and, of course, very little piling or crib-work, and filling in to be done. And, beyond the Rio Chagres, and especially in approaching Panama, there will be more points accessible along the course of the railroad, from roads, in that part of the Isthmus, than there have been on this side.

And the experience which has been acquired during the year past, in relation to the preservation of health, and the best means for expending labor, and carrying on this great work, in a tropical climate, and in regions almost entirely wild and uncultivated,—though acquired, sometimes, at a heavy cost,—is yet of inestimable value;—and it will, doubtless be made available by the officers and agents of the company, in employing labor more efficiently than during the past year,—as well as in retrenching many expenditures, which, could the future have been seen as closely as the past can be surveyed,—would never have been made.

Gatun Station, Isthmus of }
Panama, December 8, 1851. }

T. C. B.

Illinois.

Peoria and Oquawka Railroad.—We understand that the contractors on the western division of the Peoria and Oquawka railroad, have made a favorable contract for the iron for 50 miles of the road, to be delivered at an early day. The importance of pushing on the work on this division, faster than the means now at the disposal of the directors will permit, is rendered more apparent. As soon as 18 miles of the Chicago and Galena road was in operation, the stock of that company advanced very considerably above par, and was very difficult to be procured at any price. It requires but very little reflection to convince any mind that the stock of the Peoria and Oquawka railroad must be among the best investments in the country. The vast re-

sources of the country, coupled with the cheap construction of the road, places this matter beyond the reach of doubt.—*Peoria Press*.

Tennessee.

Nashville, October 2, 1851.

J. D. B. DeBow, Esq.,

Sir—You request my opinion as to the plan of improvement best to be adopted by the State and people of Tennessee.

Controlled, as this must be, by the shape of the State, and directions of the mountains and rivers, and the manner in which the improvements of adjoining States approach us, there is but one general system to be adopted, and fortunately, I think, public attention has been directed to it, which is to start at the terminus of the Lynchburg and Tennessee railroad, on the Virginia line, and pass down the Tennessee river, (for you can go no other way to or near Knoxville) and on down Calhoun or Cleveland, and there with a southern branch meet directly the Georgia improvements.—From the point of divergence at Calhoun or Cleveland proceed directly to Chattanooga, there to meet the Nashville and Chattanooga road, and probably the Selma and Tennessee road from Alabama.

Thence to Nashville, by the Nashville and Chattanooga road, or on or near the route recently examined and reported upon by Mr. Hazlehurst, Civil Engineer, to the Mississippi river, at or near the upper part of Madrid Bend, bordering upon the Kentucky line. This route would be nearly 600 miles long, from one extreme to the other of our State.

I think it is the most important for the State at large, as it connects directly all divisions, and will obliterate all sectional feelings.

The road will run in a proper direction also to meet, and transport the products of the valleys of the Upper Mississippi, Missouri, and their tributaries, to the Atlantic, by the shortest route that can be made to Charleston or Savannah, cheaper than any other connecting the Mississippi and Atlantic, as it will be the shortest and much the most economical of construction. The trunk line will be composed of the following roads:

	Miles.
The East Tennessee and Virginia road, from Knoxville to the line.....	130
The part of the East Tennessee and Georgia road lying between Cleveland or Calhoun and Knoxville.....	80
Chattanooga and Cleveland, or Calhoun, say.....	40
Nashville and Chattanooga railroad.....	151
Nashville and Mississippi railroad.....	170

Making whole length from Mississippi river to Virginia..... 571

The next most important line of improvements for our State, is the one from Louisville, Kentucky, crossing into Tennessee, in a direction to Nashville, as now contemplated, by Louisville, and passing southwestwardly to the big bend of the Tennessee river, at or near Hamburg, where it will at no distant day be met by the Mobile and Ohio road, and the New Orleans and Jackson road, and from thence, on or within the State to Memphis.—This route will connect the extremes of latitude; and reap a rich reward from carrying the products in exchange from south to north, and north to south, as well as the travel each way. Cincinnati, Ohio, is also reaching out, and will connect finally with this line, in Tennessee, probably in Sumner county. The means are already provided to come from Cincinnati by Lexington to Danville, Kentucky.

	Miles.
Length of this line from Kentucky line to Nashville.....	45
Nashville to Tennessee river, at or near Hamburg.....	125
From Hamburg to Memphis.....	125

Making the total length from Kentucky line to Memphis..... 295

The third and next most important road for the State, is the Mobile and Ohio road, passing from the point at or near Hamburg across West Tennessee by Jackson, and in a direction towards Cairo, at the mouth of the Ohio, and this line will

pass centrally through West Tennessee, and accommodate all the counties not convenient to the Tennessee and Mississippi rivers.

Length of the line across the State.....	135 Miles.
Add the lines from Key line to Memphis.....	295 "
Virginia line to Madrid Bend.....	571 "

1001

Of these lines of improvement the following parts, it is thought, the means for the construction are provided:

Nashville and Chattanooga railroad.....	151
East Tennessee and Georgia between Calhoun and the place of crossing Tennessee river.....	40
	191 Miles.

Leaving to provide for, wholly or in part..... 810 Miles.

This will make up, when completed, a most complete and comprehensive system of improvement, on which all short roads can concentrate and make a perfect network. These artery lines it is expected the State will aid, by loaning her bonds to such companies as have finished sections of 10 or 20 miles, as may be required, to an extent sufficient to buy and lay down the iron and build the depots and station houses, and equip the road, when the grading, bridging and tenders have been prepared ready for the iron. The State to take a clear mortgage to cover her outlay of say \$8,000 per mile, which completes the road for full service.

The State, of course, would require the road so prepared to be accessible to some other road or to some navigable water course, and to be a part of this great system. 810 miles of road at \$8,000 per mile, make \$6,480,000, most of which would not be called for very soon, as it could only be demanded as the work was finished, the people's money having to go at the bottom.

There are other railroads building and starting, that do not come within this system. One done, or at least that part of the East Tennessee and Georgia railroad lying below Calhoun, which is finished..... 40 miles in length.

The Winchester and Huntsville railroad is now being located, with means to build it provided..... 28 miles long.

The McMinneville Branch road, partly provided for.... 30 miles.

And the Shelbyville Branch nearly done, and means to finish it..... 8 miles.

Making in all..... 106 miles

of branch roads or roads outside of these trunk lines, and 68 miles of them growing directly out of the Nashville and Chattanooga road.

Your obedient servant,

V. K. STEPHENSON.

—[De Bow's Review.]

Ohio.

Eaton Railway.—At a meeting of the Board of Directors of the Eaton and Hamilton railroad company, on Friday last, John Woods, of Hamilton, was elected President of the Board. We believe this selection gives universal satisfaction. The eminent abilities and energy of Mr. Woods will give increased popularity to the company, and ensure an early completion of its important enterprises.

We learn that the company have received advices of further shipments of iron. Negotiations are also pending for a supply of iron for the Piqua extension. While operations on our road are progressing with commendable promptness, the extension towards Chicago is also in a fair state of progress. The line to New Castle will be ready for the iron perhaps before our road is running, and nearly all the way to Logansport is under contract and constructing. And a line has recently been surveyed from the latter place to Lafayette. Our boys must stir themselves, or our Hoosier neighbors will be asking an outlet through our road before we are ready for them.—*Eaton Register*, 11th.

American Maritime Commerce.

Statement exhibiting a condensed view of the Tonnage of the several districts of the United States, on the 30th of June, 1851.

	Registered tonnage.	Enrolled & licensed tonnage.	Total tonnage.
Maine.....	258,381-02	277,934-07	536,315-09
N. Hamp.....	17,850-17	7,577-37	25,427-54
Vermont.....		3,932-31	3,932-31
Mass.....	5,501,377-35	191,124-81	5,692,502-16
R. I.....	24,197-42	13,852-90	38,050-32
Conn.....	41,805-89	74,373-86	116,179-75
N. Y.....	518,575-87	532,438-40	1,051,014-27
N. Jersey.....	377-80	88,518-00	88,895-80
Penn.....	67,425-42	214,948-17	284,373-59
Delaware.....	603-23	11,217-63	11,880-86
Maryland.....	95,676-23	108,868-11	204,544-34
Columbia.....	2,902-84	20,000-57	22,903-41
Virginia.....	16,327-56	52,861-46	69,189-02
N. Carolina.....	12,799-27	30,978-25	43,777-52
S. Carolina.....	17,211-24	17,976-12	35,187-36
Georgia.....	12,363-56	11,821-67	24,185-23
Florida.....	3,754-27	5,610-36	9,364-63
Alabama.....	8,579-36	18,747-60	27,326-96
Mississippi.....		1,404-69	1,404-69
Louisiana.....	81,159-32	172,125-56	253,284-88
Missouri.....		34,065-46	35,065-46
Illinois.....		23,103-45	23,103-45
Kentucky.....		12,937-90	12,937-90
Tennessee.....		3,587-67	3,587-67
Ohio.....		58,352-19	58,352-19
Michigan.....		41,774-86	41,774-86
Texas.....	397-89	4,515-23	4,913-12
California.....	38,496-39	20,029-58	58,525-97
Oregon.....	1,063-43		1,063-43
Wisconsin.....		2,946-10	2,946-10
Total.....	1,726,307-23	2,046,132-20	3,772,439-43

Vermont

Connecticut and Passumpsic River Railroad.

The directors have issued a circular to their stockholders, giving the present condition of affairs, and presenting to consideration a plan for the immediate liquidation of the small floating debt of the corporation. The directors say that the time has come for closing the "construction account." In other words, the road is finished—track, equipment and depots. The whole cost of the 60½ miles is \$1,745,519 15, provided for by stock, 10,946 shares, amounting to \$1,094,000, and by mortgage bonds \$550,000; total \$1,644,000. The floating debt, therefore, is but about \$100,000, or in exact figures \$100,919 15. More than one-half of this amount has grown out of the purchase of extra equipment beyond the quantity originally contemplated, and as the entire cost of road and equipment, including \$42,000 of interest paid to stockholders, is but \$29,000 per mile, it is obvious that no extravagance has occurred. The Passumpsic is well built and fully equipped, and is not only one of the cheapest roads in the country, but it has a thriving and increasing business, and when the floating debt is funded, its financial affairs will be in an unexceptionable condition. It is proposed to create \$250,000 of second mortgage bonds, payable in eight years, with interest at 6 per cent per annum, and to offer \$220,000 of these to the stockholders *pro rata*. The payment is to be one-half in cash and one-half in the stock of the corporation *at par*. The company will thus receive \$110,000 in cash, and have on hand \$30,000 of the second mortgage bonds for future contingencies.

The plan is a capital one. Its fulfilment will enable the stockholders to realize fair and regular dividends. The new bonds also being payable partly in stock, and being mortgage bonds, will be a cheap and most desirable investment. With the market price of the stock at 60, a bond of \$2,000, paying \$120,000 per annum will cost but \$1,600, and the purchaser will thus receive nearly 8 per cent upon his outlay, in addition to obtaining \$400 at the maturity of the bond. At the same time his old stock will be rendered much more valuable.—The business of the Passumpsic for the last six months shows a handsome increase. The gross income was \$86,000, but in view of the damage incurred by the recent accident (\$10,000,) and the importance of increasing the contingent fund prior to closing the construction account, the directors

have concluded to pass the January dividend. They commence the year, therefore, with a fund of about \$30,000, and if the stockholders concur in the plan proposed, the condition of the financial matters will be—

Stock.....	\$981,600
1st mortgage bonds.....	550,000
2d ".....	250,000

Total.....\$1,784,600

With the above cash fund and \$30,000 of the mortgage bonds in crib, and no floating debt. The directors state that in no instance has the Passumpsic corporation ever paid more than six per cent on loans obtained. The meeting of the stockholders is to take place at St. Johnsbury, January 24, 1852. As the proportion of bonds allowed to each stockholder is but one-fifth of the present stock, it is to be hoped that all will come forward manfully, and thus put another of our New England roads, "out of debt and out of danger!"—*Boston Cour.*

Georgia.

Central Railroad and Banking Company.

REPORT OF THE DIRECTORS TO THE STOCKHOLDERS.

The report of the General Superintendent of Transportation is herewith submitted. It exhibits to you in a clear and distinct form, the operations of the road for the year ending the 1st inst. From an examination of it, you will see that while the revenue of the road has been increased, the expenditure has been lessened. While for the year 1850 the sum of \$362,589 69 was expended out of a gross revenue of \$688,245 41, for the year ending 1st instant only \$341,410 14 have been expended on a gross receipt of \$748,207 86. The improved condition of the road and its equipment promises like good results for the future.

The cash receipts for the year have been:

From earnings prior to 1st December, 1850.....	\$53,686 33
From earnings since do.....	683,740 25

	737,426 58
From earnings of bank.....	40,938 93
	778,365 51

The expenditures have been:

For road.....	\$341,410 14
For bank expenses.....	18,107 19
For interest on bonds.....	24,388 37
Protest account.....	39 07
	383,944 77

	394,420 74
And dividends of 8 per cent, on the general stock, and dividends on the guaranteed stock, have been paid.....	250,116 00

Leaving as an addition to reserve fund.....144,304 74

The reserve fund has been charged with the defalcation of the late cashier, and it stands at this day at the sum of \$160,837 57.

The sum paid into bank from earnings for the year ending 1st inst., is.....\$683,470 25

The sum uncollected is.....64,467 61

Of the sum of \$55,032 98 remaining uncollected at the end of 1850, as per last report, there has been paid into bank the sum of \$53,686 33, leaving unpaid only the sum of \$1,396 65, which sum of \$1,396 65 is covered by deductions, losses and fines—thus showing the collection of a gross revenue of \$688,245 41 with very trifling abatement or loss.

The financial condition of the company is shown in the accompanying statement, marked A. The only prospective liabilities of the company amount to \$195,000, viz:

Voted by stockholders for Augusta and Waynesboro' road.....	\$95,000
Do. for Southwestern branch, (Fort Valley to Columbus).....	100,000

\$195,000

and this sum is to be met by the company's bonds, payable 5 and 10 years hence.

It is the settled policy of the board to make no further subscriptions for roads, and to incur no fur-

ther responsibility whatever, without the direction of the stockholders in convention.

The company holds \$20,000 of stock of the Milledgeville and Gordon railroad, paid for by the old iron taken up from our road. And iron will be furnished in the same way to the Eatonton road. The whole line from Gordon to Eatonton, 38 miles, will be opened within 12 months from this day, and it proves a very considerable addition to the business of our road, while at the same time it is expected to pay seven per centum on our investment in it.

This company now works the Milledgeville and Gordon railroad on that company's account, and it works also the Augusta and Waynesboro' road. It has agreed to work the latter road, paying to the Augusta and Waynesboro' company 6 per cent per annum on the value of the road as it progresses, and 7 per cent after it is finished. The last named line will, it is hoped, be opened through to Augusta by the close of the year 1852, and will be productive of great benefit to our road and city.

The Southwestern railroad was opened from Macon to Oglethorpe in July last, and the company is doing a large and profitable business. The travel and traffic on this road exceed our most sanguine expectations.

Bills are now pending in the General Assembly, to incorporate the 21 miles of road west of Fort Valley into the Southwestern company, and to allow this company to work other railroads.

Application has been made by the citizens of southwestern Georgia to the Legislature for a subscription of \$300,000, on condition of a like subscription by individuals, for the purpose of extending the Southwestern railroad in a general direction towards Fort Gaines. There is great reason to believe that the State will grant this most reasonable request. The completion of this road to the Chattahoochee will insure the speedy construction of a railroad from that river to Pensacola.—Of the immense importance of a railroad line from Savannah to Pensacola, it is here needless to speak.

It is expected that the line from Fort Valley to Columbus, 71 miles, will be finished by the end of the year 1852, giving a continuous communication to the latter city and uniting the head waters of Gulf navigation with the Atlantic. Two routes beyond this are in agitation, which in the absence of a railroad to Pensacola will place our line in closer connection with the Gulf than any other.—One is from Girard (opposite Columbus) to Blakeley or Mobile, on which it is said that work has already commenced. The other is from Girard to Opelika on the West Point and Montgomery railroad. This would be only a distance of 30 miles, and is contemplated by the company owning the last named road. It would add considerably to the business of our line, as affording a direct communication with the centre of Alabama and the head of navigation on the Alabama river—and making ours the nearest and most accessible outlet for that region on the Atlantic, toward the north and Europe. All this seems likely to be brought about without any help from this company.

It is, therefore, manifest to you that after the lapse of one or two years, at furthest, the receipts of our road will be greatly augmented from its through business, and the large increase of our way business in travel and freight within the past term of two years, gives high promise for the future.

The board expects to show by the end of next year, a finished depot at Savannah, fit for the future business of the company, and proper accommodations at the junction in Macon. This connection is now complete and in daily operation.—We have therefore arrived at the epoch, in the history of the general railroad system of Georgia, when a car started from any point can be carried over every mile of rails in the State, and as far also as the town of Athens, in East Tennessee, and before the end of two years, our way will be opened to Knoxville and Nashville. When the line shall be extended from Nashville to the vicinity of the junction of the Ohio and Mississippi rivers, and when our connection with the Gulf of Mexico and the city of Augusta shall be made, Savannah will rival any other city on the Southern Atlantic sea board, and be most adequately compensated for all our expenditures.

The President and directors of the company take

occasion to express the high gratification which they, in common with the corporate authorities and citizens of Savannah, have experienced from the late visit of the Chief Magistrate, the members and officers of the General Assembly and State, to this city. The board was proud of the opportunity to contribute the means of speedy and comfortable passage for the city's guests, from the seat of government, and on their return.

The chosen representatives of a free people, themselves citizens, for the greater part engaged in agriculture, cordially accepted the hospitable invitation of the men of this section, who chiefly follow "the busy hum of commerce." Inhabitants of the fruitful valleys and lofty tops of the mountain country, where nature, with alternate smiles and frowns, or woos or drives man to acknowledge the goodness of an all-wise Creator, have joined the hand of friendship with "the men who go down to the sea in ships, and occupy their business in great waters," and who see the wonders of the mighty deep, in whose swelling bosom there is ever the same impelling power towards the same great source of blessing. It was a delightful spectacle, worthy to be remembered, and leaving an impression, it is believed, more pure and lasting than the evanescent pleasures of mere social intercourse.

R. R. CUTLER, President.

STATEMENT OF RESOURCES AND PROPERTY.

Railroad and appurtenances.....	\$3,133,740 08
Notes and bills discounted and bills receivable.....	524,021 79
Due by other banks.....	61,140 89
Due by agents and other companies..	53,064 67
Stock in other companies.....	318,000 00
Banking houses and other real estate.	21,074 25
Specie and notes of other banks.....	139,621 98
	4,250,663 66

LIABILITIES.

Capital stock.....	\$3,266,400 00
Bonds due by the company.....	276,487 00
Bank notes in circulation.....	218,656 00
Suspense account.....	1,190 00
Due to other bank and companies....	92,254 12
Unclaimed dividends.....	18,692 90
	3 52
Individual deposits.....	85,739 05
Dividend declared this day.....	130,403 50
Balance being reserved fund.....	160,837 57
	4,250,663 66

ENGINEER'S REPORT.

Savannah, Ga., 4th Dec., 1851.

To R. R. Cutler, Esq., President:

Sir—I herewith submit to you my report, which exhibits the operations of the road for the fiscal year ending 30th November: also, such explanations as appear necessary to a full understanding of our business—the condition of the road, its appurtenances, and our probable wants for the ensuing year.

The total amount of earnings for the year has been.....\$748,207 86

The total amount of expenses for maintaining and working the road for the same period has been.....341,410 14

Leaving a net balance as profit of.....406,797 72

The increase of gross receipts over the previous year has been \$59,962 45.

The following table shows a comparison of the various branches of business for the year just closed, with the previous one:

	1850.	1851.	Increase.
Up thro' freight.....	204,947 89	247,134 16	42,186 27
Up way freight.....	55,160 75	78,265 20	23,104 45
Down thro' ".....	252,154 57	202,011 72	*50,142 85
Down way ".....	70,577 95	73,182 76	2,604 81
Up thro' passage.....	28,936 44	38,219 85	9,283 41
Up way passage.....	18,131 29	27,954 82	9,823 53
Down thro' ".....	22,225 34	31,398 55	9,173 21
Down way ".....	16,911 18	23,840 80	6,929 62
U. S. mail.....	19,200 00	26,200 00	7,000 00

Total earnings..688,245 41 748,207 86 110,105 30

* Decrease bro't down.....50,142 85

Total increase..59,962 42

	1850.	1851.
Bales cotton thro' way	136,050	111,433
" " "	39,981	39,433
Tot. bales cotton	176,031	150,866
The current expenses of the road during the year are exhibited under the appropriate heads as follows:		
Maintenance of way, etc.	\$92,230	83
" machinery and motive power	89,750	56
" cars	38,872	24
Transportation expenses	111,542	19
Incidental expenses	9,013	32

Total amount of expenses.....341,410 14

Our expenses, taken as a whole, show a gratifying result, compared with the receipts, and with the expenses of previous years, and I think we may promise ourselves as favorable a result the ensuing year.

In the cost of repairs of road, there has been a very large reduction. The supply of timber that we had on hand at the close of last year, and the small amount of repairs required on our bridges, have contributed to reduce this item of our expenses. These advantages we shall not have to the same extent the ensuing year, therefore must expect our expenses in this department to advance somewhat. The road and bridges are in good repair. I have never known either to be in better condition.

The road is now laid with a heavy U and T rail continuously from Savannah to station No. 10; and at other points there have been laid about two miles of the same rail—making in all about 102 miles of new heavy rail on the road—exclusive of that part of our road crossing the Ocmulgee river, which leaves about 88½ miles between No. 10 and Macon to be provided for. There are now 1,200 tons of T rail contracted for, to arrive early in '52. It is of the same weight and pattern of the 1,000 tons purchased last year, and will lay about 15 miles of track. This will give us an ample supply of the light T rail to replace defective bars.

I am yet of the opinion expressed in my last report, that ten miles of iron annually will be ample to replace the light T rail above No. 10. If I am right, then we shall require the ensuing year five miles of iron in addition to the 1,200 tons ordered. Whether that quantity or more is ordered, I would recommend it to be of the same pattern and weight as the two lots last purchased.

As was anticipated in my last report, we have been able to make a very handsome reduction in our expenses for motive power, even beyond my expectation. The machinery of the road and motive power I believe to be in as good condition as it was at the beginning of the year, and the amount of stock on hand about, it not quite, as large.—This reduction of expenses, to some extent, is due to the improved condition of the track.

Since my last report, we have purchased and put into service five freight locomotives, all of Mr. Baldwin's build. We have also two passenger engines engaged from the Messrs. Norris, Brothers, to arrive during this month.

In view of our being called upon to work the Milledgeville and Gordon, and the Augusta and Waynesboro' roads, and the increase of business which we may reasonably expect, I would recommend the purchase of four more engines, two for passenger, and two for freight service.

The total number of miles run by all the engines during the year has been 398,580 miles.

The cost of maintaining our cars appears to be more than last year. This, however, is fully accounted for by the increase of cars (30) added to our stock; which increase it has heretofore been customary to charge to capital, but this year has gone in with the current expenses for maintenance of cars. If their cost is deducted, this branch of our expenses would be rather under that of last year.

It was foreseen at an early day that we should not be able to build the passenger cars proposed in my last report. We therefore contracted for six to be built at the north—two from Messrs. Harlan & Hollingsworth, of Wilmington, Del., two from Messrs. Cummings & James, of Jersey City, and

two from Messrs. Tracy & Fales, of Hartford Connecticut.

The number and character of cars the company have at the present time, are as follows:

Eight wheel passenger cars	8
" " baggage	6
" " box freight	136
" " open	145
Four " gravel	20
	315

Contrary to my expectation, when I made my last report, our transportation expenses have been heavier than the previous year. This result has been produced by running two daily passenger trains for the last five months—an increased amt of business; also the transportation of large quantities of material for our own works, the expense of which has been borne by the transportation department.

The work of crossing the Ocmulgee river was commenced early in the spring, and completed so far as to enable us to form a connection with the Southwestern railroad on the first of October last. The Macon and Western road made their connection with us on the 3d inst. In order to accomplish this very desirable object at an early day, we have resorted to trestle work on each side and over the river, of such a character as to enable us to pass with trains, and at our leisure to complete the bridge, which is to be built on the plan known as Lattice work—the piers and abutments for which have been commenced and are in a state of forwardness. The plank for the lattice work is nearly all sawed, and the bridge will be put up without delay. There has been expended upon this work the sum of \$30,332 16. This includes the cost of grading near a half a mile of track, rendered necessary by a change of location, so as to get a curve of larger radius from our main track.

Our new Depot at Savannah was commenced in the early part of 1851, and has been carried on as rapidly as the nature of the work and our ability to procure labor and material would admit. There has been expended on it the sum of \$56,751 24.

The Milledgeville and Gordon road was opened to Midway for transportation of freight and passengers on the 29th of October, and is at present worked by us under an arrangement with that company. It is expected that this road will be completed to Milledgeville early in the spring.—When the Eatonton road shall have been completed, it is confidently expected that this line will become quite an important feeder to our road. From the short time that this road has been in operation, it is not thought expedient to make an exhibit of its earnings in this report.

The Augusta and Waynesboro' road was opened for transportation of freight and passengers to Station No. 1 on that road the 24th ultimo. There is a daily line of four-horse post coaches running from its terminus to Augusta, making a cheap, comfortable and expeditious route between Augusta and Savannah or Macon.

With these branches rapidly progressing towards completion, and with our connection at Macon with the South-Western and Macon and Western roads, I think we may fairly promise ourselves a very handsome increase of business for the ensuing year.

The above report is respectfully submitted.

WM. M. WADLEY, Superintendent.

Pennsylvania.

Sunbury and Erie Railroad.—A mass meeting of the citizens of the city and county of Philadelphia will be held in the saloon of the Chinese Museum, on Friday evening, January 2d, at 7 o'clock, to mature measures to secure the early commencement and completion of the Sunbury and Erie railroad—intended to connect Philadelphia with the lakes, and thus bring to our own city a share of the immense trade of that vast inland country, now almost entirely monopolized by our sister cities of New York and Boston.

The meeting will be addressed by the Hon. Geo. W. Woodward, of Luzerne county; Hon John H. Walker, of Erie; Hon. John W. Maynard, of Lycoming; Hon. Henry A. Muhlenberg, of Berks; Hon. Wm. M. Meredith, Hon. Job R. Tyson, and Judge Wm. D. Kelly, of Philadelphia, and several

other distinguished speakers from the interior of Pennsylvania.

Indiana Railroads--Indianapolis.

We give, from the best data before us, a statement on the subject of our railroads, that may be interesting. It may not be entirely correct, but will be found sufficiently so for practical purposes. We would have been pleased to give a statement showing the condition of the different roads, and their progress towards completion, but such an article in the most condensed form would be too lengthy for our present space; suffice it to say that our roads are generally being pushed forward by the companies that have them in charge, with energy, insuring in the course of the coming year a large addition to our completed tracks. We estimate that there are in the State of Indiana twenty chartered companies to construct railroads of the aggregate length of 1,440 miles; of these, nine roads of the aggregate length of 760 miles, centre at Indianapolis on the Union track. There are now completed and run with daily trains, about 420 miles, leaving yet to be finished about 1,020 miles. A glance at our map will satisfy any one, that our leading roads have been judiciously located, and the reports of our companies show the very light cost of construction of our roads as compared with those in the eastern States, not on the average more than one-third of the cost of roads east, of the same character. These roads, when completed, will give every facility to the development of the resources of the State, and will contribute largely to the rapidity of the growth of our city, as well as of the whole State, while they must in the end prove profitable to the stockholders, and greatly beneficial to our farmers.—*Ind. Sentinel.*

Toledo, Norwalk and Cleveland Railroad.

This is one of the links of the "Lake Shore railway," now constructed or constructing, and when finished with its connections, will give an unbroken railway communication from the Eastern Atlantic States to the Mississippi river. The length of road now being constructed by the above company is about eighty-seven miles, running from Toledo to Grafton, at which latter point it connects with the Cleveland and Cincinnati road, running some 24 miles; making in all 111 miles from Toledo to Cleveland. The Toledo, Norwalk and Cleveland company are to operate the entire line from Cleveland to Toledo. The route, as we learn from the best authority, is of the most favorable character, almost destitute of curves, and having no grades over 30 feet to the mile, and will be built at a maximum cost of about fifteen thousand dollars to the mile. Eminent engineers from this part of the country represent the line as one of the most favorable ever run in the United States.

Messrs. Brown, Baxter and Company, a firm composed of enterprising citizens from Vermont, are engaged in the construction of this road, which is destined to connect Toledo with Cleveland, thus forming a part of that extended line of roads which will unite the Atlantic cities with the west. At Toledo, the above road connects with the Michigan Southern and Northern Indiana, which roads will soon be finished to Chicago. Here these unite with the Galena road, over which the cars are already running more than fifty miles, with the Rock Island road, extending to the Mississippi on a westerly course, and with the Central Illinois, which extends to the Ohio and Mississippi at their confluence.

This chain of roads is one of the most extensive in the United States, and cannot fail to command a large share of the traffic of the extensive regions it connects. Any one acquainted with the amount of travel that is concentrating at Chicago, as a point of communication to and from the east, and with the increase of the population of the west, will appreciate the motives of those now engaged in pushing forward these lines to an early completion; nor is it all surprising that they should have attracted the attention of eastern contractors, who have both the energy and the means requisite for such enterprises.

The contractors on this road are favorably known in Boston. We understand they are now pushing forward the work with a large force; that some forty miles of the earth work will be completed by

the first of February next, and the stone for the masonry and the bridge timber will be got up this winter, ready to be put into the road early in the spring and summer; and that the whole road, properly ballasted, is to be finished by the first of January, 1853, at which time, it is expected, the line to the Mississippi will be completed in its whole extent.

Baltimore and her Railroads.

An address was recently delivered before the Baltimore Mechanics Institute by the Hon. Thos. Swann, President of the Baltimore and Ohio railroad. A large portion of which, as might be expected, was devoted to the discussion of the various projects which may be said to constitute the Baltimore system of railroads, and by which that city proposes to draw to herself a large amount of trade now engaged by other cities. As the subject touched upon, is of great and general interest, we give such portions of the address as relates to the subject of railroads.

On the 12th of February, 1827, a meeting was held, to take into consideration the best means of restoring to the city of Baltimore, "that part of the Western trade which has lately been diverted from it, by the introduction of steam navigation and by other causes."

In accordance with the recommendation of this meeting, a committee was appointed, consisting of Philip E. Thomas, Benjamin C. Howard, George Brown, Talbot Jones, Joseph W. Patterson, Evan Thomas and John V. L. McMahon, to consider and report upon the course proper to be pursued in a crisis of so much interest.

The deliberations of this committee resulted in the recommendation, "that immediate application be made to the Legislature of Maryland, for an act incorporating a joint stock company, to be styled the 'Baltimore and Ohio railroad Co.,' and clothing such company with all the power necessary to the construction of a railroad with two or more sets of rails, from the city of Baltimore to the Ohio river."

This recommendation was unanimously adopted, and with a promptness worthy the importance of the enterprise, we find our citizens engaged in laying the corner stone of this stupendous work, on the 4th of July, 1828, the year immediately succeeding the action of the committee.

Twenty-four years, gentlemen, have elapsed since this important step was taken, and there are now complete and in operation, exclusive of the New York State Canal of 340 miles between Albany and Buffalo, two gigantic lines of railway, constructed by the enterprise and capital of New York, viz: a chain of 325 miles uniting Albany and Buffalo, and the New York and Erie road of 470 miles extent, involving an aggregate expenditure of nearly \$40,000,000, both projected with a view mainly to a trade, which it has always been in the power of the city of Baltimore at any moment to control.

In 1834, the Baltimore and Ohio railroad was completed to Harper's Ferry; and the branch to the city of Washington, commenced in the autumn of 1831, was opened for travel in July of the ensuing year. The main line was further extended to Cumberland in November, 1842.

The policy of this company, it is well known, always looked to a connection with the Ohio river at the most southern point which the Legislature of Virginia might be induced to concede, and until the passage of the law of 1847—the present charter of the company—every effort had failed to bring about a relaxation in the policy which had up to that period, retarded the extension of the work.

From the recommencement of active operations in 1848, down to the present moment, it does not become me to say more, than reiterate the hope, so often heretofore expressed, that by the 1st of January, 1853, this gigantic enterprise, after so many years of delay and embarrassment, will have reached its appointed destination, and opened to the embrace of the city of Baltimore, that immense trade, to which for more than twenty years, her attention has been anxiously directed.

Fortunately, gentlemen, for the ultimate security of the interest involved in the work, and the pros-

pects of the city of Baltimore, no sooner had its entire line been located and placed under contract, and the city of Wheeling indicated as its terminus on the western waters, than the State of Virginia, relaxed her hitherto restrictive policy, and passed a law, granting the privilege of a right of way to the mouth of the Little Kanawha, from a point 115 miles distant from the town of Parkersburg on the line of the main thoroughfare; thus filling up the only chasm in the projected straight line road, between Baltimore and St. Louis, and affording the shortest and most direct route, that it will be competent for engineering skill to devise hereafter, between the heart of the West and the Atlantic seaboard.

This great charter is now at the disposal of the city of Baltimore, and will no doubt be approached and acted upon when the proper time arrives, with that promptness and determination, which a measure so vital to her future prosperity and safety, imperatively calls for, at the head of her corporate authorities.

While, however, it was conceded, that a connection with the Ohio railroad company, was a measure paramount in its claims upon our State and city—inviting the active co-operation of every interest, and calling for the most prompt and speedy action, in securing to us the advantages of our natural position, there were other features connected with our domestic policy, which did not escape notice. The country lying to the North and drained by the waters of the Susquehanna, was not without its attraction. The tide water canal; and the line of the railway connecting the city of Baltimore with the borough of York, in the State of Pennsylvania, were both projected at an early period, with a view to a trade which up to that time, had only been partially developed. The latter of these works has since been thrown in connection with the central Pennsylvania road at Harrisburg, thus affording the shortest and direct line between Baltimore and the Ohio river, over the city of Philadelphia, by the great line of road which it has thus been permitted to intersect.

But the destiny of the Baltimore and Susquehanna road is still in the future. The State of Pennsylvania, relaxing the restrictive policy, which, in common with Virginia, had marked her former legislation followed a good example, in throwing open her territory to an extension of this important line, and the time is not remote, when a continuous chain of railway communication will thus be effected, between the city of Baltimore and the distant waters of Lake Erie.

Such, gentlemen, is the skeleton outline of the system of railway communication, which has been projected with a view to secure to you the advantage of your central position, and a glance at the map will abundantly show, that while it admits of no improvement, it will be found to present the strongest claims to the support of all classes and interests.

1. The Baltimore and Ohio railroad connecting with the great central line of Ohio at the city of Wheeling, and thence with the city of Cincinnati.

2. The Washington branch of the Baltimore and Ohio railroad, placing the city of Baltimore in connection with the seat of government, and the combination of roads connecting with Charleston and the South.

3. The extension of the straight line road, from Three Forks to Parkersburg, and thence to Cincinnati and St. Louis, giving an advantage in favor of Baltimore of 88 miles in distance over Philadelphia, 305 miles over New York, and 390 miles over Boston.

4. The Baltimore and Susquehanna road, connecting with Pittsburg and the Ohio river, by its intersection with the Central Pennsylvania road, and the extension of that road to Sunbury and Erie.

5. The Baltimore, Wilmington and Philadelphia road, completing the chain of communication with Philadelphia, New York and Boston.

In the development of this system of railway communication, the State of Maryland, including the city of Baltimore, and the individual stockholders, will have expended, on the completion of the Baltimore and Ohio railroad, little short of \$25,000,000, exclusive of more than \$10,000,000 represented in the Chesapeake and Ohio canal, making

a total aggregate of \$35,000,000 invested in their works of internal improvement. This amount may be said to compare favorably with what has been done in other States, when we consider the limited extent and population of the State of Maryland, and the disadvantages with which she has had to contend, in her limited resources and always overtaxed capital.

(Remainder next week.)

Tennessee.

State Aid to Internal Improvements.—The following is a synopsis of the "bill to establish a system of internal improvements in Tennessee," introduced into the House of Representatives on the 5th inst., by Mr. Houston, of Davidson, chairman of the committee on internal improvements.

Section 1, provides that whenever the East Tennessee and Virginia railroad company shall have procured good and solvent *bona fide* subscriptions of capital stock, sufficient to prepare the road for the iron, rails and fixtures, and shall have thus fully prepared a section of ten miles at either terminus, in a good and substantial manner, unencumbered by any lien whatever, the Governor, upon certain specified proofs of these facts, shall issue to the company *coupon bonds* of the state, not exceeding eight thousand dollars per mile, at six per cent interest, payable semi-annually, and not having more than forty nor less than thirty years to mature.

Section 2, provides that these bonds shall not be used for any other purpose than procuring the iron rails, chairs, spikes and equipments.

Section 3, retains a lien by virtue of this act, upon all the effects of the company, for the punctual payment of these bonds and the interest thereon.

Section 4, applies these provisions to any additional section or sections of ten miles, prepared in like manner, and under the same guarantees and restrictions.

Section 5, provides for the taking possession of the road by the state, in the event that the company shall fail to pay the interests on the bonds as specified in the bill, to manage the same until a sufficient nett sum shall be realized to pay the interest accruing.

Section 6, provides for the sale or other equitable disposition of the road, for the indemnity of the state, in the event that the company shall fail to meet the bonds punctually at maturity.

Section 7, provides for raising a sinking fund out of the means of the company, to meet the liabilities assumed by the state on account of the road.

Section 8, prescribes rigid regulations as to the time and manner in which the officers of the road shall report to the Governor the progress and management of the work.

Section 9, prohibits all the officers of the road, under rigid exactions and heavy penalties, from speculating or dealing, directly or indirectly, in real estate, on the line or at either terminus, until after the road is completed.

Section 10, provides that the provisions of this act shall extend to and embrace the Chattanooga, Harrison, Georgetown and Charleston railroad company, the Nashville and North Western railroad company, the Louisville and Nashville railroad company, the Henderson and Nashville railroad company, the South Western railroad company, the Memphis and Charleston railroad company, the Nashville and Southern railroad company, the Mobile and Ohio railroad company, the Nashville and Cincinnati railroad company, the East Tennessee and Georgia railroad company, the Memphis, Clarksville and Louisville railroad company, and the Winchester and Alabama railroad company, so far as the main trunk roads to be constructed by said companies lie within the limits of this state, and not otherwise, and said companies shall have all the powers and privileges, and be subject to all the restrictions and liabilities contained in this act. *Provided*, that this act shall not extend to or embrace more of the road proposed to be built by the Memphis, Clarksville and Louisville railroad company, than that part which lies between the Kentucky line and the city of Clarksville. *And provided further*, that this act shall not extend to our embrace the East Tennessee and Georgia railroad company, unless said company shall extend their road so as to form a junction with

the East Tennessee and Virginia railroad at Knoxville, and in the event said company fail or refuse so to extend their said railroad to make said junction, then all the rights, powers and privileges, with the restrictions and liabilities of this act, shall extend to any company that may be hereafter chartered for the purpose of building a railroad to make said connection.

Sections 11, 12, 13, 14 and 15 provide for faithfully carrying out in their true meaning and intent the foregoing provisions.

The above bill, or one of a similar character will undoubtedly become a law.

Lackawanna and Western Railroad.

The *Ithaca Journal* publishes the following interesting description of the Lackawanna coal region and the Leggett's Gap or Lackawanna and Western railway:—

The Lackawanna and Western railroad is about 50 miles in length, extending from Great Bend—where it connects with the Erie railroad to Scranton, a village of some 2,500 inhabitants, lying about fifteen miles south of Carbondale, in one of the great coal basins of Northern Pennsylvania.—The road crosses the Susquehanna at Great Bend, and tends southward through a country as yet almost entirely unimproved, skirting the bases of mountains, and at times through dense forests, which stretch far away on either hand. On one portion of the route, for nineteen miles, the track follows Martin's Creek, through a valley of but few hundred feet in width, while the majestic hills rise abruptly for a thousand feet upon each side.—With a solid and even track, commodious cars, and first class locomotive, we speed along until emerging from Leggett's Gap, a rent in the mountain, we wind around the hills and feast our eyes upon the beautiful valley of the Lackawanna, spread out before us. Just before reaching Scranton, the road crosses the river on a bridge of about 300 feet in length, and near 100 feet above the water, resting on a single abutment in the centre.

The coal mines belonging to the company, and which are the principal ones at present worked, lie about a mile and a half north of the village, and are situated on the west side of the valley down which the Lackawanna river runs. The strata of coal where it crops out near the base of the hill, is about 9 feet in thickness, with one inch seam of slate running through it. This strata is of uniform thickness, and rises as you advance into the hill just sufficiently to allow the water to run off freely through the mouth of the mine.

Fifty miles is the length of the Lackawanna coal basin, by some 8 or 10 in width; and underneath this vast plain lies the purest and most beautiful anthracite coal ever dug from the bowels of the earth.

At the mouth of the mines stands a pillar of pure coal in a square form and about 8 feet in height weighing 7600 pounds! which has been taken therefrom.

The Lackawanna railroad company, own immense tracts of coal lands, and all that is needed is cars and engines to deliver their products to consumers.

In addition to the richness of these lands in coal, iron ore of excellent quality also abounds in great quantities.

A large steam saw mill is in progress of erection, and a flouring mill and furnace for casting iron is in successful operation. A large smelting furnace is in constant operation, and also a very extensive rolling mill for the manufacture of railroad and other iron.

A splendid hotel, a magnificent church, costing some \$15,000, large engine houses, and other buildings connected with the operations, are in progress of erection.

Hills are levelled, valleys filled up, and all the evidences of thrift are plainly to be seen. From the location and the great beds of iron and coal abounding in the vicinity, and the market opened there for, we entertain not a doubt, that Scranton will soon be one of the most prominent points of Northern Pennsylvania.

The untiring enterprise of the company of which Col. G. W. Scranton is the head, has made the village which bears his name what it is—a city in

the forest. The same energy will not flag, now that the success of its labors is rendered so certain.

The time is not far distant when a railroad will be completed from Scranton to the Delaware water Gap and from thence to New York city.

Indiana.

Evansville and Illinois Railroad.—The *Evansville Journal* says that the iron on this road is laid to within four miles of Princeton, and that sufficient to complete it to that point will be received in a few days. The same paper in speaking of the efficient manner in which the officers of this company have pushed forward the road, says:—

But while giving praise, we may as well say that the President of the road, Hon. Sam'l. Hall, and Mr. John Ingle, Jr., Secretary, have been active in pushing forward the work on this road.—They have spared no energy or industry, in completing the road in the shortest possible time to Princeton. They are still at work, and their efforts should be appreciated by their fellow citizens. Mr. Ingle has been almost constantly on the road, devoting to the enterprise more time and labor, than mere duty ever called upon him to give, and yet which circumstances made it to his credit to bestow. Under the immediate supervision of these gentlemen, the public may rest assured that there will be no delay in the entire completion of the road to Vincennes.

Alabama.

Railroad Convention at Cedar Bluff.—Our readers are aware, we presume, that railroads are now being built in Tennessee and Virginia, to connect the different lines in those States, so that by the time the Alabama and Tennessee river railroad reaches Gadsden, we shall have an unbroken chain of railways from this place to the Eastern cities.—We thought at one time we should be compelled to except from this announcement, that portion of the road, some eighty miles which lies between Gadsden and the nearest point on the Georgia railroad but from the proceedings of a railroad meeting held on the 3d inst. at Cedar Bluff, composed of the citizens of Cherokee county, this State, and Chattooga county, Ga., we are inclined to believe that link will be ready for the chain as soon as any other.

The object of the meeting, as stated by the Chairman, was to procure charters for their road, to be called the "Coosa and Chattooga river railroad," from the Legislature of this State and Georgia now in session.

An interesting letter from John W. Lapsley, Esq., President of the Alabama and Tennessee river railroad, expressing deep interest in the road was read before the Convention as were also portions of the report of Mr. Troost, the able engineer of the road.

The following are the preamble and resolutions submitted by the committee appointed to draft them:—

The committee appointed by the convention for the purpose of reporting business, are duly impressed with the propriety, at the present period, of taking action before the meeting of the Georgia and Alabama Legislatures, and of memorializing the same to grant as Charters for the construction of a railroad from Gadsden on the Coosa river, to some point on the Western and Atlantic railroad, so as to connect with the Hiwassee and East Tennessee, and Tennessee and Virginia railroads, and thus form a more direct and speedy communication between the northeast and southwest. As the distance of about eighty miles between the points indicated is the only remaining portion of this great chain of railroads unchartered; and occupying as it does a central position between the Selma and Gadsden, and the east Tennessee, and Tennessee and Virginia railroads, the commerce and the extended agricultural resources of the country, demand that this road should be constructed. Your committee deem it entirely unnecessary to enter into any detail of the advantages which would accrue to the portions of Georgia and Alabama through which the road would run, and to both of the States at large—did time permit—as they are manifest. They content themselves with reporting to the Convention the following resolutions.

Resolved, That the construction of the contemplated Railroad from Gadsden, on the Coosa river, to the nearest and most accessible point on the Western and Atlantic railroad—as regards its practicability, commercial and agricultural advantages—is imperiously demanded.

Resolved 2d, That our Senators and Representatives, with the Georgia and Alabama Legislatures, be requested hereby to ask and urge upon their respective bodies to grant us Charters for the contemplated railroad.

Resolved 3d, That no time should be lost by the friends of this measure in memorializing the Legislatures of Georgia and Alabama to grant us the desired charters.

Resolved 4th, That each member of this convention use his influence in obtaining signatures to said memorials for said charters.

On motion, the corporate name to be used in the charters to be applied for, in this State and Georgia, shall be, "The Coosa and Chattooga river railroad."

Opening of the Pennsylvania Railroad.

The opening of the Pennsylvania railroad, from Pittsburgh to Turtle Creek, took place yesterday, and was signalized by an excursion trip given on the part of the company to a number of gentlemen, comprehending the Mayor and Councils of the two cities, stockholders, public officers, editorial corps, etc. The cars left the station on Liberty street, just above the canal bridge at a quarter past eleven, and arrived at the Turtle Creek station at 12, M. It was snowing hard at the time, and the track was not, therefore, in a situation for high speed, even were such desirable in a first trip. The road is a first rate one, the superstructure being very solid, and the cars running very quietly. The cars are of the first class, and the handsomest, taken as a whole, we have ever seen. They are truly luxurious. At Wilkinsburgh and at Turtle Creek very handsome station houses have been erected, and at the latter place there is a turn-table, to answer the purposes of an accommodation train to that point.

After dinner a meeting was organized, by calling his honor, the Mayor of Pittsburgh, John B. Guthrie, Esq., to the chair, and appointing as vice-presidents, his honor, the Mayor of Allegheny, H. S. Fleming, Esq., Gen. Wm. Larimer, Janr., Wm. A. Shaw, S. S. Fowler, D. N. White, Wm. Eichbaum, L. Harper, Robt. McKnight, Joseph Pennock, Robt. Morrow, Martin Lytle, Robt. M. Biddle, Wm. Graham, and Rodey Patterson; and as Secretaries, Geo. Peebles, Chas. H. Paulson, and Thos. Philips.

A committee, consisting of Robt. M. Biddle and Thomas Philips, Esquires, was appointed to draft resolutions, and during their absence, several gentlemen addressed the meeting, among whom were Gen. Wm. Robinson, Jr., Robt. McKnight, Esq., Gen. Wm. Larimer, Jr., Dr. J. R. McClintock, etc. The following are the resolutions.

Resolved, That the meeting have witnessed, with unmingled gratification, the completion of that section of the Western Division of the Pennsylvania railroad, which is a triumphant vindication of the good faith in which Philadelphia and the management of the company have pursued their engagements with Pittsburgh and Allegheny county.

Resolved, That the progress made in this stupendous enterprise, with an hiatus of but twenty eight miles to be overcome in order to complete the Union of Philadelphia with Pittsburgh, by railroad, and this accomplished, with inadequate means, without incurring debt, and within three years from the striking of the first spade in the soil, is a result without parallel in the annals of railroad making, and reflects the highest honor on the management of the Pennsylvania railroad company.

Resolved, That the thorough and substantial character of the work, throughout its length, and in all its details, attests at once the wisdom and forecast of the President and Directors, and will remain an enduring monument of the energy, zeal, and skill of the engineers.

Resolved, That the hearty approbation with which we have tested, in our excursion, the excellent qualities and capabilities of this road, prompts us to mention as deserving all honor, J. Edgar Thompson, the Chief Engineer, Edward Miller,

the principal Assistant Engineer in charge of the entire Western Division of the work, and Thomas Seabrook, Engineer in charge of this Section just put in service.

Resolved, That looking to the unfailing punctuality with which the several divisions of this road have been thrown into service at the precise periods pre-announced by the management, for their completion, we look forward with entire confidence, as we do with lively satisfaction, to the first of August next, to witness the consummation of the work which is to bind Philadelphia and Pittsburgh in the iron bonds of neighborhood and fraternity.

American Railroad Journal.

Saturday, December 27, 1851.

To Subscribers.

SUBSCRIBERS wishing for back numbers of the Journal to make up their volumes, are requested to send for them immediately. Missing numbers furnished gratis.

Freight on the New York Railroads.

On the 1st instant all restrictions upon the carriage of freight were removed from the railroads in this State. This fact has tended to increase largely their local business. It also caused the accumulation of large masses of freight at Buffalo, and at various other points on the canal, for the purpose of forwarding the same to market, after the closing of that work. In addition to these sources of business, a very large amount of freight was caught in the ice, *in transitu*, which is now coming forward on the Erie, and the central lines of railroad.

Our past winters' experiments in forwarding by railroad, fully proves the importance of the canal, and its superiority as a means of transporting heavy freight. Both the Erie and the northern lines, are completely glutted with business. A forwarding merchant informed us a day or two since, that the whole amount of freight now wanting transit between Buffalo and New York, could not all be forwarded to market by all our lines until long after the opening of the canal. Our roads, to be sure, have not properly prepared themselves for the immense amount of freight thrown upon them.—The principal difficulty exists between this city and Albany. At the present time, most of the freight from Albany comes in over the Housatonic road. The Hudson River road is but poorly prepared for the immense harvest now presented. It possesses no suitable store houses for the reception of such freight, as its limited amount of machinery enables it to transport. The Harlem road will, in a few days, form the third line to Albany. We hope that the united exertions of the three, will be able to make some impression upon the immense mass of merchandise and produce now waiting to come forward.

It now costs 30 cents per barrel to transport flour from Albany to New York. Upon the Hudson the charge is about one-fourth this sum, but there is another great advantage in the water carriage over that by land, in the small expense attending the shipment after reaching New York. Corn and flour are generally transferred direct from the boats to ships, as only a very small portion of the above articles intended for exportation is ever landed. They can remain in the boats, without much additional charge, until sold, and for the boats, the whole extent of the Hudson from Albany to New York is a harbor. The moment articles of freight

touch the shore, the charges commence, which absorb a large part of the profits of business.

As it is, one road in their present condition is of incalculable importance. Western and Northern New York is overflowing with produce, which, without a railroad would be compelled to await the opening of the canal and river to come to a market.

Erie Railroad.

It is announced, and we presume upon good authority, that the Erie railroad company are about to make a new issue of bonds to the amount of \$3,000,000 to fund their floating debt. This is all right and what was expected, but we did not suppose that this debt exceeded \$2,000,000. A portion of the loan may be for additional improvements. The result fully proves the correctness of our opinion expressed in a late number of our paper. We did not believe the Erie to be exempt from the ordinary experience of all other roads.

We learn that the report of the directors will soon be published, which, we presume, will contain a full *expose* of its affairs. We hope the report will set out some plan for the construction of a double track. There can be no doubt but that the business of the road will be fully equal to the capacity of two tracks. True economy demands that the railroad shall be placed in a condition that shall secure the largest income, whatever may be the amount required for this purpose. The great and primary object, the construction of the road, is now secured, and nothing now can be gained by published statements of the cost of contemplated improvements. The public should understand the amount of additional calls that may be expected to be made upon it, and those investing in the stock and securities of the road, are entitled to know what they are purchasing.

Whatever uncertainty or doubt may exist as to the ultimate cost of the road, there is no question that its earnings have far exceeded public expectation, nor that the road must yield an ample return upon such cost, if well managed. This grand fact should encourage the directors to take just such steps as are best adapted to promote the best interest of the road, irrespective both of past representations, or public opinion.

Laborers for Railroads.

Railroad companies and contractors can always be supplied with laborers upon application to C. B. Richard, No. 85 Greenwich street, New York, to whose Advertisement in another column we would refer. Mr Richard's arrangements enable him to supply any number of efficient laborers upon the shortest notice.

Rock River Valley Railroad.

The work on this important road from Chicago to Fond du Lac is progressing. Twelve miles of the road from Fond du Lac have been graded, the bridge over the Fond du Lac river is completed, and about 130 tons of iron for the road have arrived at Green Bay. An extensive machine shop and engine-house have been erected at Fond du Lac.

Georgia.

Central Railroad.—We give in another column the report of the Directors and Superintendent of this company for the financial year which has just closed. They present the affairs of the company in a very prosperous condition. The company are able to make a regular 8 per cent. dividend, and at the same time to lay by a handsome sum for contingencies. Few of our railroad companies can make a more favorable exhibit.

New York.

Northern Railroad.—At a meeting of the Directors of the Northern railroad, held on the 15th inst., James D. Watson, Esq., was unanimously elected President in place of Marcus T. Reynolds, resigned.

Stock and Money Market.

We have little to alter from our reports of the few past weeks. Money is in active demand for all purposes, and as the present week closes the year, every one is too much engaged with the business appropriate to the season, to entertain new projects, consequently nothing is doing in the bond or stock market, save in the ordinary fancy line. It still continues difficult to negotiate any securities but those of the first class, and the present state of things will probably continue for some months into the next year, though we may expect to witness some relaxation from the present stringency in the money market. We cannot advise our friends to offer their securities while the present feeling continues. Every new supply tends to depress the market still further.

The Southern Michigan railroad company have declared a semi-annual dividend of 6 per cent, making 14 per cent for the year. This road will probably be operated from Toledo to Chicago in January, with the exception of 13 miles, which will be done on a plank road.

The directors of the Michigan Central railroad corporation have declared a dividend of 14 per cent, namely, 10 per cent in stock, and 4 per cent in cash.

The Western railroad company have declared 4 per cent dividend, payable Jan. 1st.

The Eastern railroad, Mass., and the Eastern railroad, in New Hampshire, also pay 4 per cent on the 5th of January.

The Taunton Branch railroad, also, has a dividend of 4 per cent.

Canal Contracts.—The Canal Board have adopted a resolution, directing the Canal Commissioners together with the State Engineer and the Division Engineer having charge of that portion of the Canal where the work is to be let, to contract in all cases with the lowest bidder, when, in the judgment of said Board, he has the ability to perform the contract within the prescribed period, and give satisfactory security. In no case, however, is more than \$200,000 worth of work to be awarded to one company or person, except where the work cannot be advantageously divided. A corrected statement of the bids for the revenue certificates will be found on another page.

The bids for the Canal Revenue Certificates, amounting to \$500,000, were opened at Albany by the Controller on Tuesday afternoon, in the presence of the State officers and a number of capitalists. The aggregate bids amount to \$1,026,000—more than double the amount that was required, at a price ranging from par to \$2 63. We annex a list of the offers made and the amount awarded to successful bidders.

The deposits at the Philadelphia Mint up to the 20th instant were \$44,548,000
At New Orleans to 1st December 7,666,000

\$52,614,000
Shipments from New York, Philadelphia and Boston 45,773,000

Surplus \$6,441,000

The surplus of over six millions is exclusive of a very large amount of coin brought into the country by improvements from foreign lands, and not made public.

Any number of individuals may associate themselves together for the purpose of constructing a railroad, and upon subscribing stock to the amount of \$1,000 per mile, for the length of the road, and paying into their treasury a small per centage upon such subscription, may organise by the choice of directors and officers. The company may then locate their road; and if, upon petition, the Legislature confirm the location, the company may proceed to the work of construction, and may condemn

land, and perform all other necessary acts. The Atlantic and Mississippi railroad company took the initiatory steps, but after applying to the Legislature of Illinois, that body refused to confirm their location. The company claimed, that by conforming to the law in the mode of subscription and organization, they had satisfied its intention, and were competent to proceed in the construction of their road. This being denied, the matter was carried before the highest tribunal of the State, which as we understand it, has decided that the above company are vested with all the powers necessary to construct a railroad, with the exception of the right to *condemn land*. The Atlantic and Mississippi company, it is said, are making preparations to proceed under this decision, they having secured the right of way on their line without the necessity of resorting to condemnation. Should they be enabled to secure the right of way for the whole distance, we see no legal objection to their proceeding.

Belvidere Delaware Railroad.

Feeling a deep interest in the commercial success of the city of Philadelphia, and understanding application will shortly be made to her business men for aid to complete the "Belvidere Delaware Railroad," now being built along the banks of the Delaware, and intended to connect at or near the Water Gap with two several railroads—one leading to Lake Erie by the way of Scranton, and the other to the town of Newburg, via the valley of the Paulinskiln, the stock for both roads having been lately taken and surveys made by New York and Boston capitalists; I deem this a proper time for the following remarks.

Situate as Philadelphia is, equi-distant from her two great rivals, having New York on her right and Baltimore on her left, it is high time for her to look to her railroad interest, or her citizens will soon lose all right to claim Philadelphia as "*the first manufacturing, and second commercial city in the Union.*"

On the completion of her Central road, Philadelphia will in some measure have protected herself against the encroachments of Baltimore; but her greater rival, New York, like a great Banyan tree, is silently extending her branches and taking root in every direction. Her Erie road to Dunkirk gives her the command of Lake Erie and secures the trade and travel of northern Pennsylvania, her Lackawanna and Western railroad opens to her merchants the Wyoming valley, and New York capital by the 4th of July next, will have finished the New Jersey Central railroad to Easton, Penn., and the trade of the counties of Lehigh, Northampton, Carbon and Monroe, and the greater part of Bucks in Pennsylvania, and of the counties of Sussex, Warren and Hunterdon in New Jersey, will be turned at once to the city of New York. Some idea of the importance of this trade may be formed from the fact that the toll taken at the weigh lock at Easton alone (on articles going south to Philadelphia) during the fiscal year ending the 30th of November last, amounted to \$204,312 45. The produce sent to New York from the same point, via the Morris canal and the New Jersey Central railroad, must approximate said sum, but not having any data before me, I shall not hazard an opinion as to the precise amount of toll taken in on said last mentioned routes. Having thus stated facts, it is in no unkind spirit, I would ask the merchants of Philadelphia if they are prepared thus to lose two-fifths of the trade of Pennsylvania and

New Jersey, legitimately belonging to them, without a single effort to protect themselves, and as it would really seem without a single inquiry as to the possibility of a remedy. It is true, two propositions have recently been presented, through respectable conventions, to enable Philadelphia to reach Lake Erie, the one route through Catawissa and Williamsport to Elmira, 279 miles,* and thence by the Erie railroad 187 miles to Dunkirk, whole distance from Philadelphia 466 miles. The other by Catawissa and Williamsport, 203 miles, and by the contemplated Sunbury road, 240 miles,† to the town of Erie, whole distance from Philadelphia to Lake Erie 443 miles. I freely admit, these roads when finished will do much for Philadelphia and northwestern Pennsylvania, but it ever built, the Sunbury road alone will require of Philadelphia some six or eight millions ere its completion, and it is matter of calculation for the business men of that city to make and consider well, ere they pledge themselves to such an undertaking, with her own great Central road yet unfinished. But there is still a greater question to be answered: will either of these roads when finished, do what Philadelphia by her position can do at little expense to her citizens? and what she ought and is bound to do, or consent to take a much lower grade among commercial cities, as to foresight and enterprise, than she claims at present. She must protect the trade of the river counties on the Delaware, open a way to the Lackawanna coal beds, reclaim the trade of eastern and northern Pennsylvania, and carry the war into her rivals own territory by presenting to western New York, a nearer and cheaper railroad communication to the city of Philadelphia than they now have to her own capital.

Surely Philadelphia has no Board of Trade, no Chamber of Commerce! or her citizens would have been booked up ere this to her danger from railroads constructed or to be constructed, and the danger either prevented or cured, and not thus have waited until the evil has actually overtaken her, and gained strength by possession.

Her own Delaware, when she forced her way through the Blue Ridge, leaving rock upon rock piled up 1500 feet high, and forming a route to the city of Philadelphia with an average descent of less than one foot to the mile, did much for that city as regards a railroad communication to the north and northwest, for it is well here to remember that every 20 feet rise in a railroad is equal to a mile in extent so far as power and time are required, and that while the Erie road has some 80 feet rise to a mile, the Belvidere Delaware road's maximum grade is less than six feet to the mile—thus presenting a grade more favorable than that of any railroad of the same length now constructed, or heretofore surveyed.

I have intimated, and I wish now to be distinctly understood as saying, that Philadelphia has a nearer, cheaper and better line to the lakes than by Sunbury or Elmira, and that she can present to that part of New York lying north and west of the Great Bend of the Susquehanna, a railroad communication some 50 miles nearer to Philadelphia than to the city of New York, and that, too, with a descending grade nearly the whole distance. Let

* As to distance, see report of T. E. Sickles, Esq. engineer, etc., published at Lancaster in 1850.

† As to distance, see No. 814 of American Railroad Journal. The 240 miles given, is said to be an air line, if so, the road will measure at least 20 miles further—equal to 463 miles from Philadelphia to Lake Erie.

those who doubt these two broad assertions, take a map of Pennsylvania and New York, and following the course of the river Delaware, mark the route I propose, and conviction will force itself upon the mind of the most incredulous.

	Miles.
From Philadelphia to Norristown, road completed	17
From Norristown to the intersection of Belvidere Delaware road from Trenton at Johnson's Ferry	31
From Johnson's to Easton	10
From Easton to Belvidere	14
From Belvidere to Water Gap	10
From Water Gap to Scranton, Cob's Gap and Delaware railroad, stock taken and route surveyed	41
From Scranton to Great Bend, by Lackawanna and Western railroad, now in full operation	47
Whole distance from Philadelphia	170
From Great Bend to Dunkirk by Erie railroad completed	259

Whole distance by this line of railroads from Philadelphia to Lake Erie

429
It would appear, then, by actual surveys, that this is the nearest route yet pointed out from Philadelphia to the lakes, and as it is 210 miles from the Great Bend, via the Erie road, to New York, and only 170 miles to Philadelphia, it not only proves that Philadelphia will have an advantage in distance of 40 miles, but it shows conclusively that all persons going south to Philadelphia, Baltimore and Washington, who take the Erie line, travel over 140 miles more railroad than they ought, or will have to do, when the above line of railroads are completed.

I feel confident I might here close this article, and rely on the facts already presented, as sufficient to induce the friends of Philadelphia to come forward and aid the Belvidere Delaware railroad co., to complete the road and form the connections contemplated at the Delaware Water Gap, but justice to myself and the subject require I should present one or two more arguments in favor of this line of railroads. By this route, the coal fields of Lackawanna will be reached at 116 miles from Philadelphia; the first 12 miles from the coal beds the road will have an ascent of 46 feet to the mile, the rest of the road a descending grade into the very city of Philadelphia should the route through Trenton be taken.

The superiority that is claimed for this coal over all others for many purposes, the facility with which it is mined, and the low price this coal might be delivered at, makes the completion of this road a matter of great importance to the mechanics of Philadelphia.

There is still another argument to be adduced in favor of the completion of this road, which will surprise many, and lead others to examine their maps. The Belvidere Delaware road 8 miles above Belvidere, and 80 miles from Philadelphia, will intersect the "Sussex and Warren railroad, lately surveyed to Chester, and thence to Newburgh by the Newburgh branch, at a point 70 miles from said town of Newburgh, thus going to the city of Albany, and those living north and west of her as near, and (when the Boston, Hartford and Fishkill R. R. is finished to Fishkill,) to the citizens of Boston, a nearer, cheaper and more expeditious route to the city of Philadelphia than they now have, with these two other advantages over the New York city route that no baggage need be shifted at any point between the cities of Boston and Philadelphia, and that the road will have a slight descending grade nearly its whole length.

Whatever I may be induced to do hereafter I have not in this communication, more than alluded to, the immense business this road must do, nor have I attempted to work upon the speculative spirit of the age, by proving what might easily be done, that this road will be a *paying* road and its stock soon above par, but have confined myself, to the duty of laying before the public, what I conscientiously believe to be a fair, candid, and true presentation of facts, for the avowed purpose of waking up the "*Board of Trade*" of Philadelphia to her actual danger, and for the purpose of obtaining subscriptions to the capital stock of the "*Belvidere Delaware railroad*" to an amount so paltry and insignificant, when compared to the actual advantage to be derived by Philadelphia, that it might justify the presentation of the sum required as a donation by the authorities of that city.

The "*Belvidere Delaware railroad*" has been in operation as far up the river Delaware as Lambertsville, since last spring. The business done, so far, has exceeded the expectations of the most sanguine—some ten miles further will be finished by the first of April next; the route has been surveyed and marked out ready for letting and the land purchased (with but few exceptions,) its whole length. The other great link, to form at once a direct railroad communication from Philadelphia to Dunkirk on Lake Erie, is the "*Cob's Gap and Delaware railroad*," of some 41 miles in length, the stock for which has lately been taken by New York and Boston capitalists, the route surveyed, and \$10 per share actually paid in. The motives prompting this investment are first, to open a more direct way to the Lakawanna coal beds, and secondly to form a nearer and better route to the cities of New York and Boston, with grades suitable for a coal road.

To enable the "*Belvidere Delaware railroad company*" to complete their road and form the connections contemplated at or near the Water Gap, one million of more capital will be required. Of this sum \$400,000 has been pledged by certain capitalists residing in New Jersey, and by individuals along the line of the road, the remaining \$600,000, it is confidently expected, will be subscribed at once in Philadelphia, and a committee has been appointed, who I understand will shortly* enter upon their duty, by presenting the claims of this road for the consideration and aid of the business men and capitalists.

Will Philadelphia respond to the call?

Belvidere, N. J.

W. P. R.

Railroads in Ohio.

The Steubenville Herald states that the survey from Coshocton to Mount Vernon has just been completed, and a route of easy grades and moderate curves found at a distance of 36 miles, connecting at Coshocton with the Steubenville road to Pittsburg, on a line 25 miles shorter than by Wooster and Beaver.

The Toledo, Norwalk and Cleveland company now have more than 1000 hands employed on the line, the grading to be completed before April next.

A friend at North Fairfield writes us that the project of connecting the Mad River road with the Columbus and Cleveland, by a cross line from Republic to New London, is not abandoned. The exact distance is 31½ miles, and the grade lower and better than the Norwalk and Toledo road. The

* The committee have advertised to open their books at H. T. Hotel, Philadelphia, Tuesday, 6th of January next.

people at Republic are deeply interested in this connection, and think the construction of the line the only way of securing the travel to the Mad River road from ant to Cincinnati. The line shortens the distance to Cleveland, and passes through a fine agricultural country, and the flourishing villages of Greenfield, Fairfield, Fitchville and New London. The people along the line will make liberal subscriptions, and they desire to know what can be done to aid them.

Illinois Central Railroad.

It is reported that advices from Hon. Robert J. Walker, are unfavorable to the negotiation abroad, of the loan for the Illinois Central railroad. We regret this. If we can induce foreigners to send their capital here to aid us in the development of our resources, we receive a much greater advantage from the transaction, than the capitalist, although we may pay him a high rate for his money. A very huge portion of our *agricultural* capital lies inert, for the reason, that for the want of means of transportation, we cannot send it to market.

We are not surprised at the success of Mr. Walker. He has probably met with the same reception that a person applying to either of the directors of the above company, for a similar object, would receive. They must say "if your scheme promises the wonderful results that you represent, you can find plenty of persons where you came from, and who know all about it, to take it up; but if you want money, you must first invest enough of your own means to show your own confidence in the project, and to render our advances secure beyond a doubt." Our neighbors across the water know that there is plenty of money in New York seeking investment in undoubted seven per cent. securities, and a plenty for the best class of works in progress, at 8 and 9 per cent. Such being the fact, they must think it strange that securities of a proposed scheme, like that of the Illinois Central, which promises to give to the stockholders a furnished road as a *bonus*, should be offered in a foreign market, and that before a shovel full of earth be removed. Our roads under our noses and managed by persons in whom we have full confidence, must make out a case, before they can borrow money, by showing an investment nearly equal to the amount sought to be borrowed. Now our people cannot complain, if they receive the same treatment abroad that they extend to borrowers at home, we doubt whether in the present position of the affairs of the company, their bonds to any considerable amount could be sold in this market, where the directors reside and are known to rank among our most responsible men. Such being the case, a sale abroad could hardly be expected.

We submit that the company have been a little fast. They should have constructed say 100 miles, and thus created a conviction that the project would certainly be carried through; and then we apprehend they would have found little difficulty in borrowing for the balance. This they must now do. The real interests of the project have not probably been prejudiced by the non success of Mr. Walker. The present stockholders are abundantly able to build 200 miles of the road without calling for any foreign aid. By doing this they will give a stability of character to the project which nothing else would. They would have liked it better if they could have borrowed the amount necessary for the road. They would have secured the terms, and left them their means to use in their ordinary business. They must now put their own shoulders to the wheel, and then they may call upon *Heracles*.

For the American Railroad Journal.

In a late number of your valuable Journal, the writer alluded to the railroad now being constructed from Rochester through Lockport, to Niagara Falls. He has no interest in the project, and only looks at it as one of the important public works of the country.

In following the route of the canal it avoids the necessity of any rise above Lake Erie. The existing road, near Attica, rises nearly 500 feet above Lake Erie. By any other railroad route, from Lake Erie to tide water, there is a heavy ascent made above the lake. The one under consideration follows the course of the water, and has therefore the advantage in grades. It has also a very large proportion of straight line. It passes through a rich and populous country. It is being constructed with great care, and in the most thorough manner.

At Niagara Falls, it is to connect directly with the Canada Great Western, and thus to become a portion of the most level and direct line from the seaboard, to the head of Lake Michigan.

From Lockport, by a branch of about 12 miles long, it will reach Tonawanda, the foot of upper lake navigation. From thence, there is now a connection with Buffalo, by the Falls railroad. This road will then be the most eligible line from Buffalo eastward, considering grades. It will be so little longer than the existing roads, as to make it fully equal in capacity.

This cannot therefore fail to be an important railroad. It is being constructed with great energy, and will be opened for travel by next midsummer. It seems, even now, strange that this route should have been so long unoccupied. When it shall have been for one year in operation, it will fully justify the worthy projectors, who have carried it along so quietly. At the east terminus of this road, it connects directly with the new railroad between Syracuse and Rochester. The whole route from Schenectady west to the Niagara river, when these two roads are completed, will then be of very uniform character, and will excel in grade and line, any equivalent length of railroad in our country.

B.

Rochester, Dec. 25th, 1851.

Vermont.

Rutland Railroad.—A special meeting of the stockholders of this road, says the Boston Courier, was held at Bellows Falls, on Wednesday, the 17th inst., to take into consideration the present financial condition of the company. The stockholders voted, almost without a dissenting voice, to issue 17,000 shares of new stock at one hundred dollars per share, with the privilege of putting in an equal number of old shares, and making them both a six per cent preferred stock.

The six per cent bonds of the company, as well as the scrip dividends, are to be received in payment of the new stock. This will release the company from debt, and make its stock at once productive. The stockholders also voted unanimously to instruct the directors to extend the road to connect with the Vermont and Canada railroad at Swanton.

The meeting was addressed by Messrs. Reed, Bridge and Harrington, of Boston, Prentiss, of Keene, Barrett, of Chester, Judge Nash, of Ludlow, Cain, of Rutland, and Bradley and Seymour, of St. Johns, Canada East.

A subscription book was opened, and more than 1300 shares of the new stock was subscribed by th

stockholders within an hour after the adjournment of the meeting.

Both the Rutland and the Vermont Central have more self-will than cash; so they must have two parallel lines from Burlington to Rouse's Point, a distance of some 40 miles, where one would answer every purpose. Incompetent management has carried the stock of the latter down to 24 cents on the dollar, and the former seems anxious to emulate the same dormant tendency. Not the slightest apology existed for two roads from Burlington north, and companies that had money to lose, would never entertain such a wild speculation, as two parallel lines for the traffic that the above companies are contending for. The controversies between them tend to bring discredit upon our whole system of railroads. They have already impoverished the litigants. The public may be the gainer to some extent, but the public in the long run are never benefitted by the follies of any of its members.

Railroads in New Hampshire.

We are indebted to the Boston Traveller for the following abstract of the returns of the railroads in New Hampshire, made on the first of May last, to the Legislature pursuant to law.

For the purpose of showing the condition of the railroad interest, in that State, we have condensed the returns into a small compass, giving a good idea of the state of the interest as a whole, and of the corporation separately, dividing them into separate classes, viz:

1. Roads partly lying in other States—

1. *Nashua and Lowell.* Length, 14 miles; capital, \$600,000. No debt.

2. *Boston and Maine.* Length, 74½ miles; capital, \$3,969,000; funded debt, \$153,000; floating debt, \$7,000. Total \$4,129,000.

3. *Worcester and Nashua.* Length, 45½ miles; capital, \$969,331 63; funded debt, \$365,500; floating debt, \$43,645 45. Total, \$1,378,477 08.

The above roads show a total cost of \$6,107,571 08, represented by a capital of \$5,538,425 63; bonds, \$518,500, and a floating debt of \$50,645 45. A considerable part of them, (particularly the Boston and Maine) lie in Massachusetts.

II. Roads within the State that are completed: these we arrange in the following table, viz:—

Road.	Length.	Capital.	Bonds.
Cheshire.....	53½	1,508,794	1,036,400
Concord.....	34½	1,485,000	—
Man. and Law.....	26	785,977	—
Sullivan.....	24½	433,600	676,200
Northern.....	82	2,768,400	—
Eastern, N. H.....	—	492,500	—
Ashuelot.....	—	247,588	195,500
Petersboro' and Shirley..	8½	98,782	37,800

	229½	7,820,641	1,945,900
Road.	Length.	Capital.	Bonds.
Cheshire.....	134,143	2,679,337	—
Concord.....	—	1,485,000	—
Man. and Law.....	76,749	962,726	—
Sullivan.....	60,559	1,170,350	—
Northern.....	—	2,768,400	—
Eastern, N. H.....	—	492,500	—
Ashuelot.....	—	443,088	—
Petersboro' and Shirley..	45,868	182,450	—
	317,319	10,083,860	—

The three last named roads are under lease to other companies. Of two of them, the lengths are not given, but are together probably about 40 miles, making the length of this class of roads about 270 miles.

III. Roads in process of construction and not completed. Of this class, there is but one—the Boston, Concord and Montreal. Its length is 93

miles, of which 71 are in use, and the residue will be opened in October next. Its capital May 1 was 1,118,742; bonds, 296,500; floating debt, 179,858. Total, 1,595,100.

IV. Roads partly constructed, but on which the construction has been temporarily suspended.—These we arrange in the following table, viz:

Roads.	Length.	Capital.	Bonds.
N. H. Central.....	25½	231,731	22,413
P. and Concord.....	—	return unintelligible.	—
Con. and Claremont.....	29	266,031	100,000
Contoocook Valley.....	14½	91,485	104,000
G. F. and Conway.....	12½	131,823	—
Cochecho.....	17½	305,740	26,300
Wilton.....	12	174,344	—

	110½	1,201,154	252,713
Roads.	Length.	Capital.	Bonds.
N. H. Central.....	—	241,098	495,242
P. and Concord.....	—	return unintelligible.	—
Con. and Claremont.....	152,752	518,783	—
Contoocook Valley.....	19,187	214,672	—
G. F. and Conway.....	66,086	197,909	—
Cochecho.....	144,745	476,785	—
Wilton.....	—	174,344	—
	623,868	2,077,735	—

The above roads, with the exception of the Portsmouth and Concord, are constructed to some point on each line, and in operation, as far as constructed, no corporation having any unfinished work; but await a change of times to resume operations.

The Portsmouth and Concord is understood to be nearly graded for its entire distance, but the laying down of the rails is deferred for the present.

The general result from the foregoing tables is as follows:

Roads partly in other States.....	Miles.	Capital.	Bonds.
States.....	134	5,538,426	518,500
Roads within the State completed.....	270	7,820,641	1,945,900
1 road now in process of completion.....	93	1,118,742	296,500
Roads partly completed, but work suspended.....	110½	1,201,154	252,713
	607½	15,678,963	3,013,613

Roads partly in other States.....	Float'g debt.	Total.
States.....	50,645	6,107,571
Roads within the State completed.....	317,319	10,083,860
1 road now in process of completion.....	179,858	1,595,100
Roads partly completed, but work suspended.....	623,868	2,077,735
	1,171,690	19,864,266

This table does not include the Portsmouth and Concord, the return of which does not afford materials to enable a comparison to be made with other roads. When finished, its length will be nearly 50 miles.

From these returns it is apparent that the railroads in New Hampshire will compare favorably with those of any other State. The investment in railroads subject to the laws of the State is nearly twenty millions—of which nearly sixteen millions is capital paid in, three millions are in bonds, and one million and upwards constitutes a temporary debt. The roads that are completed generally pay dividends, and where they do not, the prospects before them are, to say the least, generally favorable; while the short lines that are obliged to suspend their construction are in the aggregate inconsiderable, being only about ten per cent of the whole railroad investment.

Pennsylvania.

Hempfield Railroad.—The first annual report of this company makes their available resources at present as follows:—

Individual subscription in Washington County.....	\$100,000
Washington County subscriptions.....	200,000
Ohio County, Va.....	300,000
“ individual subscriptions.....	154,000
	\$754,000

With this amount it has been determined to put the road from Washington, Pa., to Wheeling under contract immediately. The engineer is now engaged in completing the estimates for this division of the road, and in a few weeks the lettings will take place. The other parts of the road will be put under contract as soon as the means of the company will allow.

Central Railroad.—The Uniontown, Pa., Democrat says it understands from good authority, that the Central railroad company has proposed (if Fayette and Westmoreland counties raise two hundred thousand dollars,) to appropriate the residue necessary to make a railroad from Uniontown (by way of Connellsville and Mount Pleasant,) to Latrobe, and guarantee the payment of 6 per cent interest on the sum raised.

Massachusetts.

Marginal Railroad.—A Boston correspondent states that a committee of the city government of Boston have now under discussion the expediency of laying out a marginal street around the city, of sufficient width to allow two railway tracks to be laid therein, by which means merchandise can be transported with expedition, and at a low rate, upon cars drawn by horse power. The Transcript adds, that “many of our citizens who have made an examination of the subject are of opinion that the plan is both feasible and desirable. A glance at the map of Boston will show that Causeway, Commercial, India, Broad, and Sea streets, can easily be used for such a purpose. Were the plan carried out, branch tracks would doubtless be constructed to connect with most of the wharves of the city, so that the expense of carting merchandise would be considerably reduced.”

Maine.

Androscoggin Railroad.—At the late annual meeting of this company the following gentlemen were nearly unanimously elected directors for the ensuing year, viz: Alonzo Garcelon, Wm. Kilbourne, Thomas B. Little, Ezekiel Treat, Elisha Pettengill, Henry A. Sherrill, Stephen H. Read.

At the meeting of the board, held subsequently, Alonzo Garcelon, Esq., was elected President, and Allen Haine, Esq., Treasurer of the corporation.

Canal Tonnage at Toledo.

The Toledo Blade has a statement of the total amount of tonnage to and from that city by canal, during the past two years. The tonnage for 1850 was 182,494 tons; for 1851 it was 248,926 tons—showing an increase of 36½ per cent in favor of the season just closed. When it is considered that Cleveland was connected by railroad with Cincinnati for the first time during the past season, and that the railroad from Sandusky to Cincinnati was also in competition, this increase of more than one third shows remarkably well for the future prosperity of Toledo.

Eaton and Hamilton Railroad.

A. Haynes, the President of the Eaton and Hamilton railway company, having been elected Judge, has resigned his Presidency, and John Woods, at present Auditor of State, has been elected President in his place.

**TO FOUNDRYMEN,
AND****Contractors for Iron Castings.**

THE Proprietor of the Rossie Furnace, St. Lawrence County, N. York, having lately erected at their works a Casting House 125x75, with suitable Cupolas, Cranes, etc., and a Machine Shop, furnished with a considerable stock of tools, and a water wheel of 30 horse power—the whole carried out in the most substantial manner—offers the use of these premises, in connection with the sale of Rossie Iron, to manufacturers and contractors for castings and machinery.

There are 2000 tons of hot and cold blast iron now at the works, any part of, or more than which, might be contracted for in connection with the above; and as liberal terms of credit would be extended to parties offering satisfactory security, it is supposed that the conditions contemplated may present no ordinary advantages to persons desirous of a large business on a limited capital.

It may be useful to add that the Cold Blast Iron made at these works is of a very superior quality for Car Wheels.

Rossie is 6 miles from the River St. Lawrence, and connected by a good Plank road all but 1 mile. For further particulars, apply to D. W. Baldwin, Agent, at the works, or at the office of the subscriber, Ogdensburg, St. Lawrence Co., N. Y.

G. PARISH.

December 20, 1851. 6t*

**To Railroad Car Builders and
Manufacturers Generally.**

THE Cincinnati, Hamilton and Dayton Railroad Company, at Cincinnati, have ten acres of land adjoining the City and near the Ohio River—their Road running through its center—which they will lease for a term of years, or perpetually, for the establishment of a Car Manufactory, or for any purpose connected with the furnishing of Machinery for Railroads.

The Company have at their Depot grounds, at Cumminsville, about five miles north of the city, six acres of land, eligibly situated for a variety of Manufacturing purposes, which they offer for lease on advantageous terms.

They have, also, on the line of their Road, in the town of Hamilton, 25 miles north of the city, about forty acres of land, situated on the Hamilton Hydraulic Works, where a Water Power can be displayed advantageously, and the same had on favorable terms. This property is also eligibly situated for Manufacturing purposes, and will be sold or leased on accommodating terms.

The above described property is admirably situated for the successful prosecution of the objects referred to, connected as the Road passing through it is with other Railroads built and building into Western and Northern Indiana, and Northern and Eastern Ohio; and the first described land lying near the line of the Cincinnati and St. Louis Railroad.

To skilful and enterprising Car Builders, possessing sufficient capital for the prosecution of that business, the inducements are peculiarly flattering.

For further particulars address, at Cincinnati, S. S. L'HOMMEDIEU, Pres't C., H. and D. R. R.

Dec. 20th.

New England Car Spring Co.,

No. 104 Broadway, New York,

MANUFACTURERS OF

**INDIA RUBBER CAR SPRINGS &
HOSE,**

Of F. M. Ray's improved form, and dealers in every description of Rubber Goods for Railway purposes.

All Goods manufactured by this company are warranted of the best materials, and the same composition which has established the reputation of F. M. Ray's India-rubber Car Springs.

F. M. RAY, Agent.

Railroad Iron.

THE undersigned offer for sale 1000 tons Railroad Iron, (about 56 lbs. to the yard,) now at Brooklyn.

CHOUTEAU, MERLE & SANFORD,
Oct. 1, 1851. 51 New st.

**To Civil and Mining Engi-
neers and Surveyors.**

A YOUNG MAN having lately completed an engagement of six years with an eminent Civil and Mining Engineer in Scotland, is desirous of a situation in that capacity. Has had considerable experience in the mines of Scotland, and is in possession of all instruments necessary for land and mining surveying. Address A. S., care Mr. D. H. Arnot, 50 Wall St., N. Y.

Dec. 13th. 1m*

Notice to Contractors.

Virginia Central Railroad.

SEALD PROPOSALS will be received at the Engineer's Office of the Virginia Central Railroad at Staunton, on the 18th day of December, 1851, for the Grading, Masonry, etc., of that portion of the line extending from Staunton to Panther's Gap, a distance of 35 miles. Drawings and specifications of the work may be seen from the 15th to the 18th of December, inclusive.

The best of references will be required. Contractors are requested to state what work they are engaged upon, and when it will be completed.

The Directors reserve the right to accept or reject proposals as they may consider the interests of the company require. The names, in full, of all the parties must be given in the proposals.

By order of the President and Directors.

T. COLDEN RUGGLES,

Chief Engineer.

Railroad Instruments.

THEODOLITES, TRANSIT COMPASSES & LEVELS on a new principle, with Fraunhofer's Munich Glasses, Surveyors' Compasses, Barometers, Chains, Drawing Instruments, etc., all of the best quality and workmanship, for sale at unusually low prices by

E. & G. W. BLUNT,
No. 179 Water st.

New York, Dec. 1, 1851.

M. B. Hewson, Civil Engineer,
(Open to a New Engagement,)
Memphis, Tenn.

**LOWMOOR
LOCOMOTIVE TIRES.**

THE Subscriber, sole agent for the Lowmoor Co., is prepared to take orders for this superior description of tires, which are furnished, bent, welded and blocked to any dimensions, having but one weld, and at a cost to the importer of less than ten cents per pound for the heaviest weights.

WM. BAILEY LANG.
Bosto November 29th. 1m**Railroad Iron.**

2000 TONS of an approved pattern 59 to 60 lbs. per lineal yard, now manufactured in England, and ready for immediate shipment, from thence.

Also, 2,500 tons of different patterns in port and expected to arrive within sixty days. For sale by DAVIS, BROOKS & Co.

28 Beaver Street, New York.
CONTRACTS made for Railroad Iron at a specific price delivered in England, or at port in the United States.

**PREMIUM
RAILROAD CAR SPRINGS,**

AND OTHER

India-rubber Goods.

TWO Prizes were awarded me last month by the American Institute—one for best Car Springs, the other for best Overshoes. This proves the superiority of the Goods made by me.

HOSE and STEAM PACKING, and all other India rubber goods for Railroad purposes, on hand and for sale cheaper than any other house.

Car Springs, 50 cents per lb. for cash—of the best quality and of all sizes, (Fuller's patent.)

I now give notice that Fuller is the original and true inventor of the India-rubber Spring, and companies who use Springs made by other parties will eventually have to pay me damages. H. H. DAY,
23 Courtlandt st., New York.

Inventor and owner of 17 I. R. Patents, and the oldest Manufacturer of India-rubber in the U. S.
December 6, 1851.

To Railroad Companies.

H. & F. BLANDY, Proprietors
LOCOMOTIVE ENGINE WORKS,
ZANESVILLE, OHIO.

RESPECTFULLY give notice to Railroad Companies that they are now prepared to furnish Engines of the most approved construction and finish, which, for capacity, speed and durability, are not excelled in this country.

Also, all other Railroad machinery, of both wrought and cast iron, pertaining to the road, stations or machine shops.

Terms as favorable as any other builders in the United States.

The facilities for transportation from Zanesville are as good as from any other point in the Union, having steamboat navigation to the Ohio river, and Canal boat and Railroad connection with the Ohio river and Lakes.

One of their Engines, the "Muskegon," on the Central Ohio Railroad, may be referred to, or others, at their works. The attention of those interested is invited, and orders solicited.

Oct. 30th, 1851.

To Contractors.

OFFICE OF THE E. AND ILL. R. R. Co.,
Evansville, Oct. 23d, 1851.

SEALD PROPOSALS will be received at this office from the 13th to the 23d day of December next, for the grubbing, grading and bridging of that portion of the Evansville and Illinois railroad, lying between Princeton and Vincennes, a distance of 24 miles.

This work includes two bridges; one across White River, about 600 feet, the other across Patoka, about 200 feet.

Contractors will state what proportion of the Stock of the Company will be taken in payment.

Plans, profiles and specifications, will be exhibited, and all requisite information given at the Office of the company in Evansville, on and after the 13th day of December next. By order of the Board of Directors.

SAM'L. HALL,
President.**RAILROAD SPRINGS.****Fuller's India-rubber Springs.**

THESE are now made in our own Factory, of the best materials. Each spring is guaranteed to perform the required work. Purchasers guaranteed against adverse claims.

Car Builders will save great expense by calling at the office of the Company.

23 Courtlandt St., New York.

To Railroad Companies.

THE undersigned has discovered and patented an imperishable, cheap, and sufficiently elastic substance, to be introduced between the sill and rail, so that the stone sill can be used in place of the wooden sill: entirely overcoming that rigidity where the rail is laid directly on stone. Address

July 10, 1851. J. B. GRAY, Philadelphia.
4m

Railroad Iron.

THE undersigned are prepared to enter into contracts now at specific prices, to deliver Railroad Iron during the coming Winter and Spring, free on board at the shipping ports in Wales, or at ports in the United States.

CHOUTEAU, MERLE & SANFORD,
Sept. 30, 1851. No. 51 New st.

To Contractors.

OFFICE WILMINGTON & MANCHESTER R. R. Co.,
Marion C. H., S. C., October 18, 1851.

SEALD PROPOSALS will be received until the 15th of December next, for the Piers of a Bridge across the Great Pee Dee River. The job comprises four piers, one a very heavy pier for a draw, and the sinking of cast iron hollow piles by "Dr. Pott's Pneumatic Process," for forming foundations. The plans and specifications of the piers will be exhibited by the Secretary of the Company at Marion Court House, and by the Resident Engineer, L. J. Fleming, Esq., at Wilmington, North Carolina.

WALTER GWYNN,
Chief Engineer Wilm. and Man. R.R.
November 1. Richmond, Va

Bridges & Brother, DEALERS IN RAILROAD AND CAR FINDINGS, 61 Courtlandt street, New York.

Having established a general Depot for the sale of articles used in the construction of Railroads, Locomotive Engines and Railroad Cars, we would invite your attention to our establishment. We have already in store a good assortment of CAR FINDINGS and other articles used in the trade, and feel justified in saying, that should you desire anything in our line, we can supply on terms perfectly satisfactory, and in the event of your desiring to order, you may feel assured that your terms will be as good as though you were here to make your own purchases.

Among our goods may be found Railroad Car Wheels, Axles, Jaws and Boxes, Nuts and Washers, Bolts, Brass Seat Hooks and Rivets, Window and Blind Springs, Lifters and Catchers, Door Locks, Knobs and Butts, Ventilators and Rings, Car Lamps, Coach and Wood Screws, Jack and Bed Screws and Babbitt's Metal; also Plushes, Damask, Enameled Head Linings, Cotton Duck for Top Covering in width sufficient without seams, Curled Hair and all other articles appertaining to cars.

Also a new and valuable CAR DOOR LOCK, well adapted to the Sliding Door. This is decidedly the best yet introduced.

LOCOMOTIVE ENGINE LANTERNS, the best article made in the country. Whistles, Gauge and Oil Cocks, Hemp Packing, American, Russian and Italian. We are also agents for Lightner's Patent Journal Box for Car Axles, that invaluable invention, for the economical use and preservation of Car Journals.

Coach VARNISH and Japan of the best quality.

We would also offer our services for the purchase as well as for the sale of goods on commission.—Both members of our firm have had the experience of many years in the manufacture of Railroad Cars, and our Senior was a member of the well known house of DAVENPORT & BRIDGES, Car Manufacturers, Cambridgeport, Mass. Without knowledge of matters pertaining to Railroads, we feel quite confident in giving satisfaction to both buyer and seller, and hope that through assiduity and attention to any business entrusted to our care we shall merit a continuance of confidence and patronage.

BRIDGES & BROTHER.

July 22, 1851.

Lightner's Patent Axle Boxes.

THE Undersigned are Agents for, and offer for sale, *Lightner's Patent Axle Boxes*, for Railroad Cars and Tenders, which have, by thorough experience, been demonstrated to be one of the most valuable improvements ever introduced in Locomotion. The saving effected in oil alone, will in a few months pay the first cost of these boxes, independent of other advantages. They are now in use upon the following, among other roads, viz:

Boston and Worcester, Boston and Providence, Boston and Fitchburg, Nashua and Lowell, Providence and Worcester, Northern, N.H., Cheshire, Manchester and Lawrence, Concord, N.H., Concord and Claremont, Ogdensburg, (Northern, N.Y.) Stonington, New London Willimantic and Palmer, New Jersey Central, New Hampshire Central, Worcester and Nashua, Fitchburg and Worcester, Connecticut and Passumpsic, Lowell and Lawrence, Salem and Lowell, Wilton Branch, Newburyport.

Below will be found the certificates of a number of gentlemen, whose opinions will be good authority in every part of the country.

Office Boston and Prov. R. R.,
Boston, Dec. 28, 1849.

MR. JOHN LIGHTNER,

Sir,—It affords me the pleasure to say, that after two years' trial of your boxes, I am fully and entirely satisfied of their superiority over any other pattern we have used. This superiority consists in economy of oil and freedom from "heating." I have tried every pattern of box in use, of any note, and do not hesitate to say, that you have devised one which in every respect combines greater advantages than any other within my knowledge, these advantages are so manifest, that I am fitting up all

our cars with your boxes, as fast as practicable.

Annexed, is a statement of an experiment with your boxes, the result of which may be of use to your interests.

Ten passenger cars, running 72 wheels, fitted up with Lightner's boxes used 4½ pints of Patent Oil, at 50 cts. per gallon, ran 43,099 miles, equal to 5.18 pints per wheel for 43,099 miles. Speed, 30 to 40 miles per hour.

Very respectfully yours,

W. RAYMOND LEE, Supt.

I have examined the above statement of Mr. Lee, and fully concur with him in his opinion of the superiority of Lightner's box.

GEORGE S. GRIGGS,
Supt. Machine Shop B. & P. R. R.

Boston, July 26, 1849.

This is to certify that J. Lightner's axle boxes for railroad cars and locomotive tenders, have been in use on the Boston and Worcester railroad one year, and I unhesitatingly pronounce it, in my opinion, the best and most economical one in use, requiring less oil, of easy application, not susceptible of derangement, as in most kinds in use. When requiring repairs or renewal, the same may be done in one-fourth of the time usually occupied for that purpose. The box requires oiling not oftener than once a month—is kept quite free from dust, and consequently wears much longer than those generally in use.

D. N. PICKERING,
Supt. Motive Power, B. & W. R. R.

Office of Boston Locomotive Works,
December 12th, 1849.

The Boston Locomotive Company have been using J. Lightner's patent axle boxes under the tenders of their engines for several months, and find them more highly spoken of by the railroad companies that have used them in regard to economy in the use of oil, their durability and their ease of adjustment, than any other boxes which they have used. We therefore do not hesitate to recommend them to all railroad companies.

DANIEL F. CHILD,
Treas. Boston Locomotive Works.

Taunton Locomotive Works,
Taunton, July 7, 1849.

MR. H. F. ALEXANDER,

Dear Sir,—Your favor of yesterday came to hand in which you ask what success we have met with in using Mr. Lightner's patent box for cars, engines, &c.

We have put it in use on the Boston and Providence railroad, New Bedford and Taunton Branch railroad, Central railroad, N. J., Norfolk County, Rutland and Burlington, and as yet we have not had one complaint from them; and from what we have used of it, and witnessed, we do not hesitate to say that it is superior to anything in use for that purpose. It is simple in its construction, and easy of access, and the reservoir is held close to the shaft, and the oil and journal is perfectly secure from dust; they will run from four to six weeks without replenishing the oil. The brass in the box is changed very much easier than by any other plan that we have seen.

Very resp. yours,
W. W. FAIRBANKS, Agent.

Office Providence & Worcester R. R. Co.,
Providence, Dec. 17th, 1850.

H. F. ALEXANDER, Esq.,

Sir,—The "Lightner patent boxes" for cars and locomotives have been in use under a portion of the passenger cars and engines of this company for upwards of two years, and have given very great satisfaction.

Though combining many excellent qualities, their great superiority consists in the economy of oil.

The result of experiments upon this road shows the consumption of oil by the use of this box, to be not more than one sixth part the quantity consumed by the use of the common box.

With the common box, eight passenger cars, 64 wheels, running 90 miles per day, consumed in 12 months 520 gallons of oil, being an average of 8½ gallon per wheel per annum.

With the Lightner box the same cars running the same number of miles per day, during the same space of time consumed 73½ gallons of oil, being an average of 1½ gallon per wheel per annum.

So manifest are its advantages over any other box used by this company, it is intended to place it under all our cars as soon as practicable.

Besides the saving of oil, as they afford complete security from dust, we think them more durable than any other box in use.

Another advantage resulting from the use of this box is, cars run more easier than with the common box. The saving in fuel which it would effect, would of itself, we think be a sufficient inducement to use this box in preference to any other known to us.

Very respectfully,

ISAAC H. SOUTHWICK, Supt.

JOHN B. WINSLOW,

Supt. Machine Shop, P. & W. R. R.

Cambridgeport, Apr 5th, 1851.

H. F. ALEXANDER, Esq.

Sir,—This may certify that I have been engaged in the manufacture of railway cars since 1834, and have built for the different railroad companies cars of all descriptions to the amount of three millions of dollars, and have used on the above cars all kinds of journal boxes, and find that none give better satisfaction than the "Lightner patent box," both on account of the saving of oil and the arrangement for taking out and re-placing the composition by means of the sliding key, and other conveniences which no other box possesses.

Yours respectfully,

CHARLES DAVENPORT.

Worcester, March 17th, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—This is to certify that I have been for some years past engaged in building cars, and that I have tried most, if not all of the patent boxes, and have found Lightner's patent superior to all others as far as the saving of oil is concerned, also the ease with which they are fitted and exchanged in case they get out of order.

For the last three years, I have put them under all of the cars I have built, and in every instance they have given the most entire satisfaction.

Yours truly,

OSGOOD BRADLEY.

Office Union Works, So. Boston,
May 23d, 1851.

This certifies that I have applied Mr. J. Lightner's patent axle boxes to my locomotives and tenders for the past two years. I consider them superior to all others,—economical in their use, and possessing many important advantages not found in any other boxes.

SETH WILMARTH.

Office 15, R. R. Exchange, Boston,
June 1, 1851.

This is to certify, that we have known the success of Lightner's patent journal boxes upon various roads in New England the past three years, and have been led to examine their peculiar construction.—We are well satisfied of their merits, and have adopted them upon our small gravel cars, and take pleasure, as we ever have done, in recommending their use upon all roads where we are employed in the construction.

GILMORE & CARPENTER,
Contractors.

Amoskeag Manufacturing Co. Machine Shop,
Manchester, May 31, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—We are using the Lightner box on all the engines and tenders we build, and we are satisfied that it is the best box in use, and recommend the same to all those who purchase engines at our works.

Yours respectfully,

O. W. BAYLEY, Agt.

This is to certify that the Fitchburg railroad company having become satisfied of the superiority of J. Lightner's patent Axle Boxes for Railway Cars and Locomotive Tenders adopted the same

and are bringing them into general use upon their road.

One year's experience with the above improvement, has fully convinced me that there has never been anything offered to the public for that purpose which possess such intrinsic value; in fact, this is an improvement which seems to overcome all the difficulties found in all the various kinds now in use. It possesses very many advantages over all others: Some of which are [first] the first cost is much less than that of most boxes in use. [Secondly] 75 per cent is saved in oil; one gill applied to each Journal once a month, or one quart to an eight wheel car, is all these boxes require per month [Thirdly] no dust can gain access to the Journal, which is constantly lubricated with clean oil; hence the saving in repairs of Journals and composition bearings, is a matter of importance. [Fourthly] its construction is truly simple—not complicated, having nothing liable to become loose by constant and severe service. [Fifthly] for convenience there is nothing which approaches this improvement.—The composition bearings may be removed from the Journals of an eight wheel car, by one man, and returned, or duplicates, in twenty minutes, while under the car: the same would require two men, at least half a day with other boxes in use.—The trucks and wheels using these boxes, are free from oil and dirt, usually seen upon all railroad cars, at great expense to the corporation.

NATH'L JACKSON.

Supt. Car Building and Repairs, F.R.R. Co.

Boston, March 9, 1849.

I hereby certify, that I have examined a box for Car Journals, invented by Mr. Lightner of Roxbury, Mass, and I have thought so well of it that I have adopted it on our railroad, I have known of its success on other roads.

S. M. FELTON,

Supt. F. R. R.

Office of the Central R. R., N. J., }
Elizabethtown, May 1849. }

H. F. ALEXANDER, Esq.,

Dear Sir:—Your favor, [wishing to be informed how we liked Lightner's patent axle boxes for R.R. Journals,] has been duly received; in answer we would say, we have used the boxes on Locomotive tenders one year, more or less, and on our cars some six months. I consider them the best boxes in every respect, I have ever used, or even seen used on any other roads—for safety, durability and the economy pertaining to all the details connected with the boxes and Journals of R. R. Car wheels; and we shall adopt them upon this road.

Yours Respectfully,

JOHN O. STEARNS.

Supt. Central Railroad Co., N. J.

Manchester, N. H., Nov. }
1st, 1850. }

H. F. Alexander, Sir,

I have used "Lightner's Boxes" under all the Cars of the Manchester and Lawrence railroad, and feel no hesitation in saying that I think them to be the best boxes now in use.

Yours, &c.,

THEODORE ATKINSON, Agent.

Cheshire R. R. Office, Keene, }
March 5th, 1851. }

Mr. H. F. Alexander,

Sir.—Lightner's Patent Boxes have been used on the Cheshire R. R. about a year, and have given the highest degree of satisfaction.

All the Passenger Cars now in use, and a considerable number of Merchandise Cars are furnished with them, and they will take the place of the Common Boxes on all the cars as fast as circumstances will permit.

Very Resp't.

L. TILTON,

Supt. Cheshire R. R.

Boston and Worcester Railroad, }
Boston, April 1st, 1851. }

H. F. Alexander, Esq.,

Dear Sir,—Lightner's Patent oil saving box for railroad cars, has been adopted by this corporation; we are taking out the common and substituting the

Lightner's at the rate of fifty boxes per month; it will soon take the place of all others, as it is decidedly preferable to any heretofore used by this corporation.

G. TWITCHELL, Supt.

Statement of amount of oil used on 32 8-wheel freight cars, on the Boston and Providence Railroad (with Lightner's Boxes) from March 10, 1849, to February 27, 1851, and upon 12 8-wheeled passenger cars from September 8, 1849, to February 27, 1851.

FREIGHT CARS.

Amount Oil.	No. months.	Amount Oil.	No. months.
1.—21 pts.	10	17.—23½ pts.	14
2.—19 "	6	18.—23½ "	11
3.—25 "	13	19.—36 "	21
4.—18 "	7	20.—22 "	10
5.—22 "	12	21.—38½ "	24
6.—24 "	13	22.—29 "	23
7.—20 "	11	23.—35½ "	23
8.—21 "	11	24.—37½ "	23
9.—23½ "	10	25.—51 "	23
10.—21 "	9	26.—31½ "	24
11.—20 "	9	27.—28½ "	23
12.—21½ "	11	28.—36 "	23
13.—19 "	8	29.—50½ "	24
14.—25½ "	17	30.—50 "	23
15.—20½ "	10	31.—41 "	23
16.—31 "	18	32.—39½ "	23

Total, 925½ pts. 510

PASSENGER CARS.

1.—19½ pts.	18	7.—30 pts.	18
2.—25½ "	18	8.—25½ "	18
3.—33½ "	16	9.—29 "	18
4.—19 "	15	10.—46½ "	17
5.—15 "	15	11.—9 "	9
6.—22 "	18	12.—65½ "	17

Total, 340 pts. 197

Averaging 1 4-5 pints of oil for freight, and 1 7-10 for passenger cars per month only!

All orders and enquiries promptly attended to.

BRIDGES & BROTHER,

No. 64 Courtlandt st., New York.

July 25, 1851.

Trautwine on R. R. Curves.

By JOHN C. TRAUTWINE, Civil Engineer,
Philadelphia, Pa.

JUST published, accompanied by a Table of Natural Sines and Tangents to single minutes, by means of which all the necessary calculations may be performed in the field.

This little volume is intended as a field-book for assistants; and will be found extremely useful, as it contains full instructions, (with wood cuts) for laying out, and adjusting curves; with Tables of Angles, Ordinates, etc., for Curves varying from 13 miles, down to 146 feet Radius.

A portable Table of Natural Sines and Tangents to minutes, has for a long time been a desideratum among Engineers, independently of its use in laying out curves.

The volume is neatly got up in duodecimo; and handsomely bound in pocket-book form.

Sold by Wm. Hamilton, Actuary of the Franklin Institute, Philadelphia. Price \$1.

Also, "Trautwine's Method of Calculating Excavation and Embankment."

By this method, which is entirely new, (being now made known for the first time) the cubic contents are ascertained with great ease, and rapidly, by means of diagrams, and tables of level cuttings. Thin octavo; neatly half bound, \$1. For sale by Wm. Hamilton.

June 28, 1851.

Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by POWERS & WEIGHTMAN, manufacturing Chemists, Philadelphia.

Jan. 20, 1849.

To Chief Engineers, Directors of Railroads, Canals, etc.

A Civil Engineer and Surveyor, who has been professionally engaged under the British Government, East India Company, etc., is desirous of obtaining employment as an Assistant. No objection to the South or West. Address for one month to C. E. & S., American Railroad Journal office.

August 16, 1851.

To Engineers.

A NEW WORK on the Marine Boilers of the United States, prepared from authentic drawings, and illustrated by 70 engravings, among which are those of the latest and best steamers in the country, has just been published by B. H. Bartol, Engineer, and is for sale at the store of

D. APPLETON & CO.,
Broadway

September 1, 1851.

Pneumatic process for making Foundations for Bridges, Piers, etc.

THE Attention of Engineers, Contractors, and Bridge Builders, etc., is directed to this method of forming secure foundations. Hollow Cylindrical piles from 8 inches to 10 feet in diameter may be sunk through sand, mud, clay, etc., to any required depth, and filled with concrete or masonry.

The efficacy and economy of the process has been demonstrated in the construction of numerous permanent works, at a much less cost than the use of any other method. (See evidence in Parliamentary enquiry, Railroad Journal, April 19, 1851.)

Contracts made, or licenses granted for the use of the invention in any part of the United States, by

CHARLES PONTEZ,
34 Liberty street, N. Y.

LOWMOOR IRON.

THE LOWMOOR IRON COMPANY having appointed Wm. BAILEY LANG their sole agent in America and Canada, he is now prepared to receive and execute all orders for Railway Tire Bars, bent, welded, and blocked Railway Tires, Axles, Piston Rods, and Boiler Plates. Also, plain, angle, rivet and every other description of Lowmoor Iron.

All communications respecting the above are requested to be sent to Wm. Bailey Lang, at his Steel Warehouse, No. 9 Liberty Square, Boston, or to the Lowmoor Iron Works, Bradford, Yorkshire, England.

30th Sept., 1851.

RAILROAD SPRINGS. Fuller's Patent India-rubber Springs.

PRICE reduced to 50 cents per pound. The owners of this Patent now manufacture the Springs in their own Factory, and guarantee that each spring shall perform its required duty.

Purchasers guaranteed against adverse claims. They may have full confidence in the working qualities of the springs.

The suits brought against Ray & Co., will soon be brought to issue, and we await the result with satisfaction, having full confidence in the pure administration of the Laws.

The long advertisements put forth by Ray & Co. about prior invention of the spring are worthless; he has not proved prior invention, and cannot sustain his patent in a Court of Law.

For the owners of Fuller's Patent,

G. M. KNEVITT,

23 Courtlandt st., New York.

October 7, 1851.

Railroad Iron.

THE undersigned, Agents for British Manufacturers, continue to sell Railroad Iron of the best quality, and of any weight or pattern required; deliverable at any part of the United States or Canada.

They have now on hand, ready for delivery New York:

2,000 tons of an approved pattern, weighing about 60 lbs. to the yard.

WM. F. WELD & CO.,
42 Central Wharf, Boston.

Practical and Scientific Books

PUBLISHED BY

HENRY CAREY BAIRD,

SUCCESSOR TO E. L. CAREY, PHILADELPHIA.

For sale by Dewitt & Davenport, Tribune Buildings, New York, and Booksellers generally throughout the United States and Canada.

Now being published in Twelve Parts, price 25 cents each, the **PRACTICAL MODEL CALCULATOR**, for the Engineer, Machinist, Manufacturer of Engine work, Naval Architect, Miner and Millwright.—By Oliver Byrne, Compiler and Editor of the Dictionary of Machines, Mechanics, Engine Work and Engineering, and Author of various Mathematical and Mechanical works—illustrated by numerous Engravings; forming, when completed, one large volume, octavo, of nearly 600 pages.

It will contain such calculations as are met with and required in the Mechanical Arts, and establish models or standards to guide practical men. The tables that are introduced, many of which are new, will greatly economise labor, and render the everyday calculations of the *practical man* comprehensive and easy. From every single calculation given in this work other calculations are readily modeled, so that each may be considered the head of a numerous family of practical results.

The examples selected will be found appropriate, and in all cases taken from the actual practice of the present time. Every rule has been tested by the unerring results of mathematical research, and confirmed by experiment, when such was necessary.

The Practical Model Calculator, will be found to fill a vacancy in the library of the practical working man long considered a requirement. It will be found to excel all other works of a similar nature, from the great extent of its range, the exemplary nature of its well selected examples, and from the easy, simple and systematic manner in which the model calculations are established.

Parts 1, 2 and 3 now ready.

American Miller and Millwright's Assistant. By W. C. Hughes. 12mo., illustrated.....	\$1 00
Byrne's Practical Model Calculator. In 12 parts, each.....	25
Byrne's Treatise on the American Steam Engine. 8vo. [in press].....	
Booth's Encyclopedia of Chemistry. In one vol. royal 8vo, 974 pages, sheep.....	5 00
Builders' Companion. By A. C. Smeaton.—Seventy illustrations, 12mo., cloth.....	1 00
Cotton Spinner and Manufacturers' Companion. By Scott and Byrne. In one vol. 8vo., cloth, with large working drawings.....	3 50
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Dyer and Color Maker's Companion. 12mo., cloth.....	75
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Fisher's Photogenic Manipulation. 16mo., cloth.....	32
Gregory's Mathematics for Practical Men. Illustrated, 8vo., cloth.....	1 50
Household Surgery, or Hints on Emergencies. By J. F. South, M.D. 12mo., cloth.....	1 25
Leslie's Complete Cookery. 41st edition, 12 mo., sheep.....	1 00
Morfit's Perfumery: its Use and Manufacture. 12mo., cloth.....	1 00
Morris's Treatise on Tanning, Currying, and Leather Dressing in General. In one vol. large 8vo., [in press].....	
Norris's Hand-book for Locomotive Engineers. By Septimus Norris. 12mo., cloth.....	1 50
Neill's Fruit, Flower and Kitchen Garden. Illustrated by numerous plates, 12mo. cloth.....	1 25
Overman on the Manufacture of Iron and Steel. Illustrated, 8vo., cloth, new edition.....	5 00
Practical Metal Workers' Assistant. By C. Holtzappel, with numerous illustrations, 8vo., cloth.....	4 00
Painter, Gilder, and Varnishers' Companion. New edition, 12mo., cloth.....	75
Randall's Sheep Husbandry in the South. Illustrated, 8vo., cloth.....	1 25
Steam for the Million. 8vo., paper.....	37

Best Cast Steel Axles & Tires,

(A NEW ARTICLE.)

For Railroad Carriages and Locomotives.

THE quality of this Steel is sufficiently attested in the announcement that it has carried off the first prizes awarded at the World's competition of 1851, in London. The axles are in general use on the Continent, and are now offered in competition with any other that can be produced; and to be tested in any way that may be desired by the Engineers of the United States, either by impact or by torsion. This Steel is manufactured by Fried Krupp, Esq., of Essen, in Renish Prussia, represented in the United States by

THOS. PROSSER & SON,
28 Platt st., New York.

November 1.

To Railroad and Canal Companies, Contractors, etc.

THE undersigned wishes to direct the attention of Chief Engineers and Contractors to the facilities he possesses for supplying them with workmen, laborers, etc. of any description, and also to remind them that he forwards such men to whatever destination they may be required.

Companies or Contractors desirous of receiving peaceable and industrious men, will be promptly supplied at the shortest possible notice.

C. B. RICHARDS,

No. 85 Greenwich Street, New York.

REFERENCES:—Chas. H. Webb, Esq., Supt. of the St. George's and British Protective Society, New York; Messrs. Harris and Leech, Philadelphia, Wm. P. Malburn, Esq., Albany.

To Stone Masons.

THE NEW ALBANY AND SALEM RAILROAD Company have about 10,000 c. yards of Abutment Masonry to let at private contract, to be completed by the 1st of July, 1852.

To contractors who can produce testimonials of character for ability as STONE MASONS, fair, remunerating prices will be given.

Early applicants, by securing the work now offered, will gain advantages over competitors for the erection of an additional 15,000 yards, to be let out early next spring, in bridging the streams between Bedford and Michigan City, via Bloomington, Gosport, Crawfordsville and Lafayette, (the most productive and healthy region in Indiana,) by the knowledge they will have acquired of the resources of the country.

Application may be made in person, or by letter addressed to the undersigned, at New Albany, Indiana.

S. B. WILSON, Engineer.

Engineer's Office, New Albany,
Sept. 29th, 1851.

Engine Waste.

CLEAN WASTE for Locomotive and Steam-boat Engines, in lots as wanted; also, superior Steam Packing. Orders, with explicit directions for forwarding, should be addressed to

J. MORTIMER HALL,
36 South st., New York.

November 1. 3m

Notice to Contractors.

SEALED proposals will be received at the office of the company in Galesburg, on Wednesday, the 24th day of December next, for the grading, bridging and masonry of the Central Military Track road. The road will be nearly fifty miles in length, and embraces a variety of work well worth the attention of contractors.

Proposals will also be received at the same time and place, for the Cross Ties, to be delivered at different points on the line.

Contractors will be expected to state in their bids the amount of the stock of the company they will be willing to take for work done; and preference will be given to those bidders who will take the greatest amount of stock.

Plans, profiles, specifications, etc. will be exhibited ten days previous to the day of letting, and all the necessary information with regard to the manner of its construction, etc., furnished by the engineer of the Board.

By order of the Board of Directors.

WM. McMURTRY, President.

GEO. G. LANPHERE, Secretary.

To Railroad Companies, etc.



The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

I also invite attention to an improved PATENT SPRING LOCK, for SLIDING Doors to Freight and Baggage Cars, now in use upon the Pennsylvania Central, Greensville and Columbia, S.C., Reading, Pa., and other Railroads.

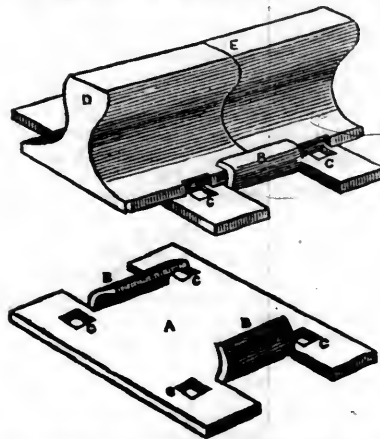
Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH,

46 South 8th St. Philadelphia.

May 9, 1851.

The American Railroad Chair Manufacturing Co.



ARE prepared to make WROUGHT IRON RAILROAD CHAIRS, of various sizes, at short notice.

By use of the WROUGHT IRON CHAIR, the necessity of the wedge is entirely done away—the lips of the chair being set, by means of a sledge or hammer, close and firmly to the flange of the rail.

The less thickness of metal necessary in the Wrought Iron Chair gives much greater power and force to the spikes when driven—and consequently a much less liability to the spreading of the rails by reason of the spikes drawing or becoming bent.

The less weight necessary in the Wrought Iron Chair, will enable us to furnish them at a cost much below that of CAST IRON CHAIRS.

DESCRIPTION OF THE ABOVE CUTS.

Figure 1 is a perspective view of the rail secured in the chair, and fig. 2 is a perspective view of the chair itself. D, E, are sections of two rails placed together, and secured at the joint on the chair by the jaws B, B. The chair is bolted down by spikes C, C. In fig. 2, the chair is represented as made of a single block or plate A of wrought iron.

The chair is set in its proper place on the track, spiked down, and the ends of the two rails brought together within the jaws as represented in fig. 1.

For further information address,

N. C. TROWERIDGE, Secretary,
Poughkeepsie, N. Y.

June 1, 1851.

Railroad Commission Agency.

THE Subscriber offers his services to Railroad Co's and Car Makers for the purchase of equipment and furniture of roads and depots and all articles and materials required in the construction of cars, with cash or approved credit. No effort will be spared to select the best articles at the lowest market price.

He is sole Agent for the manufacture of the ENAMELED CAR LININGS, now in universal use. The best Artists are employed in designing new styles, and he will make to order pieces with appropriate designs for every part of the car, in all colors, or with silver grounds and bronzed or velvet figures.

He is also Agent for Page's Car Window Sash Fasteners, which is preferred by all who have used it to any other.

CHARLES STODDER,
75 Kilby st., Boston.

June 20, 1851.

3m.

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